

WAYNE STATE UNIVERSITY

GRADUATE BULLETIN

1998-2000



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Academic Calendar 1998 - 2000

Spring/Summer Term, 1998

Term begins	Wed., May 6, 1998
Spring and Spring/Summer Classes begin	Mon., May 11
Last day for filing degree applications	Mon., May 11
Memorial Day recess	Mon., May 25
Day scheduled as Monday for Spring and Spring/Summer Sessions ¹	Fri., May 29
Classes end for Spring Session	Fri., June 26
Study Day for Spring Session	Sat., June 27
Final Examinations for Spring Session	Mon., June 29 - Tues., June 30
Summer Session begins	Wed., July 1
Independence Day recess	Fri., July 3
Priority Registration for Fall Term	Mon., July 6 - Sat., Aug. 15
Classes end for Spring/Summer Session	Fri., July 31
Study Day for Spring/Summer Session	Sat., Aug. 1
Final Examinations for Spring/Summer Session	Mon., Aug. 3 - Thurs., Aug. 6
Classes end for Summer Session	Tues., Aug. 18
Study Day for Summer Session	Wed., Aug. 19
Final Examinations for Summer Session	Thurs., Aug. 20 - Fri., Aug. 21
Spring/Summer Term ends	Mon., Aug. 24, 1998

Fall Term, 1998

University year appointments begin ²	Tues., Aug. 18, 1998
Term begins	Tues., Aug. 25
Late Priority Registration	Mon., Aug. 31 - Fri., Sept. 4
Labor Day recess	Mon., Sept. 7
Classes begin	Tues., Sept. 8
Last day for filing degree applications	Tues., Sept. 8
Priority registration for Winter Term	Mon., Nov. 2 - Wed., Dec. 16
Day scheduled as Thursday ¹	Tues., Nov. 24
Day scheduled as Friday ¹	Wed., Nov. 25
Thanksgiving recess	Thurs., Nov. 26 - Sat., Nov. 28
Classes end	Wed., Dec. 16
Final Examinations	Thurs., Dec. 17 - Wed., Dec. 23
Commencement	Thurs., Dec. 17
Holiday recess	Fri., Dec. 25, 1998 - Fri., Jan. 1, 1999
Term ends	Thurs., Dec. 31, 1998

Winter Term, 1999

Term begins	Fri., Jan. 1, 1999
Late Priority Registration	Mon., Jan. 4 - Fri., Jan. 8
Classes begin	Mon., Jan. 11
Last day for filing degree applications	Mon., Jan. 11
Martin Luther King Birthday Observance (no classes)	Mon., Jan. 18
Spring recess	Mon., March 15 - Sat., March 20
Priority Registration for Spring/Summer Term	Mon., March 22 - Wed., April 21
Classes end	Mon., April 26
Study Day	Tues., April 27
Final Examinations	Wed., April 28 - Tues., May 4
Term ends	Tues., May 4
Commencement	Tues., May 4
University year appointments end ²	Sun., May 16, 1999

Spring/Summer Term, 1999

Term begins	Wed., May 5, 1999
Late Priority Registration	Mon., May 3 - Fri., May 7
Spring and Spring/Summer Classes begin	Mon., May 10
Last day for filing degree applications	Mon., May 10
Memorial Day recess	Mon., May 31
Day scheduled as Monday for Spring and Spring/Summer Sessions ¹	Fri., June 4
Classes end for Spring Session	Fri., June 25
Study Day for Spring Session	Sat., June 26
Final Examinations for Spring Session	Mon., June 28 - Tues., June 29
Summer Session begins	Wed., June 30
Independence Day recess	Mon., July 5
Priority Registration for Fall Term	Tues., July 6 - Sat., Aug. 14
Day scheduled as Monday for Spring/Summer and Summer Sessions ¹	Fri., July 9
Classes end for Spring/Summer Session	Fri., July 30
Study Day for Spring/Summer Session	Sat., July 31
Final Examinations for Spring/Summer Session	Mon., Aug. 2 - Thurs., Aug. 5
Classes end for Summer Session	Tues., Aug. 17
Study Day for Summer Session	Wed., Aug. 18
Final Examinations for Summer Session	Thurs., Aug. 19 - Fri., Aug. 20
Spring/Summer Term ends	Sat., Aug. 28, 1999

Fall Term, 1999*

University year appointments begin ²	Sun., Aug. 22, 1999
Term begins	Sun., Aug. 29
Late Priority Registration	Mon., Aug. 30 - Fri., Sept. 3
Labor Day recess	Mon., Sept. 6
Classes begin	Tues., Sept. 7
Last day for filing degree applications	Tues., Sept. 7
Priority Registration for Winter Term	Mon., Nov. 1 - Wed., Dec. 15
Day scheduled as Thursday ¹	Tues., Nov. 23
Day scheduled as Friday ¹	Wed., Nov. 24
Thanksgiving recess	Thurs., Nov. 25 - Sat., Nov. 27
Classes end	Wed., Dec. 15
Study Day	Thurs., Dec. 16
Commencement	Thurs., Dec. 16
Final Examinations	Fri., Dec. 17 - Thurs., Dec. 23
Holiday recess	Sat., Dec. 25, 1999 - Sat., Jan. 1, 2000
Term ends	Fri., Dec. 31, 1999

Winter Term, 2000*

Term begins	Sat., Jan. 1, 2000
Late Priority Registration	Mon., Jan. 3 - Fri., Jan. 7
Classes begin	Mon., Jan. 10
Last day for filing degree applications	Mon., Jan. 10
Martin Luther King Birthday Observance (no classes)	Mon., Jan. 17
Spring recess	Mon., March 13 - Sat., March 18
Classes end	Mon., April 24
Study Day	Tues., April 25
Final Examinations	Wed., April 26 - Tues., May 2
Term ends	Tues., May 2
Commencement	Tues., May 2
University year appointments end ²	Sun., May 21, 2000

1. An equal number of class days is needed for some laboratory courses. To make up for class days lost due to observance of holidays, substitute class days are scheduled.

2. University Year Appointments are a full nine months in length. Individual service assignments are the responsibility of the appropriate Dean, or, by delegation, the Department Chairperson.

* Tentative.

GENERAL INFORMATION

This publication is for information purposes and is neither a contract nor an offer to contract. The University reserves the right to change any provision or requirement at any time without notice.

Contained in the following section are the general rules and regulations for graduate study at Wayne State University. It is the responsibility of the student to meet and satisfy all University, college and program requirements.

Administration of the University

Board of Governors

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DIANE L. DUNASKISS, Vice Chairperson of the Board of Governors
CLIMETENE McCLAIN, Secretary to the Board of Governors
and Assistant to the President
JOHN L. DAVIS, Treasurer

University Administrative Officers

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WILLIAM H. MARKUS, Ph.D., Vice President for Student Affairs
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JOHN OLIVER, Ph.D., Deputy Vice President for Academic Affairs
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BARBARA K. REDMAN, Ph.D., Dean of the College of Nursing
DONALD RITZENHEIN, M.A., Interim Vice President for Development
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SUE M. SMOCK, Ph.D., Dean of the College of Urban, Labor and
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ROBERT J. SOKOL, M.D., Dean of the School of Medicine
JEFFREY STOLTMAN, Ph.D. Interim Vice President for Marketing
and Communication
J. RICHARD THORNDERSON, Ph.D., Associate Vice President for Faculty Relations
DANIEL A. WALZ, Ph.D., Vice President for Research and
Dean of the Graduate School
PAULA C. WOOD, Ph.D., Dean of the College of Education
Appointment Pending: Dean of the College of Liberal Arts

Foreword

University Mission

Wayne State University is a national research university with an urban teaching and service mission. It is a constitutionally autonomous public university within Michigan's system of public colleges and universities.

As a national research university, Wayne State is committed to high standards in research and scholarship. In the arts, it fosters creativity and strives for excellence in performance and exhibition. Its first priority is to develop new knowledge and encourage its application. Because it is a national research university, Wayne State develops and maintains strong graduate and professional programs in many fields. To maintain its standards, Wayne State seeks to strengthen those programs that have achieved national recognition while, at the same time, fostering those programs which show promise for the future. Wayne State strives to maintain its performance ranking as measured by its funded research, the quality of its graduate programs as evaluated by national studies of graduate education, and the effectiveness of all academic programs as assessed by external evaluation.

As an urban teaching university, and because its graduates typically remain to live and work in the area throughout their lives, Wayne State seeks especially to serve residents of the greater Detroit metropolitan area, although it enrolls students from across the state and nation as well as foreign lands. It makes available high quality educational programs in more than six hundred fields of study or concentration leading to more than three hundred different degrees at the bachelor's, master's and doctoral levels. As a nationally ranked university, Wayne State holds high expectations for the educational achievements of its students and consequently maintains selective admissions standards; but as an urban university it recognizes an obligation to develop special avenues that encourage access for promising students from disadvantaged educational backgrounds. The University aspires to implement its curricula in ways that serve the needs of a nontraditional student population that is racially and ethnically diverse, commuting, working, and raising families. Its student body is composed of students of traditional college age together with many older students, and includes many who are from the first generation in their family or neighborhood to attend a university. In its teaching, the University strives to be sensitive to the special experiences, conditions, and opportunities presented by this diversity in its student body. To meet its obligations to its nontraditional students, the University attempts to schedule classes throughout the metropolitan area and during the evening as well as during the day.

Wayne State University recognizes its obligation to serve. Like other major universities, it strives to serve the disciplines and professions represented among its academic programs as well as public and private sector organizations and associations at local, state, and national levels. As an urban university, it makes a special commitment to the Detroit metropolitan area in three ways: first, it uses its metropolitan locale as a setting for basic and applied research and fosters the development of new knowledge of urban physical and social environments; second, it employs its locale as a teaching laboratory and incorporates metropolitan area materials into its curriculum; and third, it brings knowledge to bear to assist and strengthen the metropolitan area. In particular, Wayne State University contributes to the economic revitalization of southeastern Michigan through research programs that develop new technology and teaching programs that educate the citizens who will live and work in the region in the coming years.

Wayne State University respects and protects the personal and academic freedom of its students, faculty and academic staff. The programs and activities of the University are open to all qualified persons without regard to race, religion, marital status, sex, sexual orientation, age, national or ethnic origin, political belief, or physical handicap, except as may be required by law. The University seeks to demonstrate, through all its programs and activities, its appreciation of human diversity and to maintain an atmosphere of tolerance and

mutual respect that will nourish human liberty and democratic citizenship.

A relatively youthful state university—part of Michigan's state supported system of higher education only since 1956—Wayne State University has developed rapidly as a national research university with urban teaching and service missions. Nevertheless, it recognizes that much must be achieved before the goals it holds for itself are fully attained. It is pursuing those goals with pride in its progress and confidence in its future.

History of the University

Wayne State has more than 194,228 living alumni. More than 141,705 of them live in the state and more than 121,415 live in the Detroit area. Over thirty percent of all degree holding adults in the metropolitan area are Wayne State University alumni.

The early history of the University is an account of originally unrelated colleges and schools which were united in 1933 into a single institution, Wayne University, under the control of the Detroit Board of Education. In 1956, this institution became Wayne State University by formal action of the Governor and Legislature of Michigan. The following specific events are among the most significant in the University's first century of development.

1868 — The Detroit Medical College, forerunner of the School of Medicine, was established.

1881 — The Detroit Normal Training School, forerunner of the College of Education, was established.

1917 — The Detroit Junior College, offering a two-year program in general education, was established in 'Old Main' and later developed into the College of Liberal Arts.

1923 — The Detroit Normal Training School became a four-year degree-granting institution under the name of the Detroit Teachers College. The first degrees were granted in 1924. The Detroit Junior College became the College of the City of Detroit with four-year degree programs. The first degrees were conferred in 1925.

1924 — The College of Pharmacy was organized.

1930 — The first regular graduate courses were offered in Liberal Arts and Education. The first Master's degrees were conferred in 1932.

1933 — The College of Engineering and the Graduate School were established.

1933 — The Colleges of Liberal Arts, Education, Engineering, Medicine and Pharmacy and the Graduate School were united by action of the Detroit Board of Education into a university organization, temporarily called the Colleges of the City of Detroit.

1934 — The name Wayne University was adopted, taken from Wayne County and, ultimately, from General Anthony Wayne.

1935 — The School of Public Affairs and Social Work was organized. In 1950 it became the present School of Social Work.

1937 — The Law School, established in 1927 as Detroit City Law School, came into the University.

1945 — The first doctoral programs were authorized in the fields of Chemistry, Physiological Chemistry and Education.

1945 — The College of Nursing, which began as a program in the College of the City of Detroit, became a separate college.

1946 — The School of Business Administration, originating in the College of Liberal Arts, became the tenth academic unit in the University.

1956 — Wayne University became Wayne State University by Act 183 of Michigan Public Acts of 1956.

1959— Monteith College was established.

1959 — Wayne State University became a constitutionally established University by popularly adopted amendment to the Michigan Constitution.

1964 — The Division of Urban Extension was established.

1973 — The College of Lifelong Learning was established as successor to the Division of Urban Extension.

1974 — The College of Pharmacy and Allied Health Professions was formed from merger of the College of Pharmacy and the Division of Allied Health Professions, School of Medicine.

1985 — The School of Fine and Performing Arts and the College of Urban, Labor and Metropolitan Affairs were established.

1989 — The name of the School of Fine and Performing Arts was changed to the College of Fine, Performing and Communication Arts.

1993 — The College of Science was established.

Location

Over 100 buildings provide housing for the service, instructional and research needs of the University and its students and staff. Most academic and service units of the University are located on the main campus in the heart of Detroit, largely bounded by York Street on the north, Woodward Avenue on the East, Forest Avenue on the south and Trumbull Avenue on the west. The major classroom, laboratory, library and other academic buildings are located east of the Lodge Expressway while the athletic and recreational facilities are mostly on the west side of the Expressway. (For maps, see page 504.)

The School of Medicine and its affiliated teaching hospitals and clinics are located a short distance south and east of the main campus in the Detroit Medical Center. The downtown campus, with its principal building at 1400 Chrysler, provides facilities for the College of Pharmacy and Allied Health Professions. Certain smaller instructional and service units are located in other parts of the metropolitan area.

Organization

The general governance of Wayne State University is constitutionally vested in the Board of Governors, consisting of eight popularly elected members and the President of the University, who is named by the elected members. The President is the chief executive officer of the University and is charged by the Board of Governors with responsibility for its administration.

For educational and administrative purposes, the University is organized into major academic units—schools, colleges, divisions, centers and institutes. The following schools, colleges and divisions offer degree programs in their respective areas and together constitute the heart of the University.

School of Business Administration

College of Education

College of Engineering

College of Fine, Performing and Communication Arts

Graduate School

Law School

College of Liberal Arts

College of Lifelong Learning

School of Medicine

College of Nursing

College of Pharmacy and Allied Health Professions

College of Science

School of Social Work

College of Urban, Labor, and Metropolitan Affairs

The Dean of the college or school is its chief executive officer. More than half the colleges and schools are organized into departments or divisions, each administered by a chairperson (or head). Academic standards, curricular development, course revision and similar academic matters are the primary responsibility of the faculty and dean of the college or school, although these matters are subject to review and approval by the Vice President for Academic Affairs and by the

President and, whenever they involve major educational policy decisions, by the Academic Senate.

The Graduate School is the central unit for the supervision and encouragement of graduate work in the University and has basic responsibility for the improvement and review of existing programs and the approval of new graduate programs. Except for applicants and candidates for the Doctor of Philosophy degree, the detailed supervision of graduate students' work is conducted by the college and school and, where appropriate, by the departments.

All degrees are granted by the University through the colleges and schools, except that the Dean of the Graduate School, with the approval of the Graduate Council, recommends candidates for the Doctor of Philosophy degree, selected master's degrees and interdisciplinary graduate certificate programs.

The College of Lifelong Learning provides, in addition to its own credit courses, extension services for the off-campus credit programs of the other colleges and schools, as well as University-wide Spring/Summer sessions. Since the University does not have a separate evening program, the colleges, schools and instructional divisions have comprehensive responsibility for degrees and degree programs whenever they are offered.

Non-credit courses, seminars and programs are offered primarily through the College of Lifelong Learning, the McGregor Memorial Conference Center, and the various schools, colleges, centers and institutes.

Centers and institutes are established by the Board of Governors on recommendation of the President for the purpose of conducting college- or University-wide interdisciplinary teaching, research and service activities. The principal centers and institutes are:

Addiction Research Institute
African American Film Institute
Asthma and Related Lung Disorders Research Center
Barbara Ann Karmanos Cancer Institute
Bioengineering Center
Center for Academic Ethics
Center for Arts and Public Policy
Center for Automotive Research
Center for Chicano-Boricua Studies
Center for Healthcare Effectiveness Research
Center for Health Research
Center for International Business Education and Research
Center for Legal Studies
Center for Molecular Medicine and Genetics
Center for Peace and Conflict Studies
Center for Urban Studies
Cohn-Haddow Center for Judaic Studies
C.S. Mott Center for Human Growth and Development
Detroit Neurotrauma Institute
Developmental Disabilities Institute
Humanities Center
Institute for Manufacturing Research.
Institute of Chemical Toxicology
Institute of Gerontology
Institute of Maternal and Child Health
Labor Studies Center
Merrill-Palmer Institute for Family and Human Development
Michigan Small Business Development Center
Race Relations Institute
Skillman Center for Children

Accreditation

Wayne State University as a whole is accredited as a doctoral degree-granting institution by the regional accrediting agency, the Commission on Institutions of Higher Education of the North Central Association of Colleges and Schools, 30 N. LaSalle St., Suite 2400, Chicago, Illinois 60602-2504. In addition, more than forty specific programs and curricula are accredited individually by specialized or professional accrediting agencies. A report is produced annually for the Board of Governors which designates the accrediting agencies of the University's programs; the report is available from the Board of Governors' Office, 4165 Faculty Administration Building. The principal accreditation agencies are as follows:

BUSINESS ADMINISTRATION

Accreditation Council of the American Assembly of Collegiate Schools of Business

EDUCATION

Counseling (graduate only): *Council for Accreditation of Counseling and Related Educational Programs*

Teacher Education Programs: *National Council for the Accreditation of Teacher Education*

Rehabilitation Counseling & Community Inclusion (graduate only): *Council on Rehabilitation Education, Inc.*

ENGINEERING

Division of Engineering (undergraduate): *Accreditation Board for Engineering and Technology, Inc.— Engineering Accreditation Commission*

Division of Engineering Technology: *Accreditation Board for Engineering and Technology, Inc.— Technology Accreditation Commission*

FINE, PERFORMING and COMMUNICATION ARTS

Music: *National Association of Schools of Music; National Association of Music Therapy*

Theatre: *National Association of Schools of Theatre*

LAW

American Bar Association and American Association of Law Schools (Joint Committee)

LIBERAL ARTS

Political Science (Master of Public Administration): *National Association of Schools of Public Affairs and Administration*

LIBRARY SCIENCE and INFORMATION SCIENCE

American Library Association

MEDICINE

Doctor of Medicine Degree Program (M.D.) *Liaison Committee on Medical Education, representing the American Medical Association and the Association of American Medical Colleges*

Residency Programs: *Liaison Committee on Graduate Medical Education of the American Medical Association and various Residency Review Committees*

Continuing Medical Education: *Accreditation Council of Continuing Medical Education*

NURSING

National League for Nursing

PHARMACY and ALLIED HEALTH PROFESSIONS

Pharmacy: *American Council on Pharmaceutical Education*

Occupational Therapy: *American Occupational Therapy Association and Committee on Allied Health and Accreditation of the American Medical Association*

Physical Therapy: *American Physical Therapy Association*

Physician Assistant Program: *Accreditation Review Committee on Education for the Physician Assistant (Commission on Accreditation of Allied Health Education Programs)*

Nurse Anesthesia: *American Association of Nurse Anesthetists (Council on Accreditation of Nurse Anesthesia Educational Programs)*

Occupational and Environmental Health Sciences: *Accreditation Board of Engineering and Technology-Related Accreditations*

Radiation Therapy Technology: *Joint Review Committee on Education in Radiation Technology and Committee on Allied Health and Accreditation of the American Medical Association*

Clinical Laboratory Science: *National Accrediting Agency for Clinical Laboratory Sciences and Committee on Allied Health Education and Accreditation of the American Medical Association*

Mortuary Science: *American Board of Funeral Service Education, Inc.*

SCIENCE

Audiology: *Educational Standards Board of the American Speech-Language Hearing Association*

Chemistry: *American Chemical Society*

Nutrition and Food Science (dietetics): *American Dietetics Association*

Psychology (Clinical) *American Psychological Association*

Communication Disorders and Sciences (Speech-Language Pathology): *American Speech-Language Hearing Association*

SOCIAL WORK

Council on Social Work Education

URBAN, LABOR and METROPOLITAN AFFAIRS

Urban Planning: *Planning Accreditation Board*

Equality of Opportunity

Wayne State University is committed to a policy of non-discrimination and equal opportunity in all of its operations, employment opportunities, educational programs and related activities.

This policy embraces all persons regardless of race, color, sex, national origin, religion, age, sexual orientation, marital status or handicap, and expressly forbids sexual harassment and discrimination in hiring, terms of employment, tenure, promotion, placement and discharge of employees, admission, training and treatment of students, extra-curricular activities, the use of University services, facilities, and the awarding of contracts. This policy also forbids retaliation and/or any form of harassment against an individual as a result of filing a complaint of discrimination.

Wayne State University complies with the Titles VI and VII of the Civil Rights Act of 1964, Executive Order 11246 as Amended, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, the Age Discrimination Act of 1975, the Vietnam Era Veterans Readjustment Assistance Act of 1974, and Michigan Public Act 453. Inquiries regarding equal opportunity and affirmative action policies or complaints may be made to the Director of the Office of Equal Opportunity, 3008 Faculty/Administration Building, Wayne State University, Detroit Michigan 48202; telephone (313) 577-2280.

Non-Discrimination for the Handicapped

In accordance with federal requirements of the Rehabilitation Act of 1973, there shall be no discrimination on the basis of handicap in Wayne State University's programs, operations and activities, in the hiring, terms and conditions or privileges of employment or any matter directly or indirectly related to such employment, or in the admission, education and treatment of students. (See page 46 for description of services available to disabled students.)

Drug and Alcohol Free Workplace

Wayne State University is committed to providing a drug free environment for its faculty, staff, and students. The Board of Governors has made this commitment a formal policy of the University. All faculty, staff and students must abide by the terms of the Board policy as a condition of employment or enrollment at the University. The unlawful possession, use, distribution, sale or manufacture of drugs or alcohol is prohibited on University premises, at University activities, and at University work sites.

Pursuant to that policy, the unlawful possession, use, distribution, dispensation, sale or manufacture of any illicit drugs, and the unlawful possession, use or distribution of alcohol on University property, or at any University work site, or as part of any University activity, is prohibited.

Any employee or student employee who is convicted of a criminal drug offense occurring at the workplace is subject to appropriate employee discipline in accordance with established University policies and collective bargaining agreements, and may be required to participate satisfactorily in a drug abuse or rehabilitation program as a condition of further employment or enrollment.

Any student or employee who, while on University premises or at any University activity, engages in the unlawful possession, sale, manufacture, distribution, or use of drugs or alcohol shall be subject to appropriate sanctions, in accordance with established University policies and collective bargaining agreements, and in conformity with local, state and federal law, up to and including expulsion or termination. A student or employee who is found to have violated this policy may be required to participate in a drug or alcohol treatment program as a condition of further employment or enrollment.

The University encourages employees who may have a problem with the use of illicit drugs or with the abuse of alcohol to seek professional advice and treatment. Individuals who seek assistance with such problems may obtain additional information on a confidential basis by telephoning the Substance Abuse Hotline, at 577-1010. Access to this hotline is absolutely anonymous. The Substance Abuse Hotline provides information to the caller by means of recorded messages and no record is kept of the caller. Students may also seek referral assistance by contacting University Counseling Services, at 577-3398.

Policy on Sexual Harassment

It is the policy of Wayne State University that no member of the University community may sexually harass another. Any employee or student will be subject to disciplinary action for violation of this policy.

The law of the State of Michigan prohibits discrimination in employment and in education and provides that discrimination because of sex includes sexual harassment, which means unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct or communication of a sexual nature when:

(a) Submission to such conduct or communication is made a term or condition either explicitly or implicitly to obtain employment, public accommodations or public services, education, or housing.

(b) Submission to or rejection of such conduct or communication by an individual is used as a factor in decisions affecting such individual's employment, public accommodations or public services, education, or housing.

(c) Such conduct or communication has the purpose or effect of substantially interfering with an individual's employment, public accommodations or public services, educational, or housing environment. (MCLA 37.2103 (h))

In the area of speech, what the law and this policy prohibit is speech as action: that is, sexual communication which is either directly coercive as demanding favors, or indirectly coercive, as rising to that level of offensiveness which interferes substantially with the victim's education or employment. The determination of what level of offensiveness is actually coercive, and therefore unlawful and prohibited by this policy, will in some cases be difficult. A significant element in the determination is provided by the fact that an unequal power relationship underlies sexual harassment. The more unequal the relation-

ship, the more the risk is of substantial interference with the victim's education or employment.

In the area of physical contact, physical contact which is unwelcome is so gravely offensive that it always has the effect of substantially interfering with the victim's employment or educational environment. Employees and students should not take for granted that they are welcome to touch other employees or students, since if their contact is in fact unwelcome, they will be in violation of the law and of this policy. (WSUCA 2.28.06.010-2.28.06.080)

GRADUATE SCHOOL

Mission Statement

The Graduate School of Wayne State University provides leadership in the development, promulgation, and administration of graduate education policies; in the assurance of the quality and integrity of graduate programs; in the administration and regulation of funds that support graduate studies; and in the monitoring of the academic requirements for the Ph.D. degree and specific master's degrees and graduate certificates. Our primary goal is to serve current and prospective graduate students and our graduate faculty. We are also aware that our work contributes to the quality and character of the graduate education experience in the state and in the nation.

As a graduate school in a Carnegie I research university, we approach our work with a deep commitment to the highest standards of academic performance and ethical behavior. We demonstrate our support of our university's urban mission and destiny by being consistently responsive to the economic conditions and educational needs of the Detroit metropolitan community. We assume an advocacy role for our graduate students, and strive to serve faculty, students, and the general public efficiently, promptly, and courteously. We continuously seek to improve our service in accordance with our University's commitment to excellence and quality.

History and Procedures

Wayne State University's graduate and professional programs were established early in the history of the University. These programs were unified within the newly-created Graduate School in 1933. Since that time, the Graduate School has grown steadily both in terms of quality and size and now ranks as one of the largest graduate schools in the nation. The University's Carnegie I research status is reflective of a deep commitment to excellence in graduate education, relevance in academic curriculum, and leadership in research and scholarship.

The Graduate School is the central unit for the supervision and encouragement of graduate work in the University and has basic responsibility for the improvement and review of existing programs. The Graduate School monitors every significant stage in the doctoral student's career and ensures that all University-wide requirements have been fulfilled. Ph.D. *Plans of Work* must be approved and Graduate Examiners appointed by the Graduate School. A Ph.D. applicant cannot advance to Ph.D. candidacy without the Graduate School's approval of a dissertation proposal. After the dissertation defense, the Graduate School conducts a final audit of the student's record to certify him or her for graduation.

For additional information, see the separate sections on Graduate School Admission, Graduate School Services for Students, Graduate Council, Graduate Faculty, and Financial Aid. See also the Graduate School's World Wide Web page at the following address: <http://gopher.orsps.wayne.edu/grad/gradschool.html>

GRADUATE DIRECTORY

UNIVERSITY ADDRESS

Wayne State University
Detroit, Michigan 48202
Telephone Area Code (313)

GRADUATE SCHOOL

Main Office
4300 Faculty/Administration Building
Telephone: 577-2170

Ph.D. Office
4327 Faculty/Administration Building
Telephone: 577-2171

Fellowships and Scholarships Office
4302 Faculty/Administration Building
Telephone: 577-2172

Graduate Council Office
4307 Faculty/Administration Building
Telephone: 577-8050

World Wide Web
[Http://gopher.orsps.wayne.edu/grad/gradschool.html](http://gopher.orsps.wayne.edu/grad/gradschool.html)

GRADUATE ADMISSION

Office of University Admissions
3E, Helen Newberry Joy Student Services Building
Telephone: 577-3596

GRADUATE ASSISTANTSHIPS

Write the chairperson of the department in which you intend to major.

INTERNATIONAL STUDENT ADVISING

International Student Services Office
5460 Cass Avenue, Second Floor
Telephone: 577-3422

LOANS AND COLLEGE WORK-STUDY

Office of Scholarships and Financial Aid
3 West, Helen Newberry Joy Student Services Center
Telephone: 577-3378

STUDENT EMPLOYMENT

Placement Services
1001 Faculty/Administration Building
Telephone: 577-3390

BULLETIN REQUESTS

WSU Opportunity Line
Telephone: (313) 577-1000

CAMPUS HOUSING

700 Merrick Telephone: 577-2116

REGISTRATION

2 West, Helen Newberry Joy Student Services Center
Telephone: 577-3541

PUBLIC SAFETY

76 W. Hancock Telephone: 577-2222

Graduate Degrees and Certificates Offered through the Graduate School

The following certificates and degrees are offered through the Graduate School. Programs in Developmental Disabilities, Gerontology, Infant Mental Health, and Molecular and Cellular Toxicology are described in this General Information section. Other programs are detailed in sections devoted to the cooperating school, college, or division.

Graduate Certificate in Alcohol and Drug Abuse Studies

Graduate Certificate in Archival Administration

Graduate Certificate in Developmental Disabilities

Graduate Certificate in Gerontology

Graduate Certificate in Infant Mental Health

Master of Science in Library and Information Science

Specialist Certificate in Library and Information Science

Master of Science (Interdisciplinary) in Molecular and Cellular Toxicology

Doctor of Philosophy (Interdisciplinary) in Molecular and Cellular Toxicology

Master of Science in Molecular Biology and Genetics

Doctor of Philosophy in Molecular Biology and Genetics

Interdisciplinary Doctor of Philosophy

Graduate Council

The Graduate Council, the policy formulating body for the Graduate School, is composed of two members elected from the regular graduate faculty of each of the various schools and colleges of the University, two graduate student members, the Dean of the Graduate School, and three members of the graduate faculty appointed by the Dean of the Graduate School. The Council meets monthly during the academic year, and all meetings are open to the University community.

In 1968, the Board of Governors established the Graduate Council and granted it the 'authority and responsibility for the development of basic policies for the graduate education system and for the encouragement, improvement and evaluation of graduate programs throughout the University.' In addition to reviewing new and existing graduate programs, the Council sets admission standards for graduate programs, makes recommendations for graduate faculty appointments, establishes criteria and evaluates applications for the Graduate-Professional Scholarship and the Thomas C. Rumble University Fellowship programs, and awards all Ph.D. degrees, select master's degrees, and interdisciplinary graduate certificates.

Graduate Faculty

The Graduate Faculty consists of faculty members who are eminently qualified by virtue of preparation and competence to teach and direct research at the graduate level. Appointment to the Graduate Faculty does not modify a faculty member's responsibility to or affiliation with his or her department, division, college, or other instructional or administrative unit. The Dean of the Graduate School, on behalf of the Graduate Council, may appoint members of the W.S.U. faculty to the Graduate Faculty, upon recommendation of their departments or divisions and with the approval of their deans. These appointments may be made in one of the following three classifications: Regular Graduate Faculty, Associate Graduate Faculty, Adjunct Graduate Faculty.

Appointments to the Regular Graduate Faculty are for a period of five years. Associate and Adjunct Graduate Faculty appointments are for up to three years. Upon completion of the term, a qualified candidate may be recommended for reappointment to the Graduate Faculty by the department chairperson and the college dean.

ACADEMIC PROGRAMS and DEGREES — Symbols and Abbreviations

The table on the following pages lists the major academic programs and degrees offered by Wayne State University. Academic programs are defined as any combination of courses leading to a specialization, the designation of a major, or to a separate degree designation. An asterisk (*) appended to a subject area indicates that a departmental honors major is also available in that field at the undergraduate level. Detailed descriptions of the programs may be found in the appropriate sections of the Undergraduate or Graduate Bulletin. The following index identifies standard abbreviations for University degrees and certificates, and the columns (Roman numerals) in the table indicating degree categories.

BA.....	Bachelor of Arts
BAS.....	Bachelor of Applied Studies
BSAHS.....	Bachelor of Science in Allied Health Sciences
BSET.....	Bachelor of Science in Engineering Technology
BFA.....	Bachelor of Fine Arts
BIS.....	Bachelor of Interdisciplinary Studies
BM.....	Bachelor of Music
BPA.....	Bachelor of Public Affairs
BS.....	Bachelor of Science
BSMS.....	Bachelor of Science in Mortuary Science
BSN.....	Bachelor of Science in Nursing
BSW.....	Bachelor of Social Work
BTIS.....	Bachelor of Technical & Interdisciplinary Studies
EdD.....	Doctor of Education
ESC.....	Education Specialist Certificate
GC.....	Graduate Certificate
JD.....	Juris Doctor
LLM.....	Master of Laws
MA.....	Master of Arts
MAIR.....	Master of Arts in Industrial Relations
MAT.....	Master of Arts in Teaching
MBA.....	Master of Business Administration
MD.....	Doctor of Medicine
MEd.....	Master of Education
MFA.....	Master of Fine Arts
MIS.....	Master of Interdisciplinary Studies
MM.....	Master of Music
MPA.....	Master of Public Administration
MPT.....	Master of Physical Therapy
MS.....	Master of Science
MSET.....	Master of Science in Engineering Technology
MSLS.....	Master of Science in Library and Information Science
MSN.....	Master of Science in Nursing
MST.....	Master of Science in Taxation
MSW.....	Master of Social Work
MUP.....	Master of Urban Planning
PBC.....	Post-Baccalaureate Certificate
PharmD.....	Doctor of Pharmacy
PhD.....	Doctor of Philosophy
PMC.....	Post-Master Certificate
SCP.....	Specialist Certificate Program
SPL.....	Specialist in Library and Information Science
TC.....	Teaching Certificate
I.....	Baccalaureate or First Professional Degree
II.....	Post-Bachelor or Graduate Certificate
III.....	Teaching Certificate
IV.....	Master's Degree
V.....	Specialist Certificate
VI.....	Doctoral Degree

Academic Programs and Degrees

For interpretation of symbols and abbreviations used in this table, see preceding page.

<i>School/College and Major</i>	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>V</i>	<i>VI</i>
School of Business Administration						
Accounting	BA, BS					
Business Administration				MBA		
Finance and Business Economics	BA, BS					
Management and Organization Sciences	BA, BS					
Management Information Systems	BA, BS					
Marketing	BA, BS					
Taxation					MST	
Joint JD/MBA	JD					MBA
College of Education						
Adult and Continuing Education					MEd	
Art Education	BA, BS		TC		MEd	
Bilingual/Bicultural Education			TC		MEd	
Career and Technical Education	BA, BS		TC		MEd	EdD,PhD
College and University Teaching		GC				
Counseling					MA, MEd	ESC EdD,PhD
Curriculum and Instruction						ESC EdD,PhD
Early Childhood Education					MEd	
Elementary Education	BA, BS		TC		MAT, MEd	
English Education (Secondary)	BA, BS		TC		MEd	
Evaluation and Research, Education					MEd	EdD,PhD
Foreign Language Education	BA, BS		TC		MEd	
General Administration and Supervision						ESC Ed D,PhD
General Education						ESC
Health Education			TC		MEd	
Higher Education						EdD,PhD
History and Philosophy of Education					MEd	
Instructional Technology					MEd	ESC EdD,PhD
Leadership, Educational					MEd	
Mathematics Education	BA, BS		TC		MEd	
Physical Education	BA, BS		TC		MEd	
Physical Education (K-12)			TC			
Psychology, Educational					MEd	EdD,PhD
Psychology, School and Community					MA	ESC
Reading					MEd	ESC EdD
Recreation and Park Services	BS				MA	
Rehabilitation Counseling and Community Inclusion					MA	
Science Education	BA, BS		TC		MEd	
Secondary Education					MAT	
Social Studies Education (Secondary)	BA, BS		TC		MEd	
Sociology, Educational					MEd	EdD,PhD
Special Education	BA, BS		TC		MEd	ESC EdD,PhD
Speech Education (Secondary)	BA, BS		TC			
Sports Administration					MA	
College of Engineering						
Biomedical Engineering					MS	PhD
Chemical Engineering	BS				MS	PhD
Civil Engineering	BS				MS	PhD
Computer Engineering					MS	PhD
Computer Technology	BSET					
Electrical Engineering	BS				MS	PhD

[continued on next page]

College of Engineering (continued)

Electrical/Electronic Engineering Technology	BSET					
Electromechanical Engineering Technology.....	BSET					
Electronics and Computer Control Systems					MS	
Engineering Management.....					MS	
Engineering Technology.....					MSET	
Environmental Auditing			GC			
Hazardous Materials Mgt. on Public Lands.....			GC			
Hazardous Waste Control			GC			
Hazardous Waste Management.....					MS	
Industrial Engineering	BS				MS	PhD
Manufacturing Engineering	BS				MS	
Manufacturing/Industrial Engineering Technology.....	BSET					
Materials Science and Engineering	BS				MS	PhD
Mechanical Engineering.....	BS				MS	PhD
Mechanical/Industrial Engineering Technology.....	BSET					
Operations Research					MS	
Polymer Engineering			GC			
Product Design Technology.....	BSET					

College of Fine, Performing and Communication Arts

Art	BA, BFA				MA, MFA	
Art History	BA				MA	
Communication*	BA				MA	PhD
Dance	BA, BS		TC			
Design and Merchandising.....	BA, BS				MA	
Film Studies	BA					
Journalism*	BA					
Music	BA, BM		TC		MA, MM	
Orchestral Studies.....			GC			
Public Relations	BA					
Radio-Television-Film*.....	BA					
Theatre.....	BFA				MA, MFA	PhD

Graduate School

Alcohol and Drug Abuse Studies	GC					
Archival Administration.....	GC					
Developmental Disabilities	GC					
Gerontology.....	GC					
Infant Mental Health	GC					
Interdisciplinary						PhD
Library and Information Science					MSLS	SPL
Molecular and Cellular Toxicology.....					MS	PhD
Molecular Biology and Genetics.....					MS	PhD

Law School

Corporate Finance Law.....					LLM	
Joint JD/MA in History.....	JD				MA	
Joint JD/MA in Political Science	JD				MA	
Joint JD/MBA	JD				MBA	
Labor Law					LLM	
Law.....	JD				LLM	
Taxation.....					LLM	

College of Liberal Arts

Africana Studies	BA					
American Studies	BA					
Anthropology*	BA			MA		PhD
Anthropology and Sociology	BA					
Art History	BA			MA		
Classics*	BA			MA		
Comparative Literature				MA		
Criminal Justice*	BS			MS, MPA		
Economics*	BA			MA		PhD
English*	BA			MA		PhD
English, Teaching College				MA		
Film Studies	BA					
French*	BA			MA		
Geography*	BA					
German*	BA			MA		
History*	BA			MA		PhD
History/Law (joint JD/MA)	JD			MA		
Honors, College (Co-Major)	BA					
International Studies (Co-Major Program)	BA					
Italian*	BA			MA		
Languages, Modern						PhD
Linguistics	BA			MA		
Near Eastern and Asian Studies	BA					
Near Eastern Languages	BA			MA		
Philosophy*	BA			MA		PhD
Political Science	BA			MA		PhD
Political Science/Law (joint JD/MA)	JD			MA		
Public Administration				MPA		
Public Affairs	BPA					
Russian	BA					
Slavic	BA					
Sociology	BA, BAS			MA		PhD
Sociology and Anthropology	BA					
Spanish*	BA			MA		
Women's Studies (Co-Major Program)	BA					

College of Lifelong Learning

Interdisciplinary Studies	BIS, BTIS			MIS		
Service Agency Administration		PBC				

School of Medicine

Anatomy and Cell Biology				MS		PhD,MD/PhD
Basic Medical Sciences				MS		
Biochemistry and Molecular Biology				MS		PhD,MD/PhD
Cancer Biology				MS		PhD
Cellular and Clinical Neurobiology						PhD
Community Health Services				MS		
Community Health Services Research and Evaluation		GC				
Genetic Counseling				MS		
Immunology and Microbiology				MS		PhD,MD/PhD
Medical Physics						PhD
Medical Research				MS		
Medicine	MD					
Pathology						PhD
Pharmacology				MS		PhD,MD/PhD
Physiology				MS		PhD,MD/PhD
Psychiatry and Behavioral Neurosciences				MS		
Radiological Physics				MS		
Rehabilitation Sciences				MS		

College of Nursing

Adult Acute Care Nursing.....						MSN
Adult Primary Care Nursing						MSN
Adult Psychiatric Mental Health Practitioner						MSN
Child and Adolescent Psychiatric Nursing						MSN
Community Health Nursing						MSN
Neonatal Nurse Practitioner Nursing.....			GC			
Nursing.....	BSN					PhD
Nursing Administration						MSN
Nursing Education.....			GC			
Nursing, Parenting and Families						MSN
Transcultural Nursing.....						MSN

College of Pharmacy and Allied Health Professions

Allied Health Sciences	BSAHS					
Anesthesia						MS
Clinical Laboratory Science.....	BS					MS
Forensic Investigation			PBC			
Health Systems Pharmacy Management.....						MS
Mortuary Science	BSMS					
Occupational and Environmental Health Sciences						MS
Occupational Therapy	BS		PBC			MS
Pathologist Assistant.....	BS					
Pharmaceutical Sciences.....						MS
Pharmacy.....	BS, PharmD					PhD
Physical Therapy						MPT
Physician Assistant Studies						MS
Radiation Therapy Technology	BS					

College of Science

Audiology.....						MS
Biological Sciences*.....	BA, BS					MS
Chemistry*	BA, BS					MA, MS
Computer Science*	BA, BS		PBC			MA, MS
Dietetics	BS					
Geology.....	BA, BS					MS
Honors, College (Co-Major)	BA					
Human Development (Psychology).....	BA					MA
Information Systems	BA					
Linguistics	BA					MA
Mathematical Statistics						MA
Mathematics*	BA, BS					MA, MS
Mathematics, Applied.....						MA
Molecular Biotechnology						MS
Nutrition and Food Science*	BA, BS					MA, MS
Physics.....	BA, BS					MA, MS
Psychology*	BA, BS					MA
Speech-Language Pathology.....	BA					MA

School of Social Work

Social Work	BSW					MSW
Social Work Practice with Families and Couples			GC			

College of Urban, Labor, and Metropolitan Affairs

Chicano-Boricua Studies (Co-Major Program).....	BA					
Dispute Resolution			GC			MA
Economic Development			GC			
Geography.....						MA
Industrial Relations.....						MAIR
Labor Studies	BA					
Peace and Conflict Studies (Co-Major Program)	BA					
Urban Planning						MUP
Urban Studies (Co-Major Program)	BA					

GRADUATE SCHOOL ADMISSION

Regular Admission

To be considered for graduate admission, an applicant must hold or be completing an earned baccalaureate degree or its equivalent from a college or university of recognized standing and have adequate preparation with discernible ability to pursue graduate studies in the major field elected. These criteria are subject to standards set by the individual colleges and schools, which reserve the right to revise or amend their entrance requirements beyond the minimal requirements of the University.

A completed *Application for Graduate Admission* form, the graduate application fee and an official transcript from each college or university attended are required before any student can be considered for admission to graduate study. A transcript is considered official only if it is sent directly from the institution where the work was completed and bears an official seal. The applicant is also responsible for arranging to take any examinations that may be specified by the Office for Graduate Admissions, the college or school, or the individual department.

Several academic areas of the University require an additional departmental application. Students are advised to contact the department to which they are applying and request full particulars on admission procedures.

In most departments (see departmental sections for variants), a regular admission may be authorized for the master's degree applicant upon the department's recommendation, if the applicant's honor point average is 2.6 ('C'=2) or above for the upper division (approximately the last 60 semester credits) of his/her undergraduate course work and if he/she holds a degree from a regionally accredited institution.

All baccalaureate graduates of *unaccredited* institutions must present a 3.00 ('B') or better upper-division honor point average to be considered for graduate admission. Coursework completed after the baccalaureate which is presented as the qualifying basis for graduate admission cannot be applied toward a graduate degree at Wayne State University.

Doctoral applicants must present higher entrance qualifications than those required of master's degree applicants. A doctoral applicant is required to have an undergraduate honor point average of 3.0 ('B'=3) or above for the upper division of the undergraduate course work and must have completed an undergraduate major or have done substantial specialized work in his/her proposed doctoral major field. Certain departments require the completion of a master's degree with superior scholarship before considering acceptance of a student as a doctoral applicant. Applicants with less than a 3.0 honor point average in undergraduate course work may be eligible for admission to doctoral studies if they have subsequently achieved an honor point average of 3.0 or better in substantial graduate course work in the proposed doctoral field.

The individual colleges reserve the right to refuse a non-resident admission if such admission prevents registration of a qualified Michigan resident. This ruling may not be invoked to secure admission to a Michigan resident if his/her honor point average entitles him/her to qualified status only.

Qualified Admission

In most departments, qualified admission to a master's or certificate program may be authorized if an applicant's honor point average is between 2.25 and 2.6 or if his/her degree is from a non-accredited institution, provided the major department and the Graduate Officer of the appropriate school or college have reviewed the applicant's academic experience, extra-scholastic qualifications and reasons for pursuing graduate study and have recommended, *in writing*, his/her admission to the Graduate School.

Upon recommendation of the department and the Graduate Officer of the appropriate college or school, qualified status may be granted to an applicant whose honor point average is below 2.25, if, since the time his/her baccalaureate degree was conferred, he/she has shown substantial evidence of academic or extra-scholastic qualifications of such merit as to warrant special consideration.

Applications from students who have completed substantial coursework at, and/or graduated from, institutions which were not accredited by one of the six regional U. S. accrediting institutions (MSA/CHE, NEASC, NCA, NASC, SACS, or WASC-Sr.) at the time studies were undertaken, will have special review. If requested, the applicant will be required to furnish documentation of the nature and level of the credit obtained, the bases on which the credit was awarded, institutional operating practices, library holdings, physical facilities, faculty qualifications, and any other matters that may be relevant to a determination of credit. The director of graduate admissions is authorized to deny admissions to any applicant whose previous education does not conform to Graduate School standards. The Office of University Admissions may also make recommendations concerning the appropriateness for transfer of previously completed graduate work.

All graduate admission procedures and regulations are subject to revision by the University Graduate Council at any time.

Application Dates

The Office of University Admissions will make every effort to process applications in time for the semester of the student's choice. However, only complete applications received by the last recommended dates shown below are ensured a decision before the semester starts. Unless an application and all supporting materials are received by the date indicated, there may not be adequate time to complete consideration for the desired term.

Term	Classes Begin	Date
Fall	Early September	July 1
Winter	Early January	November 1
Spring	Early May	March 1

For international students, the application form and all transcripts and documents must be on file in the Graduate Admissions Office at least four months before the start of the term in which the applicant plans to begin graduate studies.

Several colleges and departments have earlier deadlines. Students should consult the school/college and department sections of this bulletin, or the Office of University Admissions for complete information.

Graduate Non-Degree Admission

An applicant who wishes to take graduate courses but does not wish to be in a degree program may request admission on a non-degree basis. The eligible applicant will be admitted to a particular college but not to an individual major program. In most instances, a non-degree student may, with the department's approval, register for any courses for which he/she has the necessary preparation.

The applicant for a non-degree graduate classification is cautioned that *only one semester of full-time graduate study, or part-time registrations not to exceed nine credits, are normally permitted in this classification.* Beyond these limits, registration as a non-degree student requires the approval of the Graduate Officer of the student's college. Not more than nine credits, subject to the approval of the Graduate Officer, may be applied at a later date toward the resident and credit requirements for either the master's or Ph.D. degree. For the Ed.D. degree, credit earned beyond the nine credit limitation will be reviewed by the appropriate Division and the Education Graduate Officer for possible application toward the degree.

If the student decides to seek admission to a graduate degree program, he/she should apply to the appropriate College Graduate Office for a '*Change of Status*' before completing nine credits. There is no assurance that credits earned while holding a non-degree classification will be acceptable in a degree program, or that prerequi-

sites may not have to be specified if the student later becomes a degree applicant.

Depending on previous degrees, applicants may request admission to one of the following Graduate Non-Degree classifications:

1. PRE-MASTER'S: A student with an acceptable grade point average and an earned bachelor's degree from an accredited institution may apply for this rank.

2. POST MASTER'S: Students holding Wayne State master's degrees should apply for a change of status in the Graduate Office of the college they wish to enter. Those with master's degrees from other institutions must submit an *Application for Graduate Admission* and transcripts.

3. POST-DOCTORAL: This rank is reserved for persons holding earned doctoral degrees.

Graduate Guest Admission: Graduate students from other accredited colleges and universities may be admitted to elect a limited number of credits at Wayne State University. Interested students may obtain a *Graduate Guest Application* from the Office of University Admissions; this must be signed by their home institution before it can be accepted for consideration. **A guest admission is valid for only one semester and must be renewed with each subsequent registration.** A maximum of twelve semester credits may be earned as a Graduate Guest Student. Admission as a Graduate Guest student does not constitute permission to register as a degree applicant.

Senior Rule Admission: In their last undergraduate semester, Wayne State students with a 3.0 (or above) upper division honor point average have the option of taking a limited number of graduate credits. Graduate credit is awarded only for those courses taken in excess of baccalaureate degree requirements. Undergraduate and graduate courses combined may not exceed sixteen credits for the final semester of baccalaureate degree work. A Senior Rule student must register for at least one credit which is required for the undergraduate degree in order to be eligible for this status. Students who have not completed all required registrations for the baccalaureate may not obtain Senior Rule status. Completion of the *Application for Graduate Admission* form is required, and students are advised to consult their advisers and the Office of University Admissions. Application deadlines for Senior Rule admission are the same as for regular graduate admission. Students who qualify and are recommended by the department or college will be admitted for one semester. Graduate admission will be regularized upon evidence that the student has completed all requirements for the bachelor's degree; it is the student's responsibility to provide this transcript.

As a courtesy, the University permits a student to pay undergraduate fees for the graduate courses elected in a Senior Rule status. It is recommended that students elect only courses numbered 5000-6999 in their Senior Rule semester.

College of Pharmacy and Allied Health Professions: Undergraduate pharmacy students may register for one of their last two semesters of their fifth year under Senior Rule status.

College of Nursing: Applicants must submit a graduate College of Nursing Application to the College's Office of Student Services, 225 Cohn, Wayne State University, Detroit, Michigan 48202.

Permit to Register: Admission may be granted on a one-term-only basis to applicants with incomplete applications for graduate admission, upon presentation of evidence of an earned baccalaureate degree with an acceptable grade point average. Registration beyond the initial semester requires the submission of a regular graduate admission application, the processing fee, and official transcripts. Admission as a graduate Permit-to-Register student does not obligate Wayne State University to accept the applicant in the future for a graduate degree, nor is there any assurance that credit earned in this status will be accepted toward a graduate degree.

This option is not available in all University schools and colleges. Applicants are encouraged to discuss admission options with the staff of the Office of University Admissions.

Michigan Intercollegiate Graduate Studies (MIGS) Program

The Michigan Intercollegiate Graduate Studies (MIGS) Program enables graduate students of Michigan public institutions to take advantage of educational opportunities at other Michigan public institutions offering graduate degrees. Any graduate student in good standing in a master's, specialist, or doctoral program at a member institution is eligible to participate with approval of the appropriate academic unit. Students on a MIGS enrollment pay tuition and other fees at the host institution. All credits earned under a MIGS enrollment are accepted by a student's home institution as if offered by that institution. *This type of enrollment is limited to one term for master's or specialist degree students, or two terms for doctoral degree students.* Students interested in this program should contact the Office of University Admissions for further information.

Wayne State University — University of Windsor Exchange Agreement

Wayne State University and the University of Windsor have entered into an exchange agreement whereby students from each institution may enroll in selected courses at the other institution. Courses available are limited to those not offered at the student's home institution. Limitations also apply to the number of courses and credits a student may take under this agreement. Wayne State University and the University of Windsor students who wish to participate in the program must be in good standing at their home institution and must have prior approval of the appropriate academic unit that the course(s) will be accepted as part of the student's course of study. Students who participate in the Wayne State University/University of Windsor program pay tuition and fees at the home institution and receive credit for the course(s) only at the home institution. Students should consult the Director of International Programs, Office of the Vice President for Academic Affairs, for further information.

Post-Bachelor Admission

The Post-Bachelor status is granted to college/university graduates who wish to take Wayne State University courses through the 6000 level for *undergraduate credit only*. The status serves two groups of students:

(a) Those who wish to pursue vocational or avocational interests without intending to use Wayne State University credit to earn another degree at Wayne State University;

(b) Those who seek admission to the Graduate School but need to raise their undergraduate honor point average and/or fulfill specific undergraduate course requirements for Graduate School consideration.

The following special rules apply to Post-Bachelor Admission:

(a) **Under no circumstances will credit earned in this status apply toward a graduate degree program.**

(b) The applicant must present evidence of a degree earned from an accredited institution (official transcript or diploma).

(c) Post-Bachelor status students are not eligible for financial aid from Wayne State University, except if a student is taking prerequisite course work for a graduate program; in the latter case, he/she is eligible for a Stafford Loan for one twelve-month period for a maximum amount not to exceed the equivalent tuition for a first-year undergraduate student.

(d) Applications for Post-Bachelor status from students new to Wayne State University should be made to the Office of University Admissions, Helen Newberry Joy Student Services Center, Wayne State University.

(e) An applicant who earned an undergraduate degree from Wayne State University, or who was previously admitted and registered in a Wayne State graduate program, should contact the Records Office to be re-admitted to the University as a Post-Bachelor student. Post-Bachelor applicants in the Colleges of Education and Nursing must obtain authorization directly from the College.

International Students

Students from other countries must contact the Office of University Admissions or their prospective department for appropriate application materials and deadline dates.

To be considered for graduate admission, applicants must have completed an appropriate university-level program comparable in subject matter and credits to a program for which a bachelor's degree is awarded at Wayne State University.

The fact that a degree in another country may have a similar name to a degree offered in the United States does not mean the two degrees require similar lengths and content of study or that they should be accepted as equivalents. *All graduate applicants must* (1) present an excellent scholastic record; (2) have sufficient financial resources for minimum tuition, supplies and living expenses; and (3) have a sufficient proficiency in English (see the following section on Graduate Admission English Proficiency Requirement).

FINANCIAL AID: University sponsored financial assistance for international students is severely limited and unconfirmed awards should not be included in financial projections.

English Proficiency Requirement

Graduate applicants who graduated from colleges/universities in other countries must demonstrate proficiency in English. To fulfill this requirement an applicant must satisfy one of the following criteria:

- 1) Complete baccalaureate degree requirements at an accredited U.S. institution or in a country where English is the native language.
- 2) Present an acceptable score on the Michigan English Language Assessment Battery (MELAB).
- 3) Present an acceptable score on the Test of English as a Foreign Language (TOEFL).

Some units may elect to grant qualified graduate admission to academically-talented International Students whose TOEFL scores fall slightly below the University minimum score. Interested students should contact the chairperson or director of their prospective program, to determine whether the program offers such qualified admission. For further information on the English Proficiency policy, please consult the Office of University Admissions.

Faculty Admission

Tenured Wayne State University faculty members holding the rank of Assistant Professor or above may be admitted to Wayne State graduate degree programs outside the faculty member's school/college, under certain specified conditions. Untenured tenure-track faculty are not eligible to pursue a graduate or professional degree at Wayne State while in University employment. Faculty who are not tenured and not on the tenure track may enroll in degree programs outside their own unit with the approval of the dean of their college. For further information, contact the Dean of the Graduate School.

Special Status

Visiting Doctoral Guest: The Graduate School may issue a Visiting Doctoral Guest certificate to persons with an earned doctorate who come to Wayne State for scholarly study under the sponsorship of a department. Such Guests may obtain University library privileges and attend classes upon invitation of the department. No official record of attendance is kept on such Guests. For further information, contact the Graduate School.

Visiting Scholar: The Graduate School may issue a Visiting Scholar certificate to persons who have an advanced degree, such as an M.D., or are earning a doctoral degree, and who have come to Wayne State for scholarly study under the sponsorship of a department. Such scholars may obtain University library privileges and attend classes upon invitation of the department. No official record of attendance is kept on such Scholars. For further information, contact the Graduate School.

TUITION and FEES

Listed below are the Tuition and Fees per semester in effect at the time of publication of this Bulletin. Significant exceptions in fee policy or in fees are made by the Law School (see page 190) and by the School of Medicine (see page 280). **Tuition and Fees are subject to change without notice by action of the Board of Governors.** In accordance with action of the Board of Governors, a portion of these fees is used for operation of the Student Center.

Graduate Tuition and Fees

Resident \$69.00 plus \$159.00 per credit
Non-Resident \$69.00 plus \$341.00 per credit.

Student Fees

Application Fees: Applications for admission to any undergraduate, graduate or professional program must be accompanied by a \$20.00 non-refundable application fee. The non-refundable application fee for international students is \$30.00. There is no application fee for members of the Alumni Association, their spouses and/or dependents, or for applicants sixty years of age or older, except for applicants to the Law School and School of Medicine.

Application Fee, School of Medicine: Persons who have submitted a first application to the School of Medicine through the American Medical College Application Service (AMCAS), and who are asked to submit additional material (secondary application), are required to pay a non-refundable fee of \$30.00 for the processing of the secondary application.

Registration Fee: There is a \$69.00 non-refundable Registration Fee; except that students enrolled in the Visitor Program shall pay a \$35.00 non-refundable registration fee.

Late Registration Fee: Any student registering after the prescribed registration date (as indicated in the Schedule of Classes for the applicable semester) must pay either a \$35.00 or \$70.00 non-refundable Late Registration Fee.

Late Payment Fees: A student who does not satisfy his/her tuition and fee assessment by the prescribed dates on the invoices (and as indicated in the *Schedule of Classes* for the applicable semester) shall be assessed a \$25.00 Late Payment Fee if the past due balance is less than \$500.00, or a \$40.00 Late Payment Fee if the past due balance is \$500.00 or more.

Partial Payment Fee: Students are expected to pay their full tuition and fee invoices by specified dates, depending upon when they register. Students may elect to pay only one-half of their assessments by the required dates, and these students will be assessed a \$20.00 Partial Payment Fee.

Course Material and Breakage Fees: Breakage fees and/or course material fees may be assessed, the latter in instances where a relatively large portion of instructional costs is due to the necessary use of consumable resources. These fees occur principally in courses with associated laboratory work or similar uses of consumable resources. The imposition of such fees requires the approval of the President or his/her designee. Only in unusual circumstances, and only with the direct approval of the President, may fees exceed \$30.00 in any course.

Sponsored Tuition Programs: If a student's employer participates in direct tuition billing as part of an employee benefits program, the student may be eligible to present a Minimum Tuition Deposit Deferral Form in lieu of payment at registration. Contact the Student Accounts Receivable Office for further information: 577-6837.

First Professional/Medicine Program Student Support Fee: Students in the First Professional Medicine Program pay a student support fee. For Years I and II the fees are \$350.00 and \$275.00 respectively, and for Years III and IV the fees are \$100.00 and \$25.00 respectively. This fee is used to fund microscope rentals, photocopy expenses, teaching materials, National Board examination fees and other course-related expenses.

Intern-Resident Program Fee: The fee for students registering in the Intern-Resident (GME) Program in the School of Medicine is \$1.00 for the twelve-month year beginning July 1. This fee is non-refundable.

Examination Fee for Credit by Examination: The fee for an examination taken to establish credit by examination is \$10.00 per credit hour. Such examinations will be approved under provisions established by the schools and colleges. Credit allowed on the basis of transcript entries from another institution is not applicable to this provision.

Music Fees: Students registering for music courses taken as private lessons pay a fee of \$79.00 for one credit hour. For three credit hours, the additional fee is \$157.00. In the event of withdrawal, the student will receive a refund of the difference between the fee assessed and the cost to the University of any lessons provided, but in all cases a minimum of \$5.00 will be retained by the University.

Graduation Fee: There is a \$15.00 fee for students who apply for a degree.

Certificate Fee: There is a \$15.00 fee for students who apply for a certificate.

Transcript Fee: There is a \$3.00 fee for an official transcript issued directly to the student, a \$2.00 fee for one that is mailed, and a \$1.00 fee for an unofficial transcript.

Locker Fees: Students registering for certain activity courses in physical education who wish to use locker facilities are charged.

Bowling Fee: Students electing a course in bowling must pay a fee for bowling lane rental. This fee is paid at the first meeting of class and is not refundable.

Payment of Tuition and Fees

Checks or money orders must be made payable to Wayne State University. MasterCard and Visa credit cards are accepted for tuition payments only, by in-person payment or by telephone registration. For details, inquire at the Cashier's Office. The following Tuition and Fee Payment Policy is in effect:

Students who do not officially drop their courses within the tuition cancellation period for the term are financially obligated to pay for the courses even if they have not attended any class sessions.

Please see the Schedule of Classes for tuition and fee deadline dates applicable to a particular term.

Registration is not permitted beyond the second week of classes unless extenuating circumstances beyond the control of the student warrant an exception to University Policy as determined by the University Registrar. In such cases, full tuition, Registration Fee and Late Registration Fee must be paid in advance of registration.

Short Term Courses: Payment of full tuition and the \$69.00 non-refundable Registration Fee is required on the date of registration or no later than the first class meeting date. \$35.00 Late Payment Fees are assessed any student who has not paid his/her tuition and fee assessment by the due date.

Holds on Records: Initial eligibility to register for classes each semester is based on a student's admission status with the University. All students must be authorized by the University in order to enroll in classes. 'Holds' may be placed on student records, and registration denied to a student, for academic reasons (e.g., probation or dismissal), a disciplinary problem, money owed to the University, failure to return library books and/or other supplies and equipment, and/or non-compliance with program, departmental, school/college, or University regulations.

A 'Hold' will be placed on the records of any student who has past indebtedness to the University. While the hold is in effect, registration for a subsequent term will not be permitted, transcripts of academic work taken at the University will not be furnished, nor will a diploma be issued. Student grades may be recorded but are not considered as being earned nor is a degree earned until the student has satisfied all unpaid tuition as well as money borrowed from student loan programs.

Residency

The following regulations and review procedures are established by Wayne State University for University tuition and fee purposes. The University recognizes that a variety of definitions exist for the term 'resident' and applicants are encouraged to give careful attention to these regulations which define residency for University purposes.

—Regulations

1. No student is eligible for residence classification unless (s)he or, if (s)he is a minor, the person from whom (s)he derives residence (pursuant to paragraph six below), meets the qualifications prescribed herein for residence and has lived in this state continuously for at least six months immediately prior to the first day of classes of the term for which resident classification is being sought, save for temporary absences as defined in paragraph two below.

2. For the purposes of these regulations, the terms 'residence' and 'domicile' are synonymous. In general, domicile is the place where a person actually resides with the intention of making it the person's true, fixed, permanent home and principal establishment and to which, whenever (s)he is temporarily absent, (s)he has the intention of returning. Full-time attendance at school outside Michigan and initial enlistment in a military service are examples of temporary absences. Other absences for more than six months will be presumed to be nontemporary. The fact of physical presence at the dwelling-place and the intention to make it a home must concur and the intention must be to make a home in fact in a certain place, and not an intention to acquire a domicile in order to obtain the benefit of the legal consequences of having a domicile there. A person may have but one domicile at a time, and a domicile, once established, continues until it is superseded by a new domicile.

3. Normally, the sojourn in this state of a student from another state for the primary purpose of attending school is not residence and it is presumed that a non-resident at the time of his or her enrollment continues in that classification throughout his or her presence as a student, except where it can be established that his or her previous domicile has been abandoned and a new one established. If a student enrolls in undergraduate school for more than eight credits, or in graduate school for more than six credits, or in Law School for more than ten credits in any one full length term, within six months after arrival in Michigan, it is normally presumed that the student's sojourn is for the purpose of attending school and not to establish domicile.

4. The following facts, although not conclusive, have probative value in support of a claim for residence classification: acceptance of an offer of permanent employment in this state; former residence in the state and the maintenance of significant connections therein while absent; economic or social compulsion causing a person to abandon a former residence and acquire residence in the state with attendance at the University only an incident to such residence.

5. The following facts, standing alone, are not accepted as sufficient evidence of domicile: employment by the University as a fellow, scholar, assistant, or in any position normally filled by students; a statement of intention to acquire a domicile in this state; voting or registration for voting; the lease of living quarters; payment of local and state taxes; automobile registration; driver's license; or continued presence in Michigan during vacation periods.

6. For purposes of these regulations, the age of majority is 18 years. A minor does not have the capacity to establish his or her own domicile. Normally, the domicile of a minor follows:

- (a) That of the parents or surviving parent;
- (b) That of the parent to whom custody of the minor has been awarded by a divorce or other judicial decree; or
- (c) That of the parent with whom the minor in fact makes his or her home, if there has been a separation without a judicial award of custody; or
- (d) That of an adoptive parent, where there has been a legal adoption, even though the natural parents or parent may be living; or

(e) That of a 'natural' guardian, such as grandparent with whom the minor in fact makes his or her home, where the minor has permanently left his or her parental home and reasonable expectation of substantial financial support from the parents has been dissolved.

(f) If a Michigan resident parent or guardian of a minor moves his or her residence to another state, the minor shall remain eligible for resident tuition status as long as (s)he continues to attend school regularly in this state.

7. Where a general guardian has been appointed by the state of the ward's domicile, at the time of appointment the ward's domicile presumption remains in that state. The appointment by a Michigan court of a resident guardian of a minor not domiciled in this state at the time of appointment has no effect upon the domicile of the ward.

8. A minor who has permanently left his or her parental home, and who has no reasonable expectation of substantial financial support from his or her parents or legal guardian, etc., may qualify for residency status as if (s)he were of majority age.

9. An alien student may apply for resident status under one or more of the following regulations in the same manner as a citizen, if he/she is in the United States for other than a temporary purpose. In order to demonstrate that he/she is here for other than a temporary purpose, the alien student must be either a permanent resident alien with an I-151 or I-551 Alien Receipt Card or an applicant for adjustment to permanent resident alien status whose application has been approved by the Immigration and Naturalization Service; OR an alien with a G-4 visa; OR an alien with an I-94 Arrival-Departure Record Card, endorsed either "refugee" or "applicant for adjustment"; OR an alien with documentation from the Immigration and Naturalization Service that he/she has been granted asylum in the United States; OR an alien with other documentation from the Immigration and Naturalization Service that reflects status equivalent to one of the above denominated categories.

—Review Procedures

1. Initial Classification and Appeal

(a) Registering under proper residence and advising the Office of Admissions of changes in circumstances which might affect residence classification is the responsibility of the student. Questions concerning a student's residency should be raised initially with the Office of Admissions.

(b) A student may challenge the initial classification by filing an Application for Residence Classification with the Registration and Scheduling Office, where such forms are available. Except for delays caused by University personnel, Applications for Residence Classification must be filed within the term for which resident classification is claimed.

(c) A student may appeal from the administrative classification by filing a written notice of appeal with the Registrar's Office *within sixty calendar days after the student is notified of the administrative classification*. The notice of appeal shall include reasons for the appeal, the period for which resident status is claimed, and a complete statement of the facts on which the appeal is based, together with supporting affidavits or other documentary evidence. Failure to file notice within sixty calendar days shall constitute a waiver of the right to appeal from the administrative classification.

(d) The Office of the General Counsel shall review the appeal and render a decision. A student may appeal an adverse decision by filing a written notice of appeal with the Office of the General Counsel within fifteen calendar days from the date of the decision. Failure to file a written notice of appeal with the Office of the General Counsel shall constitute a waiver of the right to appeal to the President or his designee. While the student has the right to consult the University Ombudsperson at any time, the student may particularly want to utilize the Ombudsperson's services at this point in the review procedure.

(e) After a student appeal, the President or his designee shall review the student's appeal on the record and render a final decision.

(f) If an erroneous classification has occurred, a refund for the appropriate period and amount will be made.

2. Reclassification and Appeal

(a) A student, having been initially classified as a non-resident and having decided that (s)he has since become a resident may initiate action in the same manner as for challenging an initial classification pursuant to 1(b) above.

(b) If the petitioner is dissatisfied with the finding of the Registrar's Office, (s)he may appeal to the Office of the General Counsel in the same manner as prescribed for appeals from administrative classification as in 1(c) above.

3. Erroneous Classification

If any student having been classified as a resident student shall be determined to have been erroneously so classified, (s)he shall be reclassified as a non-resident student, and if the cause of his or her incorrect classification shall be found to be due to any material concealment of facts or false statement made by him or her at or before the time of his or her original classification, (s)he shall be required to pay all tuition fees which would have been charged except for such erroneous classification and shall be subject also to appropriate discipline in accordance with University policies. If it is determined that there is no such concealment of facts by the student, fees shall be adjusted only for current and future terms.

4. Classification Date

These procedures became effective November 9, 1979.

Transcript Request Policy

Official transcripts bear the seal of the University and the signature of the Registrar and cost \$2.00 when sent via the U.S. Postal Service. An additional \$1.00 is charged for an official transcript issued directly to the student. Unofficial transcripts may be obtained for \$1.00; however, they do not contain the University Seal or the signature of the Registrar. Unofficial transcripts are normally used for advising purposes.

Transcript tickets, which indicate credited amount applicable to transcript fees, may be purchased at the Cashier's Office or at the ticket dispensing machines in the lobby of the Helen Newberry Joy Student Services Center, Student Center Building, Art Building, and the Science and Engineering Library. The ticket must be submitted to Student Records, 1 West, Helen Newberry Joy Student Services Center, with transcript request forms.

A transcript may be requested in person or by mail. The University will not honor telephone requests for transcripts. To request a transcript in person, the student must file a transcript request form and a transcript ticket for the appropriate fee at Student Services. Requests by mail should be addressed to: Student Records, Attn: Transcripts, 1 West, Helen Newberry Joy Student Services Center, Wayne State University, Detroit, MI 48202; and should include a check or money order for the appropriate amount payable to Wayne State University. To ensure prompt attention, the student should include his/her name (including name while in attendance, if different), student identification number, social security number, date of birth, last term of attendance, his/her authorizing signature, and the name and address to which the transcript is to be sent.

Transcripts are not issued to anyone outside the University without the written permission of the student. Requests for official transcripts will not be honored if the student or former student has an outstanding financial obligation to the University.

Tuition Cancellation/Refund

Tuition, *not including the \$69.00 Registration Fee*, may be cancelled in accordance with the following schedule when students officially withdraw from classes by submitting a properly-completed Drop/Add form or by sending a certified letter to Registration and Scheduling, 2 West, Joy Student Services Center. A certified letter of withdrawal sent through the U.S. Postal Service shall be considered effective on the date of the postal cancellation, provided the date is legible.

The tuition cancellation/refund schedule shown below applies to courses that start in accordance with the Official University Academic Calendar. The tuition cancellation/refund schedule for

courses with specially approved starting dates is dependent upon the starting date of the course. Questions about the tuition refund/cancellation schedule should be referred to the University Registrar.

Classes meeting fewer than four weeks: Students who officially withdraw from scheduled classes on or before the first day of classes are entitled to a 100% tuition cancellation and 0% thereafter.

Classes meeting four to eight weeks: Students who officially withdraw from scheduled classes before the second week of classes are entitled to a 100% tuition cancellation and 0% thereafter.

Classes meeting nine to fifteen weeks: Students who officially withdraw from scheduled classes before the third week of classes are entitled to a 100% tuition cancellation and 0% thereafter. (Refer to the University Schedule of Classes for the appropriate term, for specific dates.)

Classes meeting sixteen to twenty-seven weeks: Students who officially withdraw from scheduled classes before the fourth week of classes are entitled to a 100% tuition cancellation and 0% thereafter.

Classes meeting twenty-eight or more weeks: Students who officially withdraw from scheduled classes before the seventh week of classes are entitled to a 100% tuition cancellation and 0% thereafter.

Dropping and Adding Courses: Students who drop and add courses simultaneously after the 100% tuition cancellation period are assessed tuition for the credit hours added that are in excess of the credit hours dropped. If the credit hours dropped exceed the credit hours added, the student is not entitled to any tuition cancellation. This practice is referred to as an 'even exchange.'

Special Adjustments: The Registrar is authorized to make adjustments in the application of the policies stated in this section when unusual circumstances warrant. Circumstances which may warrant special consideration include non-attendance by the student or the death or serious illness of the student or of someone closely related. Students (or an authorized representative in the case of death or serious illness) must submit their applications and supporting documentation to Registration and Scheduling.



STUDENT RECORDS

University Grading System

A report of grades and marks is sent to each registered student after the close of each semester. Final grades are recorded under the following system:

Graduate Grades

The graduate grading system is intended to reflect higher standards of critical and creative scholarship than those applied at the undergraduate level. To receive a graduate grade in courses open to both undergraduate and graduate students, the graduate student is expected to do work of superior quality and is required to do any additional work specified by the instructor. Graduate students are required to earn a 'B' (3.0) average to satisfy degree requirements.

Grades of 'B-minus' and below are unsatisfactory for graduate level work and constitute valid cause for dropping a student from a graduate program. To be awarded a graduate degree, a student must have achieved at least a 'B' (3.0) honor point average. A limited number of grades of 'B-minus,' 'C-plus,' or 'C,' though unsatisfactory, may be applied toward a graduate degree provided they are offset by a sufficient number of higher grades to maintain an honor point average of 3.0. Specific limitations on the number of grades below 'B' which may count toward a graduate degree and limitations on grades below 'B' in specific courses may be established by individual departments and programs. Students should consult with their departments and advisers regarding these specific limitations. All graduate teaching assistants and graduate research assistants must maintain a minimum h.p.a. of 3.0 in order to continue their assistantship appointments. Every effort is made to assist students whose work suffers as a result of conditions beyond their control, or interruption of study for military service.

Law School and School of Medicine: This grading system does not apply to Law School students or students in the four-year M.D. program of the School of Medicine. Students enrolled in those programs should see the appropriate sections of this Bulletin and should consult with appropriate Program Directors for more information.

Final grades for graduate courses are recorded under the following system.

A	Excellent	4.0 honor points per credit hour
A	minus	3.67 honor points per credit hour
B	plus	3.33 honor points per credit hour
B	Good	3 honor points per credit hour
B	minus	2.67 honor points per credit hour
C	plus	2.33 honor points per credit hour
C	Below Graduate Standards	2 honor points per credit hour
F	Failure	0 honor points per credit hour
M	Marginal Pass in designated courses such as field work, practicums and internships (NOT considered in calculation of honor point average).	

NR *Not Reported.* No grade reported by instructor.

S and U *Satisfactory and Unsatisfactory* performance in non-degree courses and in certain designated courses such as field work, practicums and internships. The grade of 'S' is given for all dissertation credits upon final acceptance of the dissertation in partial fulfillment of the requirements for the Ph.D. and Ed.D. degrees. 'S' and 'U' grades are not considered in the calculation of the honor point average.

Graduate Marks

The mark of 'I'—*Incomplete*, is given to an undergraduate or a graduate student who has not completed all the course work as planned for the course and when there is, in the judgment of the

instructor, a *reasonable* probability that the student can complete the course successfully *without attending regular class sessions*. The responsibility for completing all course work rests entirely with the student. A final grade is recorded when the student completes the appropriate course work as arranged with the instructor or, in the absence of the instructor, the department chairperson. (The mark of 'I' shall not be changed to a grade of 'F' unless, after receiving the 'I', the student's subsequent work is of such quality that the overall average for the course is below passing.)

The course work must be completed by the student within one calendar year. The mark of 'I' which is not converted to a letter grade within one calendar year from the time it was received will be considered a withdrawal ('W'), unless, prior to the end of that year, the student requests, and the instructor agrees to certify to Student Records, that another calendar year has been granted for the removal of the Incomplete.

The mark of 'I' is inappropriate if, in the instructor's judgment, it will be necessary for the student regularly to attend subsequent sessions of the class. Should regular attendance become necessary, the student must register for the class for the semester in which attendance is planned. **In the event of a second registration for the course, the mark of 'I' for the original election is considered to be a 'W,'** and the student will be assessed tuition and applicable fees for the second registration.

The mark of 'W'—Official Withdrawal, is given when the student has dropped the course in accordance with University policy. See 'Drop/Add' below, page 24.

The Mark of 'X'—No grade reported, is a non-punitive mark used when there has been insufficient work submitted and there is no basis on which to assign a grade.

The mark of 'Y'—Deferred, is given when the student is up-to-date in the work of a course planned to continue beyond the semester (i.e., essay, thesis, dissertation and certain courses taken in sequence).

The mark of 'Z'—Auditor, is given when the student has formally registered for the course for audit. The student's Academic Dean or his/her designee must provide written audit authorization to the student at the time of registration.

Change of Grade and Mark

Once recorded in the Office of the Registrar, grades/marks will be changed only if an official Change of Grade form, properly completed and signed by the instructor, is submitted to the school or college Grades Coordinator, and is received by Student Records within three semesters (one calendar year) after the end of the term for which the relevant course was originally graded/marked.

Credits

A credit (credit hour) is defined as one class hour per week or its approved equivalent requiring a minimum of two hours of preparation per week carried through a semester. A credit in other modes of instruction should be made as consistent as possible with the above definition.

Laboratory: A three-hour laboratory period is normally regarded as the equivalent of one class hour.

Honor Point Average

The honor point average is the numerical index of the student's scholastic average. Points are assigned to each letter grade (see University Grading System, above) for each hour of credit. For example, a grade of 'A' in a class carrying 3 credits would be assigned 12 honor points (3 x 4), and a grade of 'C' in a class carrying 4 credits would be assigned 8 honor points (4 x 2).

To compute the honor point average, multiply the honor points assigned to each grade (listed above) by the number of credit hours for each course; then add the results and divide by the total number of credits. In the example cited, the honor point average would be:

20 (honor points) divided by 7 (credits attempted) = 2.85, nominally a 'B-minus' average.

The base excludes credit by special examination, transfer credit, courses with a mark of 'W' or 'X' and courses in which a grade of 'S,' 'U,' or 'M' have been received.

See page 23 (Retaking Courses) for the policy on honor points for retaken courses at the graduate level.

Law School: This honor point system does not apply to Law School students.

Responsible Attendance and Performance

Students must show diligence and are normally expected to complete the courses they elect. Irresponsible attendance is wasteful of both student and University resources. Those students who consistently receive excessive marks of 'I' (incomplete) and 'W' (Withdrawal) may be refused the privilege of further registration by the dean or the dean's designee of their school or college. Students experiencing attendance difficulties should seek counseling from appropriate college or University offices.

Release of Student Records

The University recognizes admission and academic records of students as being privileged and has a policy designed to ensure that this information is not improperly divulged without the consent of the student. The University is subject to the Family Education Rights and Privacy Act and has promulgated regulations pursuant thereto. Copies of the regulations and a list of student records maintained by the University are available for inspection in the Office of the Registrar. The University reserves the right to provide anonymous academic information to other schools and colleges when it is to be used for curriculum evaluation purposes.

Michigan's Freedom of Information Act

The Freedom of Information Act (PA 242) provides that a member of the public, in accordance with certain guidelines, has a right to inspect and receive copies of public records maintained by the University. A public record is broadly defined and includes written documents, pictures, recordings, punch cards, magnetic cards, etc., which are maintained by the University in the course of official responsibilities. However, certain records are exempt from disclosure.

The Media Relations Office, 3222 Faculty/Administration Building, is designated as the office responsible for accepting requests for public records, and the Director of that office is the University officer in charge of providing this service. Under the statute, a fee can be charged for records released and is based on the cost of labor involved in the search, examination and duplication of records, as well as the mailing costs.

ACADEMIC REGULATIONS

Continuance in graduate status is contingent upon the student keeping informed of all rules, regulations and requirements and complying with all official procedures of the Graduate School, the individual college or school and department. The student is responsible for fulfilling all course and degree requirements in proper sequence with satisfactory scholarship. In case of doubt regarding any matter affecting his/her standing as a graduate student, the student should consult with his/her adviser. The primary responsibility of keeping informed of policy and procedures rests with the student. Regulations contained herein should not be construed as exhaustive.

Normal Program Load

A full-time graduate student is one who is enrolled for eight or more credits during a semester. The definition of normal course load will vary depending upon the requirements of each program.

Auditing Courses

To audit a course, a student must register in person for the course and indicate that he/she wishes to audit the course rather than receive academic credit. Registration to audit a course is subject to the following regulations:

1. Students must pay the tuition assessment for the course, which is the same as if it were taken for academic credit;
2. A student is not permitted to take quizzes and examinations in audited courses;
3. A student may not normally change from audit status after registering for the course. In some cases, exceptions may be permitted during the term with the written recommendation of the instructor and the written approval of the Dean of the college/school in which the student is enrolled. The instructor's recommendation and Dean's approval must be included with the student's Drop/Add Form indicating the desired change.

The Graduate School does not encourage students to audit graduate-level courses.

Undergraduates Registering for Graduate Courses

Highly qualified undergraduate students may, under special circumstances, take a 7000-level course for undergraduate credit only. A written petition initiated by the student's adviser must be approved by the graduate office of the school or college, by the professor teaching the course, and by the Dean of the Graduate School. (See also: 'Under the Senior Rule,' below.)

Dual Enrollment

Graduates registering for Undergraduate Courses: Graduate students may take undergraduate courses to be recorded on an undergraduate transcript. This is often done to satisfy prerequisites not required in a major field. Fees are assessed at the graduate level for all courses.

Under the Senior Rule: An undergraduate student in his/her senior year who has a 3.0 or higher upper division h.p.a., and who desires to earn a limited number of graduate credits, may receive in his/her final semester a temporary Senior Rule admission for one semester only to a graduate program. Students who desire this status must file an *Application for Graduate Admission* and be admitted. A completed Senior Rule/Dual Enrollment Form must be submitted at the time of registration. For further information, see Senior Rule Admission, page 17.

Dual Enrollment with the University of Michigan: A student enrolled at either Wayne State University or the University of Michigan may elect a course or courses in the other institution if the course fits his/her program but is not available in his/her home institution. The student must have written approval of the department chairperson in his/her major area at the home college and the approval of his/her Dean. The election must also be approved by the department which offers the course. Students desiring to participate

in Wayne State University - University of Michigan dual registration should obtain the necessary forms from the Office of the Registrar and pay the appropriate tuition at their home institution.

Retaking Courses

If a student in undergraduate or post-bachelor status (see the section on 'Registration,' below) retakes a course originally taken in undergraduate or post-bachelor status, then the following rules shall apply:

1. The grade, honor points and credits for an earlier attempt will be eliminated from the student's honor point average computation.
2. The grade, honor points and credits of only the latest retake will be included in the student's honor point average computation.
3. The original grade in the course retaken under this rule will be indicated by an 'R.' Thus, the indicator 'R' will appear opposite all attempts in a course except the last.

After registering to retake a course, undergraduate students must file a Retake Form in Student Records, 1 West, Helen Newberry Joy Student Services Center. (Graduate students see below.)

After a degree has been granted, no grade computed in that degree may be changed.

If a post-bachelor status student retakes a course originally taken under regular undergraduate status, the retake will in no way modify the earlier attempt. The second election, however, will be averaged in the honor point base only if the previous grade was a 'D.' No credits or honor points will be given if the previous grade was 'A,' 'B,' or 'C.'

Graduate Students: A graduate department or equivalent academic administrative unit may, if it wishes, allow a student to petition to retake a graduate course in which a grade of 'B-minus' or lower is received. No more than two courses may be retaken during the student's study at Wayne State and this number may be further limited by individual departments. Permission to retake a course must be obtained from the Graduate Officer (for Master's students) or the Departmental Graduate Committee (for Ph.D. students) as well as the Dean of the Graduate School (for both Master's and Ph.D. students) before registration for the course takes place. The original grade for the course will remain on the student's transcript, but only the grade received in retaking of the course will be used in computation of the student's honor point average for the degree program. Students will not receive University financial aid for courses that are retaken.

School of Business Administration: No course in which a student has received a passing grade or mark may be retaken without the prior written approval of the Director of Student Services of the School of Business Administration.

College of Engineering: No course may be retaken without the prior written approval of the respective department's Graduate Program Chairperson and the Associate Dean of Engineering for Graduate Studies. Students may not retake any course in which a grade of 'A' or 'B' was received.

College of Pharmacy and Allied Health Professions—Faculty of Allied Health: No course may be retaken without the consent of the adviser(s) delegated for each professional curriculum.

REGISTRATION

REGISTRATION and SCHEDULING: 2 West, Helen Newberry Joy Student Services Center; 577-3541

Registration is the process of officially enrolling in classes for a particular term. The *Schedule of Classes*, published by the Office of the Registrar in advance of each term, lists the days, times and locations for registration and explains registration procedures. Students should review the information in the *Schedule of Classes* prior to registering.

A student may not attend any class in which he/she is not officially registered.

POST-BACHELOR STATUS: Students wishing graduate credit are cautioned NOT to register 'post-bachelor.' This status allows students holding bachelor's degrees from accredited institutions to elect only courses open to undergraduate students (numbered below 7000), which may be used to fulfill prerequisite requirements for graduate admission. Credit for courses elected as a post-bachelor student does *not* count toward graduate credit.

– Registering for Classes

TELEPHONE REGISTRATION ('Tartar Tone'): Registration for classes at Wayne State is conducted by Tartar Tone telephone registration, which allows students to use any touch-tone telephone to register, add, or drop courses. To register by telephone, a student needs: (1) his/her student ID number or Social Security Number; his/her personal ID number (PIN); the five-digit call number of each of the classes the student wishes to enroll in, add, or drop.

Telephone registration allows a student to: register, add, or drop classes; access information on holds; change his/her PIN; check which classes are available and which classes are completely enrolled; select the desired credit hours in variable-credit classes; access tuition and fees account balance; and make payment using a credit card.

Complete instructions for registration appear in each *Schedule of Classes*, which also contains worksheets to help those unfamiliar with Tartar Tone, and answers to frequently-asked questions. Additional information and assistance is available by calling Registration and Scheduling, (313) 577-3541.

Drop/Add — Adjusting Your Schedule

Registered students may drop and/or add classes on the date(s) indicated in the *Schedule of Classes*. Note the following requirements:

1. The regulations pertaining to dropping and adding courses are stated as they pertain to regular courses fifteen weeks or more in duration. These regulations are applied proportionately to courses that are offered for less than fifteen weeks.
2. Students who do not officially drop their courses within the first two weeks of classes are financially obligated to pay for the courses even if they have not attended any class sessions.
3. Students may drop (not add) courses by mail by sending a certified letter to Registration and Scheduling, 2 West, Helen Newberry Joy Student Services Center. The effective date of such drops, for tuition cancellation and grading purposes, is determined by the postal cancellation date.
4. Students who officially drop courses before the conclusion of the first two weeks of classes (for the Fall and Winter terms) are entitled to 100% tuition cancellation, and the courses do not appear on the students' academic records.
5. Students who officially drop courses after the second week of classes (for the Fall and Winter terms) are not entitled to any tuition cancellation; however, courses dropped prior to the conclusion of the fourth week of classes do not appear on students' academic records. After the fourth week of classes, courses dropped are included on students' academic records with a mark of 'W,' Withdrawal.
6. Students are not permitted to add courses after the second week of the term.
7. Students are required to have instructors' signatures for drops processed after the fourth week of the term.
8. Students are not permitted to drop courses after the final examination period begins.

College of Engineering: Students are not permitted to drop courses after the fifth week of classes without written approval of their adviser. Some departments have more stringent restrictions on dropping of courses.

Credit by Examination

A graduate student who wishes to obtain credit toward an advanced degree for knowledge in a field essential to his/her program of study, acquired by means which preclude formal transfer to Wayne State University, may petition for an advanced credit examination in a course or courses covering the relevant area of study. The petition requesting such advanced credit shall state the basis for the request in terms of the student's competence at the graduate level in the particular academic area. The established examination fee must be paid before the examination is taken. All grades will be recorded on the student's transcript. Such grades will not be used in computing the honor point average. The fulfillment of any requirement through credit by examination does not relieve the student of the residence requirement for the advanced degree.

Graduate Courses

Generally, courses numbered 5000 and above are considered graduate level; in some departments, certain 5000- and 6000-level courses are not permitted for graduate credit and are so designated. Courses numbered 7000 and above are open only to graduate students.

Graduate work is classified either as course work, in which students meet as an assembled group, or as research.

Directed Study: Independent study may be authorized provided the area of interest is an integral part of the student's graduate program and is not covered by courses scheduled while completing one's course requirements. Before a Ph.D. student may register in directed study, he/she must complete the Ph.D. directed study petition form, *Doctor of Philosophy Petition and Authorization for Directed Study*, and obtain the written permission of the Graduate School. The petition must contain information about the nature, scope, and significance of the course, and indicate the major requirements the student must fulfill. Master's students must obtain the written permission of their college Graduate Officer.

Business Administration: All courses numbered 6000-6099 and 7000 or higher are open *only* to students formally admitted to a Wayne State graduate program, or to qualified guest students. Enrollment in these courses must be approved by a graduate adviser or be consistent with a student's *Plan of Work*. Students in an undergraduate, post-bachelor, or non-matriculated status are not eligible.

Law School: In addition to the above approvals, graduate students must obtain the written permission of the Law School Dean to elect Law School courses or directed studies.

Graduate Credits

For definition of Credit (Credit Hour), see page 22.

Major credits: credits earned in the student's major field are designated as major credits. The dissertation, thesis, or essay and at least one-half of all other credits, including the final seminar (if required), must be in the major field.

Minor credits: credits earned in departments other than the major are classified as minor or cognate credits. Election of minor credit is encouraged to enable the applicant to broaden his/her program. Minor courses should be related to the major and eight or more graduate credits approved by the unit graduate committee chairperson will constitute a minor.

Transfer of Credits — Graduate

In work toward the master's degree, credit beyond the twenty-four credits which must be earned in residence may be transferred from accredited graduate schools, provided such credit is 'B' or better and certified as graduate-level credit on an official transcript. A student wishing to transfer graduate credit toward the Ph.D. degree must file a petition with the Graduate School, approved by his/her adviser and Departmental Graduate Committee Chairperson, requesting such transfer. The petition must be supported by an official transcript showing a minimum grade of 'B' for the courses to be transferred; 'B-minus' credit is not acceptable for transfer. Transfer credits must be appropriate to the student's degree program. Doctoral dissertation

credits will not be transferred. Courses accepted for transfer credit from outside or within Wayne State University cannot have provided credit toward a prior degree except when the master's or another pre-doctoral certificate or degree is applied to the doctoral degree. Admission to Wayne State University based upon a previously earned master's degree *does not* guarantee that those credits are applicable to a graduate degree at Wayne State University.

Extension Credits earned at other than Michigan institutions cannot be applied toward a graduate degree nor an education specialist certificate.

School of Business Administration: A maximum of six semester credits (two courses) may be transferred from other graduate institutions.

Maximum Credit Load

A student with a strong academic record who is devoting full-time to graduate study and carrying no outside employment may register in a program *not to exceed sixteen credits per semester*. A student engaged in part-time work should limit registration in proportion to the amount of outside work. A student employed full-time will normally not register in excess of eight credits. A student working full-time who desires to carry more than eight credits, must get permission from his/her Graduate Officer or Dean. Some colleges or schools stipulate other maximum credit requirements, which take precedence over those set by the Graduate School. Graduate Assistants are required to register for six to twelve credits each semester. The University considers a program of eight graduate credits per semester to be full-time study.

Additional Essay, Thesis, or Dissertation Elections and Fee Policy

A graduate student who has enrolled for all elections (including essay, thesis, or dissertation) stipulated by his/her *Plan of Work*, and who has completed all the requirements of these elections, but has not completed the essay, thesis, or dissertation, will be required to register for at least one credit (the appropriate amount to be determined by the department) of essay, thesis, or dissertation direction until such time as the student:

- a) completes the requirements for the degree;
- b) declares him/herself no longer a candidate for the degree; or
- c) exceeds the time limit allotted for securing the degree.

For these credits, the student will pay customary fees and will register as an auditor. No degree credit will be granted for these elections which are beyond the required credits for an essay, thesis, or dissertation. A mark of 'Z' (Auditor) will be recorded on the student's record for additional elections.

College of Nursing: The additional elections and fee policy also applies to field studies and research practicums.

Short-Term and Travel-Study Courses for Graduate Credit

Short-Term, Workshop-Institute-Conference, and Travel-Study courses offered for graduate credit must be proposed, approved and authorized well in advance via the appropriate form (obtainable from the Graduate School). After an initial authorization, courses to be repeated with no substantial change may be petitioned and approved by memorandum on the basis of the original on file.

Short-Term Courses are those created or adapted to meet for a time period of less than one-half an academic semester—i.e., less than 7-1/2 weeks. Such courses offered for graduate credit will provide for at least fifteen contact hours and the requisite proportion of outside preparation for *each* hour of credit. It is assumed that short-term courses will not differ from regular fifteen-week courses in terms of objectives, content, contact hours, or academic expectations, unless such a difference is reflected by a proportioning of graduate credits.

Workshop-Institute-Conference Courses (WIC) are those specially formulated experiences which, because of their usually 'applied' nature, lend themselves to an exceptionally brief but intensive time span. They differ from short-term courses in their concentration, usually spanning from a single day to two or three weekends. Offered for graduate credit, these courses provide for a minimum of twenty-five contact hours and an appropriate proportion of additional work for *each* hour of credit. Since these experiences vary greatly in their purposes and the degree of participation expected of the student, they are offered for credit only infrequently and enroll only those students for whose academic programs they would be directly relevant. Graduate grading will be on an 'S' and 'U' basis only.

Travel-Study Courses are those created or adapted to take special advantage of the opportunity to relate a particular course of study to the cultures, mores, or institutions being studied. Such courses may involve either domestic or foreign travel. All are offered through the College of Lifelong Learning. Graduate credit for travel-study courses will be graded on an 'S' and 'U' basis only.

Graduate students may not register for any course or combination of courses in these categories that permit the accumulation of graduate credits at a rate greater than one credit hour per week. Registrations that exceed this rate will be canceled in advance if discovered and, in no case will the excess credit be counted toward the requirements for a Wayne graduate degree.

Graduate students may apply toward a Wayne degree no more than four credits earned in any combination of WIC and Travel-Study courses. This limitation applies to the total of a graduate student's work at Wayne, so that if four credits are applied toward the Master's degree, none may be applied toward a subsequent specialist, second Master's, or a doctoral degree. Credits approved for courses in these categories are the maximum allowable so that registrations will not be permitted for contingent directed studies or other similar course or research elections.

Obligations of Faculty and Students to the Instructional Process

Since education is a cooperative effort between teacher and student, both parties must fulfill obligations if the integrity and efficacy of the instructional process are to be preserved.

Responsibilities of Faculty Members

1. To contribute to and remain abreast of the latest developments in their fields;
2. To continually pursue teaching excellence;
3. To treat all students with respect and fairness without regard to ancestry, race, religion, political belief, country of origin, sex, sexual preference, age, marital status, or handicap;
4. To encourage differing viewpoints and demonstrate integrity in evaluating their merit;
5. To attend regularly and punctually, adhere to the scheduled class and final examination times, and arrange for notification of absence and coverage of classes;
6. To establish and maintain appropriate office hours;
7. To present, early in the semester, the following course information:
 - (a) course objectives and general outline;
 - (b) classroom procedures to be followed, expectations concerning class attendance, and proposed dates of major evaluations (including examinations, papers, and other projects);
 - (c) grading policy;
 - (d) where appropriate, a schedule of class-related activities, including class meetings and laboratory sessions;
 - (e) lists of texts and/or other materials needed for the course;
 - (f) late enrollment, withdrawal, and other special policies.
8. To provide and adhere, within reasonable limits, to the written syllabus of the course;

9. To know course matter thoroughly and prepare and present the material conscientiously;
10. To be informed of University services and recommend their use to students when advisable;
11. To follow these policies concerning written work and grades:
 - (a) grade and return written work promptly;
 - (b) submit final grades by the scheduled time;
 - (c) retain written materials not returned within the semester (e.g., final examinations, major term papers) for one academic semester in accordance with unit policy and allow students to examine such materials;
12. To implement unit procedures for student evaluation of faculty teaching, with attention to preserving student anonymity;
13. To behave appropriately in dealing with students so as to maintain a scholarly atmosphere.

Responsibilities of Students

1. To inform themselves of and to fulfill all requirements of the University and those of the college and department from which they expect to receive their degree;
2. To fulfill conscientiously all assignments and requirements of their courses;
3. To attend classes regularly and punctually;
4. To maintain a scholarly, courteous demeanor in class;
5. To uphold academic honesty in all activities;
6. To notify the instructor as early as possible if prevented from keeping an appointment or carrying out an assignment;
7. To discuss with the instructor any class-related problem and follow established procedures in the resolution of these problems;
8. To adhere to the instructor's and general University policies on attendance, withdrawal, or other special procedures.

It is expected that faculty and students will fulfill their obligations to the instructional process. If, however, a complaint does arise, the parties should meet in an effort to resolve the matter. When such a discussion fails to resolve the problem or is inappropriate given the circumstances, the head of the academic unit should be contacted. If this contact fails to satisfy the complaint, the college's published procedures should be followed. Although the University Ombudsperson is not a direct part of the appeal process, students and faculty may consult the Ombudsperson at any point during such proceedings.

Classroom Attendance Policy

Whenever attendance forms a basis for a portion or all of a course grade, students must be provided with explicit written information concerning that fact during the first week of classes. Such information shall be specific with regard to the penalty incurred for each absence and the means, if any, to compensate for the absence. It should be recognized that there may be certain situations where the student may not be permitted to make up the absence(s). This policy shall be applicable to all courses within the University, regardless of setting.

Deception, Fraud and Misuse of Documents

Intentionally furnishing false information to the University is explicitly prohibited, as is forgery, alteration, unauthorized possession, or misuse of University documents, records and identification cards. The University reserves the right to rescind degrees if the award of the degree was based in whole or in part on deception, fraud, other unacceptable academic conduct, or misuse of University documents.

Student Rights and Responsibilities

Upon the recommendation of the Student-Faculty Council, the University (Faculty) Council, the President-Deans Conference and the President, the Board of Governors, in January, 1967, approved a comprehensive statement of Student Rights and Responsibilities for

the University. In addition, the Board of Governors adopted a Student Due Process Policy. This latter document provides uniform procedures for all schools and colleges. Copies of these documents are available to students and faculty in the offices of the deans of each college and the Office of the Vice President for Student Affairs.

Law School: The faculty of the Law School has approved a set of academic regulations, copies of which are available to all students enrolled in the Law School.

College/School Grade Appeal Procedures

Each college and school has established grade appeal procedures. The appeal procedures are available from the Office of the College or School Dean. In most instances, grade appeals must be filed within thirty days of the time the student has or should have received his/her final grade.

Academic Appeals Procedure

In matters where a College's final decision is based upon the evaluation of a student's academic performance, and when review procedures available to him/her within the College have been exhausted, the student may request the Provost to review that decision on the record. A written Request for a Provost Review must be made by the student himself/herself, with a copy to the Dean of the College, postmarked within thirty calendar days of the postmark of the College's final decision, which is to be sent to the address provided by the student in the College's review procedures. The Provost's review of the College's decision will proceed as soon as practicable after notification by the student of his/her wish to seek review.

The student may also file with the Provost a Request for a Postponement of the effect of the College's final decision. Such a Request must be postmarked within seven calendar days of the postmark of the College's final decision, and a copy must be sent to the Dean of the College. Upon receiving a Request for Postponement, the Provost will immediately contact the Dean. Unless the College demonstrates clearly and convincingly that the injury to the College or to third persons that would result from such a postponement would outweigh the injury to the student from denying the postponement, the effect of the decision rendered by the College must be postponed until the date that the Provost issues a decision regarding the underlying Request for Provost Review. The Provost will inform the student and the Dean of her/his decision regarding the Request for Postponement within three school days after receiving the request.

Exceptions to this procedure may be granted by the Provost upon a showing of good and sufficient cause.

Academic Scholarship

A graduate degree is evidence of scholarly attainment; of ability to achieve academic excellence; of critical and creative ability with capacity to apply and to interpret what has been learned through research, the essay, the thesis, or the dissertation and the several examinations; of ethics in use of the work of others and in interpersonal relationships. See Graduate Grades, page 21.

Student Ethics

1. The submission of fraudulent academic records for graduate admission or transfer of credit by a student shall be cause for the student's dismissal from the Graduate School.
2. Academic work submitted by a graduate student for graduate credit is assumed to be of his/her own creation, and, if found not to be, will constitute cause for the student's dismissal from the School.

Academic Nepotism

Faculty members are not to place themselves, or allow themselves to be placed, in a situation amounting to 'academic nepotism,' i.e., teaching or otherwise directing the credit study or research of a student who is also a close relative. Concomitantly, students are not to take courses from close relatives or engage in research for academic credit under the direction of close relatives. All such credit will be disallowed.

DEGREE and CERTIFICATE REQUIREMENTS

In addition to the following regulations, requirements may be specified by the individual graduate departments.

MASTER'S DEGREE

The minimum Graduate School requirement for the master's degree is thirty credits, at least twenty-four of which must be taken at the University. In those master's degree programs where the college, school or department requires more than the Graduate School minimum, their requirements take precedence. The Graduate School recognizes three general master's degree plans, though not all plans are offered in each department (for exact information, see listings under individual departments in the appropriate sections of this bulletin):

PLAN A requires a total of thirty credits, including a total of eight credits for a thesis.

PLAN B requires a total of thirty credits, including a minimum of two credits for an essay.

PLAN C requires a total of thirty credits. The essay or thesis is not required.

Candidacy

Admission as an applicant does not assure acceptance as a candidate for a degree. Candidacy is a necessary but not sufficient requirement for graduation.

Generally, students enrolled in master's degree programs are expected to file a *Plan of Work* by the time eight to twelve graduate credits have been earned. The applicant shall be advanced to the rank of 'Candidate' upon approval of the *Plan of Work* by the College Graduate Office. In most colleges candidacy must be authorized by the time twelve graduate credits have been earned or subsequent registration will be denied. In preparing the *Plan*, the student and adviser should evaluate with care the personal and professional objectives of the student as well as all degree and departmental requirements.

Time Limitation

Students have a six-year time limit to complete all requirements for the master's degree. The six-year period begins with the end of the semester during which the student has taken work which applies toward meeting the requirements of the degree. The individual college or school reserves the right of revalidation of over-age credits which are between six and ten years old and which represent courses completed at Wayne State University. Such authority rests with the Graduate Officer of the college or school. Students are not permitted to revalidate credits earned at other institutions. In revalidation cases the adviser and the student must set a terminal date for completion of all degree requirements, including such additional requirements as may be prescribed to revalidate the over-age credits. Time extensions beyond these conditions are authorized only for conditions clearly beyond the student's control.

A student registered in a non-degree graduate classification is cautioned that only one semester of full-time graduate study, or part-time registration not to exceed nine credits, is permitted in this classification. Not more than nine credits may be applied toward the credit requirements for the master's degree.

Please see the appropriate sections of this bulletin for specific master's program information.

Essays and Theses

Under Plans A and B, departments require the completion of a thesis or essay prior to the granting of a master's degree. The essay or thesis must show evidence of scholarly study and writing and be related to the student's major. Students should consult their depart-

ments regarding any additional requirements for theses and essays, as well as for correct essay manuscript style. The Ph.D. office of the Graduate School should be consulted regarding matters of thesis format.

GRADUATE CERTIFICATE

Programs leading to a graduate certificate are available through several University units and are open to students who meet the general graduate admission requirements of the University; individual programs may have additional admissions requirements. The specific number of credits required for completion varies by program, though a graduate certificate program must consist of at least twelve graduate credits. Certificates may be free-standing or may be earned concurrently with a graduate degree. A certificate program must be completed within three years, a minimum honor point average of 3.0 in certificate courses must be maintained, and only nine semester credits of certificate course work may be applied toward a graduate degree.

Students should consult the specific certificate program description in this Bulletin to determine admission requirements, credits required for completion, and the degree(s) required for receipt of the certificate.

DOCTOR OF PHILOSOPHY DEGREE

Requirements for the degree of Doctor of Philosophy emphasize an over-all understanding of and high competence in a field of knowledge, familiarity with cognate disciplines, facility in the use of research techniques, and responsibility for the advancement of knowledge. The meeting of the requirements for the doctorate is tested primarily by examinations and the presentation of the dissertation rather than by a summation of courses, grades and credits.

Admission

A student may be admitted to the status of Ph.D. applicant if he/she meets all Graduate School requirements for admission, presents an honor point average of 3.0 ('B'=3) for the upper division of the undergraduate course work and is accepted for study toward the degree by his or her school or college and major department. In many departments, a personal interview with the Chairperson of the Department or the Chairperson of the Departmental Graduate Committee is considered essential. Students presenting less than a 3.0 undergraduate honor point average are required to complete a master's degree program, or its equivalent, prior to consideration for admission to a Ph.D. program.

Ph.D. Procedural Calendar

The following outline itemizes the deadlines and procedures for processing documents required for completion of the doctoral degree.

1. *Plan of Work*: Initiated by student with adviser and the Graduate Committee Chairperson's signatures before completion of forty graduate credits and before scheduling the qualifying examination.
2. *Report of Oral Qualifying Examination*: Exam must be taken within one month after having passed the written exam.
3. *Dissertation Outline and Prospectus*: Initiated by student with signatures of adviser, dissertation committee, and Graduate Committee Chairperson, after passing written and oral qualifying exams.
4. *Final Defense Form and Manuscript Approval*: Initiated by student with signatures of adviser, and dissertation committee, and Graduate Committee Chairperson, two weeks before dissertation defense. Students must attach to the final defense form a copy of the flyer or other notice advertising the dissertation defense to the University community. A Final Defense Graduate Examiner is appointed by the Graduate School. The last day for the dissertation defense is determined each semester. Check with the department's Graduate Committee Chairperson for Commencement deadlines.
5. *Change of Grade Memorandum for Dissertation credits*: Filed by adviser immediately after the dissertation defense.

Directed Study: Registration in directed study must have advance approval of the student's adviser and advance authorization of the Graduate School. A Graduate School *Petition and Authorization for Directed Study* must be signed by the student's adviser, instructor, and the Graduate School dean *before registration*. The Directed Study Petition must contain all relevant details, including an explicit course outline, a rationale for the course, and information about the major academic requirements the student must successfully fulfill.

Plan of Work

Early in his/her program the doctoral applicant, with the assistance of an adviser, plans a sequence of studies. This *Plan of Work*, approved by the adviser and the Departmental Graduate Committee Chairperson, should be filed with the Graduate School before the student has completed forty graduate credits (including transfer credits), and before scheduling the qualifying examination.

Ph.D. Coursework

To ensure adequate preparation, the Graduate Council has adopted minimum coursework requirements for the University's highest degree. Many programs will exceed these statutory minima.

A minimum of 90 graduate credits beyond the baccalaureate degree are required for completion of the Ph.D. program. Normally, a Ph.D. program will consist of:

- (1) twenty credits of coursework in the major (not including directed study or research credit);
- (2) at least one minor composed of eight or more credits elected outside the major department, or an interdisciplinary minor consisting of a minimum of twelve graduate credits;
- (3) thirty-two additional credits of coursework, pre-dissertation research and directed study; and
- (4) thirty credits of dissertation direction.

The Ph.D. program should provide for effective concentration in a major field with supporting courses in related fields. The decision concerning whether the student's *Plan or Work* will include one minor or two is made by the department.

The total Ph.D. program must include thirty credits, excluding dissertation direction, in courses open only to graduate students (i.e., 7000 level or above).

Dissertation Registration

The dissertation should be given consideration early in the program, but generally a student will not be permitted to register for dissertation direction (9999) credit until he/she has fulfilled all requirements for advancement to Ph.D. candidacy.

In some cases, with the approval of the student's adviser and the Graduate School, a Ph.D. applicant may be allowed to register for up to (but not more than) ten credits of dissertation direction before being admitted to candidacy. The final year may properly center on the requirements of the dissertation.

Dissertation Outline and Prospectus

Prior to initiating research, the Ph.D. student must prepare the Graduate School's *Doctoral Dissertation Outline and Record of Approval* form. This form is approved by the student's dissertation advisory committee and the Chairperson of the Departmental Graduate Committee. **The Graduate School also requires that the student prepare a dissertation prospectus, and submit it with the Dissertation Outline.** Following departmental approval, the Dissertation Outline is forwarded to the Graduate School for the Dean's approval and distribution.

Candidacy

A Ph.D. Applicant will be advanced to the rank of Ph.D. Candidate when he/she submits an approved *Plan of Work*, successfully completes the Qualifying Examinations and submits and receives the

Graduate Dean's approval on the Dissertation Outline and Prospectus.

Program Exceptions

A student who wishes to request an exception to any of the Ph.D. program minimum requirements should file a written, detailed petition with his/her adviser. If the adviser approves the petition, he/she will forward it, along with his/her recommendation, to the Chairperson of the Departmental Graduate Committee. If approved by the department, the petition will be forwarded to the Graduate School. All exceptions must ultimately be approved by the Graduate School.

Time Limitations

Students have a seven-year time limit to complete all requirements for the Ph.D. degree. The seven-year period begins with the end of the semester during which the student was admitted to doctoral study and was completing work toward meeting the requirements for the degree. In the program leading to the doctor's degree, up to forty-eight quarter or thirty-two semester credits of 'B' or better graduate credit earned prior to the student's admission as a doctoral applicant may be applied toward the degree without regard to lapse of time. Credit earned beyond thirty-two credits may not be over ten years old at the time of admission. Credit earned after acceptance as a Ph.D. applicant may not be over seven years old at the time the degree is conferred, except when, on the recommendation of the adviser, up to ten credits previously earned at Wayne State University may be specified for revalidation by examination. In the event that any courses have been previously revalidated in connection with the earning of the master's degree, these shall be counted as a part of the total ten. Time extensions beyond these limitations are authorized only for conditions which are clearly beyond the student's control.

Ph.D. Foreign Language Requirement

The Ph.D. Foreign Language Requirement is a matter of departmental option. Students are advised to contact the department in which they intend to major in order to determine the nature of the Ph.D. foreign language requirement, if any, for that discipline.

Doctoral students should bear in mind that most departments reserve the right to require foreign language proficiency for any Ph.D. student pursuing research which would benefit from the use of foreign language materials, even though other students in the same Ph.D. program are not required to establish foreign language competence.

Residence

The Ph.D. requirement of one year of residence is met by completion of at least six graduate credits in course work, exclusive of dissertation, in each of two successive semesters. The spring/summer semester may be excluded from the definition of successive semesters. Additional residence requirements may be imposed by the Ph.D.-granting departments. The student should contact the major department to determine what residence requirements must be satisfied.

In the experimental sciences for which it can be demonstrated that a student's research must be completed on campus, the residence requirement for the Ph.D. degree may be met by the dissertation director's written certification that the student has been in full-time residence for at least two successive semesters and one summer session. In this latter case, a count of course credits is not required for the fulfillment of the residence requirement, but specific dates of residence must be furnished.

In addition, the Ph.D. residence requirements stipulate that the student must elect at least thirty credits in graduate work exclusive of dissertation direction at the University.

College of Nursing: Summer Option Ph.D. students must complete a minimum of six graduate credits in course work, exclusive of dissertation credit, in each of two successive summers.

Individual Interdisciplinary Ph.D. Program

An individual interdisciplinary Ph.D. program may be developed for a promising student with the approval of the graduate committees of participating departments and the Dean of the Graduate School. Ordinarily, the participating departments will be no more than two, with one department having jurisdiction over an already approved Ph.D. program; but proposals involving more than two departments will be considered, providing that at least one department offers the Ph.D. degree. In reviewing a proposal for admission to the Individual Interdisciplinary Ph.D. Program, the Graduate School will give considerable weight to the interdisciplinary nature of the program. The student's field of specialization will be designated by combining existing departmental designations: e.g., chemistry and biology, or physics and mathematics.

While individual interdisciplinary Ph.D. programs shall be governed by the same minimum Graduate School requirements established for all Ph.D. programs, the student petitioning for such a program must be advised that achieving satisfactory depth as well as breadth in two fields of specialization may well require a greater extent of time, effort and expense than does the traditional Ph.D. degree concentrated in a single department.

Additional information and program applications are available from the Ph.D. Office, Graduate School, 4327 Faculty/Administration Building.

Adviser and Advisory Committees

The Adviser represents the Department in helping plan the student's program. Additionally, the adviser shall approve the *Plan of Work*, recommend candidacy, guide the student's research, approve the dissertation, serve on the Oral Qualifying Examination Committee and doctoral dissertation committee, arrange for the qualifying examinations and Dissertation Public Lecture Presentation-Defense, and certify to the Graduate School that degree requirements have been fulfilled.

The Qualifying Examining Committee must consist minimally of three major departmental members with approved graduate faculty status. An extra-departmental member may be added at the discretion of the department. In this latter instance, the department is encouraged to select a person from the student's minor/cognate area. The membership of this committee may not normally be changed until the qualifying examinations (written and oral) have been passed.

The Dissertation Committee shall consist minimally of three major departmental members plus one extra-departmental member. The expertise of the extra-departmental member must be appropriate to the student's dissertation work. In the case of co-advisers from the same department, the number of major departmental members shall be increased to four.

After Graduate School approval, any changes in the committee structure shall require written justification.

Graduate Examiner

The Graduate Examiner is appointed by the Graduate School and serves as the representative of the Graduate Council as presiding officer at the Dissertation Public Lecture Presentation-Defense. The Graduate Examiner must be a tenured member of the Graduate Faculty in a department other than that of the student's major. The Graduate Examiner may not be a member of the student's dissertation committee.

Qualifying Examinations

Before taking the written and oral qualifying examinations, the student must have filed a *Plan of Work* with the Graduate School. The qualifying examination shall cover the applicant's major and minor areas, and such other related matters as the qualifying examining committee may prescribe.

The oral qualifying examination shall be conducted by the doctoral committee within thirty calendar days after the written examination has been passed. Upon completion of the written part of the Qualify-

ing Examination the department shall notify the Graduate School of the arrangements for the Oral Qualifying Examination (via the Qualifying Examination Report Form) and submit the names of the members of the examining committee for approval. The Examining Committee shall select a Graduate Examiner from among the Committee members. If the examining committee determines that the applicant has not passed all parts of the written and oral examinations, the committee must make specific recommendations as to admitting the applicant to a second examination and specify any additional work that should be completed prior to such an examination. If the Graduate Examiner certifies that the student has failed the oral part of the examination, a second examination may not be held until at least one semester has elapsed, but must be held within one calendar year following the first examination. The same examining committee must preside over both examinations. The second examination shall be considered final.

Dissertation Public Lecture Presentation-Defense

The dissertation format and appearance must be acceptable to the Graduate School before the Dissertation Public Lecture Presentation-Defense shall be authorized. Additionally, each Committee member must have certified, in writing, that the dissertation has been read and approved for a Public Lecture Presentation-Defense.

The Doctoral Dissertation Public Lecture Presentation-Defense has three phases, as follows:

The Public Lecture Presentation-Defense: In the public lecture or presentation, the candidate is expected to share the results of his or her dissertation research with the audience and the dissertation committee. This lecture or presentation may vary in length depending on the circumstances and discipline. Its conduct is under the jurisdiction of the Graduate Examiner, who represents the Graduate School, but the Graduate Examiner may delegate the chairing of the presentation or lecture to the candidate's dissertation adviser. At the end of this public lecture or presentation, members of the audience, as well as the dissertation committee members, are encouraged to direct questions pertaining to the presentation or research to the candidate.

The Dissertation Committee's Meeting with the Candidate: At the conclusion of the public presentation and defense, the dissertation committee members will meet privately with the candidate to pose further questions about the candidate's research or to address issues related to the dissertation manuscript. The Graduate Examiner presides at this meeting.

Evaluation of the Candidate's Performance: Upon the completion of the public presentation and defense and the private meeting, the dissertation committee members, in the absence of the candidate and the audience, discuss the candidate's performance and decide whether or not he/she has passed the defense. The graduate examiner chairs the discussion and communicates the result to the candidate.

Two final signed copies of the dissertation are to be submitted to the Graduate School within ten calendar days after the Dissertation Public Lecture Presentation-Defense. The Ph.D. degree will be certified only upon receipt of these two copies and the reconciliation of the student's Plan of Work and transcripts.

Graduation

Each candidate for a degree or certificate must file a *Graduate Application for Degree* not later than the first day of classes for the semester in which he/she expects to complete the requirements for the degree. Consult the academic calendar on page 4 of this bulletin. If an application for a degree was filed for a previous term in which the student did not graduate, an amended application is necessary.

Commencement

Information concerning commencement announcements, caps and gowns, invitations, tickets, time and place, assembling and other relevant items will be mailed to the graduates by the Commencement Office prior to the event. Candidates for advanced degrees are

requested and expected to attend the commencement at which the University confers upon them the honor of the degree earned.

Theses and Dissertations

The presentation of a thesis or dissertation generally brings to a close the pursuit of either the master's or the doctoral degree. In essence such manuscripts represent a tangible summation of the many hours spent in study and research to acquire a higher education. For this reason such scholarly documents must evidence only the highest standards of research and writing. They must show consistency in punctuation, style and format.

Advisers have primary responsibility for approval of the thesis, but members of a doctoral committee must read, approve and sign the dissertation. Such approval includes all academic and professional evaluations and judgments as to originality, adequacy, accuracy, significance, methodology, justification or conclusions and correctness of style. Approval shall not be recorded until the work and manuscripts are fully verified and accepted.

The thesis and dissertation should be selected and planned with care; either may be of a research, expository or critical nature. Both must be an original work, in or related to the student's major field of specialization. Work submitted for credit in other courses cannot be used in fulfilling thesis or dissertation requirements. If proper standards of quality, objectivity, originality and independence are maintained, the candidate may use data derived from other research he/she has conducted at the University. Neither the results of the research nor the publication of findings may be restricted by any non-University agency. The results of the research may be published prior to submission and acceptance of the thesis or dissertation, in which case Graduate School notification is required.

Format: Candidates submitting manuscripts are instructed to follow closely the Graduate School and college or school regulations governing the format of the thesis or dissertation. The University manuscript format guide may be obtained in the Graduate School. It is official policy that acceptance of a thesis or a dissertation, as well as certification of a candidate for a degree, shall not be granted unless a manuscript is technically correct in format and in a form suitable in all respects for publication. The Graduate School Ph.D. Office staff is available to assist advisers and students who have format questions or problems.

Binding Charges: A charge is assessed for the University copies to be bound. The assessment is paid at the Graduate School. Checks are to be made payable to Wayne State University.

Dissertation Publication Plan: To insure publication, doctoral candidates are assessed a fee by the Graduate School and the University arranges to have the dissertation microfilmed. Filing a *Microfilm Agreement Form* is required. A positive copy of the microfilm will be placed in the University Library and the abstract will be published in *Dissertation Abstracts*. Deviations from this procedure require the approval of the Graduate School.

Dissertation Copyrighting Charge: Copyright service provided by University Microfilms, Inc., is available upon request. The candidate shall pay the amount necessary to cover the cost of copyrighting to the Graduate School.

Typing Services: The Graduate School maintains a roster of typists and typing services. The roster is open to any typist or secretarial service submitting a name. The University does not investigate these names as to competence, reliability, or current availability of service. The Graduate School has at no time given permission to any secretarial agency or typist to use its name as a 'seal of approval'. When selecting an agency or a typist, it is best to do so on the recommendation of a friend, an adviser, or a member of the faculty. *It is the student's responsibility to make certain that the typist selected follows the approved manual of style.*

GRADUATE FINANCIAL ASSISTANCE

OFFICE of SCHOLARSHIPS and FINANCIAL AID

3 West, Helen Newberry Joy Student Services Center;
(313) 577-3378

The Office of Scholarships and Financial Aid (OSFA) annually administers more than \$71 million in financial aid funds from federal, state, University and private sources. Some financial aid programs are need-based, other programs are non-need based, and awards are given in recognition of special skills, talents, or academic ability.

Wayne State University assumes the student will contribute toward educational expenses; he or she has primary responsibility for educational costs. Financial aid may *supplement* the student's contribution. Due to varying levels of student aid, Wayne State cannot assure students that it will be able to meet their full financial needs.

Types of Financial Aid: Financial aid at Wayne State is awarded in the form of a 'package,' and generally consists of four types of aid: grants, scholarships, loans, and employment (work-study).

Grants: Gift assistance awarded on the basis of financial need, and which requires no repayment. The maximum Board of Governors (BOG) Grant to eligible graduate students is \$1,000 per academic year.

Scholarships: Gift assistance awarded on the basis of academic achievement or other special ability, and which requires no repayment. Financial need may be a factor in some awards. University private scholarships, including criteria and amounts are described in the publication *Unlocking the Door to Your Future: Scholarships and Loans at Wayne State University*, which is available from OSFA.

Loans: Money that must be repaid at a future date, usually following graduation or when the student ceases to be enrolled on at least a half-time basis. Loans bear a five to nine per cent interest on the unpaid balance during the repayment period.

Federal Perkins Loans and Federal Direct Loans are need-based and available to graduate students. Federal Direct Loans are discussed below. A Federal Perkins Loan may be borrowed up to the amount of \$5,000 for each year of graduate study; the actual amount of the loan in any year is dependent on the funds available. The total amount that may be borrowed as a graduate student is \$30,000, including any Perkins Loans borrowed as an undergraduate. Federal Perkins Loans are offered only to eligible students, and only if the student requests loans on the financial aid application (i.e., answers 'yes' to Question 33 in Section B of the Free Application for Federal Student Aid).

Work-Study: An employment program of on- or off-campus jobs that involves direct exchange of money (an hourly wage) for work performed. Federal Work-Study and Michigan Work-Study jobs are available to graduate students on the basis of financial need. Work-study is offered only to eligible students, and only if the student requests employment on the financial aid application (i.e., answers 'yes' to Question 32 in Section B of the Free Application for Federal Student Aid).

As a Federal Work-Study employee, the student's pay is at least the federal hourly minimum wage. Total earnings may not exceed the amount of financial need. A student may work no more than twenty hours per week during each semester he/she is enrolled in classes, and up to forty hours per week between terms.

The State of Michigan sponsors the Michigan Work-Study Program, which is similar to the federal program described above. The hiring process and pay rates are the same for both programs. However, only Michigan residents may participate in the state program, and the maximum number of hours graduate students may work per week is restricted to twenty.

A work-study award is NOT an employment guarantee. Students interested in work-study should read carefully the Student Guide to

On-Campus Employment, which explains the hiring process and terms and conditions of employment. The *Guide* is available from University Placement Services, 1001 Faculty/Administration Building.

Financial aid program eligibility requirements, award amounts, and conditions for continuing an award after its initial year vary. *The student must reapply for financial aid each academic year.*

Application Procedures: To receive consideration for 1998-99 financial aid, students must complete the *1998-99 Free Application for Federal Student Aid (FAFSA)*; to receive consideration for 1999-2000 financial aid, students must complete the *1999-2000 Free Application for Federal Student Aid (FAFSA)*. Either the paper or the electronic FAFSA may be submitted; the paper FAFSA is available from OFSA. FAFSA Express and FAFSA on the Web are available on the Internet: (<http://www.ed.gov/offices/OPE/express.html>). FAFSA Express also may be reached by telephoning the U.S. Department of Education: 800-4FEDAID (800-433-3423).

Application Deadlines: The 1998-99 deadline for Wayne State University financial aid consideration (except for loans and private scholarships, as explained below) is May 1, 1998 for fall and winter semester. The 1999-2000 deadline for Wayne State financial aid (except for loans and private scholarships) is May 1, 1999, for fall and winter semesters. To release application information to Wayne State University, the applicant (except those in Medicine and Law) should list the Title IV (federal) school code for the main campus, 002329, in Section G of the FAFSA. For applicants in the School of Medicine, the federal school code is E00570; for Law School applicants, the code is E00435.

The FAFSA, which is sent to the federal processor, determines the amount of the student's Expected Family Contribution (EFC). The EFC is the amount you (and your spouse, if married) can contribute toward your educational costs. The EFC is stated as a five-digit number (00000 to 99999) on the Student Aid Report (SAR).

Within four weeks of submission of the FAFSA to the federal processing agency, the agency will mail the applicant a Student Aid Report. The SAR will either identify the EFC or will request additional action for determining the EFC. The student should carefully follow all SAR instructions. The student need not submit the SAR to OFSA; it will be electronically transmitted by the agency to OFSA. The SAR data will then be used by OFSA to determine the type and amount of financial aid to be awarded, if any.

Financial Need: To determine the amount of financial need, the OSFA subtracts the amount of your EFC from the average cost of attendance (COA) at Wayne State University, as follows: COA minus EFC equals financial need. The COA, which is also referred to as the 'student budget,' usually is the sum of costs for tuition and fees; room and board; books and supplies; transportation; and miscellaneous expenses. As a state institution, Wayne State has a relatively low COA. The estimated average total cost for the 1998-99 academic year (nine months) is \$12,908 for a Michigan resident who is single and enrolled full-time at the graduate level (eight credit hours or more).

Aid Requiring Additional Application Forms and Deadlines: A separate application form, in addition to the FAFSA, must be submitted for the following types of financial aid:

1) *Private Scholarships:* Beginning the second week of each winter semester, application forms for private scholarships are available from OSFA for the following academic year (fall and winter terms). The 1998-99 application deadline is April 30, 1998; the 1999-2000 deadline is April 30, 1999. Specific scholarships with their criteria are listed in *Private Scholarships*, a publication available from OSFA. Private scholarships that are awarded by academic departments may have different deadlines and application requirements; students should contact the appropriate department for application and deadline information.

2) *Federal Direct Loans:* To ensure timely processing of your *subsidized* (see description below) Federal Direct Loan, the following tables indicate the dates that a student's FAFSA processing results (showing a loan request via the answer 'yes' to Question 33, Section B) are due in OFSA.

1998-99 Loan Request Form Due Dates:

Loan Period	Due Date
Fall Term 1998 only	September 1, 1998
Fall Term 1998 and Winter Term 1999	November 1, 1998
Winter Term 1999 only	November 1, 1999
Spring/Summer Term 1999	March 15, 1999

NOTE: If your first enrollment at Wayne State is for Winter Term 1999 or Spring/Summer Term 1999, the following due dates apply:

Winter Term 1999	January 15, 1999
Spring/Summer Term 1999	April 15, 1999

1999-2000 Loan Request Form Due Dates:

Loan Period	Due Date
Fall Term 1999 only	September 1, 1999
Fall Term 1999 and Winter Term 2000	November 1, 1999
Winter Term 2000 only	November 1, 1999
Spring/Summer Term 2000	March 15, 2000

NOTE: If your first enrollment at Wayne State is for Winter Term 2000 or Spring/Summer Term 2000, the following due dates apply:

Winter Term 2000	January 15, 2000
Spring/Summer Term 1999	April 15, 2000

To remain eligible for Federal Direct Loans, students must be enrolled at least half-time at the time loan proceeds are paid.

Federal Direct Loan Types: Federal Direct Loans are either *subsidized* or *unsubsidized*. Your eligibility for a subsidized Federal Direct Loan must be determined *before* you may receive an unsubsidized loan.

The *subsidized* Federal Direct Loan has a low and variable interest rate, and is need-based. The maximum annual amount a graduate student may borrow is \$8,500. The aggregate loan limit is \$65,000, including subsidized loans received for undergraduate study. The federal government pays the interest on the loan during: (1) the student's enrollment in school on at least a half-time basis; (2) a six-month grace period immediately following the student's separation from school; and (3) a deferment, which is an authorized time when payments may be postponed.

The *unsubsidized* Federal Direct Loan, which also has a low and variable interest rate, is non-need-based. The maximum annual loan a graduate student may borrow is \$18,500 (including any subsidized loan). The student's actual annual loan may not exceed his/her cost of attendance. Aggregate loan limit is \$73,000, including loans received for undergraduate study.

'Unsubsidized' means that the federal government does NOT pay the interest to the lender (U.S. Department of Education) on the student's behalf. The student responsible for paying all interest on the loan. Interest is charged beginning the day the loan is paid until the day the loan is repaid in full. The student may choose either to pay the accumulating interest while in school, or to have the unpaid accumulated interest capitalized (i.e., added to the principle balance of the loan).

Entrance Loan Counseling: If you are a first-time borrower under the Federal Direct Loan Program, you must attend entrance loan counseling. Federal regulations prohibit OSFA from paying your Federal Direct Loan proceeds to the student, as a first-time borrower, until after he/she has attended an entrance loan counseling session.

The purpose of loan counseling is to advise you of your rights and responsibilities as a Federal Direct Loan borrower. If a student has received entrance loan counseling as a Federal Stafford Loan borrower, he/she is not required to attend further counseling.

Loan counseling sessions last approximately forty-five minutes. They are conducted on the main campus, and at Oakland Center (33737 W. Twelve Mile Road, Farmington Hills). A schedule of counseling dates, times and locations is available from OSFA (telephone: 313-577-3378) and from Oakland Center (telephone: 248-553-3545).

Verification: The process by which a college or university confirms the data on an individual student's FAFSA is called *verification*. A student whose application is selected for verification is required to

provide documentation to OSFA that information reported on the financial aid application is accurate. For this purpose, the student will be asked to submit documents such as a copy of his or her (and the spouse's, if married) federal income tax return or a statement certifying non-tax-filer status. He/she will also be asked to complete a *verification worksheet*, which OSFA will provide.

Financial Aid Payments: Federal Direct Loans are paid in two disbursements, regardless of the length of the loan period. All other financial aid is paid in two disbursements if the award is for the academic year (one payment in each of the fall and winter semesters), and in one disbursement if the award is for only one semester.

Academic Status Eligibility: To receive consideration for the *maximum* award amounts under financial aid programs, a student must enroll full-time. At the graduate level, enrollment for eight credits is full-time; enrollment for from four to seven credits is part-time. *Note:* Students who enroll less than full-time but at least half-time are eligible for financial aid in pro rata amounts.

Satisfactory Academic Progress: To receive financial aid, an otherwise eligible student must maintain satisfactory academic progress toward a degree or certificate. Copies of the Standards of Satisfactory Academic Progress Policy are available from OSFA.

Eligible Program Exceptions: To receive financial aid, an applicant must be enrolled in an *eligible program* at Wayne State University. An eligible program is one which leads to a degree or certificate. There are two exceptions to the eligible program requirement: (1) prerequisite course work, and (2) teacher certification.

In addition, if a student is a *post-bachelor's student* (Rank 06), he/she is *not* eligible for financial aid, unless he/she meets one of these exceptions.

1) *Prerequisite course work:* Students enrolled on at least a half-time basis in courses required for enrollment in an eligible program are eligible for Federal Direct Loans. Half-time enrollment at the undergraduate level is from six to eleven credit hours. Note that while the courses must be part of an eligible program, the student taking these courses to fulfill prerequisites is not required to be enrolled in that eligible program. (For example: when a student who has earned a bachelor's degree elects the additional specialized undergraduate course work necessary for enrollment in a graduate program.)

Students are eligible for loans for *one consecutive twelve-month period* beginning the first day of the loan period for which they are enrolled half-time. Effective January 1997, federal regulations stipulate the *level of the program* in which the student intends to enroll determines whether first-year or fifth-year undergraduate loan limits apply; possession of a prior degree has no bearing on the applicable loan limit. Note that federal regulations stipulate that the twelve-month period begins on the first day of the term in which you enroll on at least a half-time basis. If there is a decrease in enrollment to less than half-time after the first day of that term, the twelve-month clock continues to run.

If a student enrolls in preparatory course work necessary to enter a *graduate or professional degree or certificate program*, *fifth-year* undergraduate loan limits apply. Thus, \$5,500 is the Federal Direct Loan annual limit. (*Note:* The School of Medicine Post-Bachelor's Program is the prerequisite course work for admission to the medical school.)

If a student enrolls in preparatory course work necessary to enter an *undergraduate degree or certificate program*, *first-year* undergraduate loan limits apply. Thus, \$2,625 is the Federal Direct Loan annual limit. Independent students are eligible to apply for an additional \$4,000 unsubsidized Federal Direct Loan.

2) *Teacher certification:* Students enrolled at least half time in courses required for initial elementary or secondary teacher certification, or for recertification, are eligible for Federal Direct Loans. Half-time enrollment at the undergraduate level is from six to eleven credit hours. Eligibility for loans is not limited to twelve months. Federal regulations stipulate that students enrolled in teacher certification programs are considered *fifth-year* undergraduates. Thus, the \$5,500 Federal Direct Loan annual limit applies. Independent stu-

dents are eligible to apply for an additional \$5,000 unsubsidized Federal Direct Loan. Federal regulations stipulate that students enrolled in teacher certification programs are considered fifth-year undergraduates; thus, the \$5,500 Federal Stafford Loan limit applies. (*Note:* Optional courses that a student elects to take for professional recognition or advancement, or on recommendation of a Wayne State adviser, are not included in this exception.)

Federal regulations stipulate that OSFA must maintain documentation of the above-stated exceptions. That is, OSFA must obtain from financial aid applicants who are not enrolled in programs leading to a degree or certificate the documentation that they are enrolled *either* in prerequisite course work *or* in teacher certification course work. For this purpose, OSFA has developed the *Eligible Program Exceptions Form*. Students in these categories must have the *Form* completed by the appropriate college or department and return it to: Office of Scholarships and Financial Aid, 3 West, Helen Newberry Joy Student Services Center.

Refund Policies: Federal regulations require all post-secondary institutions to observe a fair and equitable refund policy for Title IV (federal) financial aid recipients; copies of this policy are available from OSFA. (The general refund policy of the University is given on page 20 and in the *Schedule of Classes* for each term.)

Financial aid recipients who withdraw from classes may be required to repay a portion of the aid received. OSFA strongly encourages students to discuss with a financial aid administrator the effect that withdrawal from classes will have on financial aid, before implementing the change. After officially withdrawing from classes, the student must immediately notify OSFA of the change in his/her enrollment status.

Programs Ineligible for Financial Aid: Students in the following categories are not eligible for financial aid:

- 1) Student's admission to the University was granted under (a) *guest student status* or (b) *permit to register status*.
- 2) Student is not in an eligible program (leading to a degree or certificate) and one of the 'Eligible Program Exceptions' (see above) does not apply.
- 3) Student is an ineligible non-citizen, either (a) in the U.S. on only an F1 or F2 student visa; (b) in the U.S. on only a J1 or J2 exchange visitor visa; or (c) in the U.S. on only a G-series visa (pertaining to international organizations).
- 4) Student was admitted to the University or enrolled in one of the following programs: (a) the English Language Institute; (b) Post-Bachelor's Rank 06, Curriculum 000; (c) College of Lifelong Learning non-matriculated graduate; or (d) graduate non-degree Rank 60 (pre-master's), Rank 53 (post-master's), or Rank 69 (post-doctoral).

**Office of Scholarships and Financial Aid
Client Service Hours:**

Picture identification is required. All information submitted to OSFA is private; to ensure confidentiality, picture identification is required for service at the counter.

General Assistance:

Monday through Thursday 8:30 a.m. - 6:00 p.m.
Friday 10:00 a.m. - 5:00 p.m.

Walk-In Counseling:

Monday and Tuesday 8:30 a.m. - 11:30 a.m.
Wednesday and Thursday 1:30 p.m. - 4:30 p.m.
Monday through Thursday 5:00 p.m. - 6:00 p.m.

Telephone Service (313) 577-3378:

Monday through Thursday 8:30 a.m. - 6:00 p.m.
Friday 8:30 a.m. - 5:00 p.m.

Note: During the summer months June, July, and August, OSFA client service and telephone service hours end at 5:00 p.m., Monday through Friday.

Financial Assistance Available through Schools and Colleges, Programs, and Departments

Consult the individual school, college, program, and department sections of this Bulletin for financial aid available to graduate students in their specific disciplines. In addition, Offices of Deans, Directors, and Department Chairpersons may provide further information on institutional and departmental aid and awards.

Financial Assistance Available through the Graduate School

For further information on the following sources of aid, if no other source is cited, contact the Fellowships and Scholarships Office of the Graduate School, 4302 Faculty/Administration Building (577-2172).

Graduate Assistantships: A number of Graduate Teaching Assistantships and Graduate Research Assistantships are available which provide stipends, partial tuition payment, and inclusion in the University's health insurance program. Interested students are advised to contact the chairperson of the department in which they intend to major.

Date of Acceptance or Appointment: Acceptance of an offer of financial aid (such as graduate scholarship, fellowship, traineeship, or assistantship) for the next academic year by an actual or prospective graduate student completes an agreement which both student and graduate school expect to honor. In those instances in which the student accepts the offer before April 15, and subsequently desires to withdraw, the student may submit in writing a resignation of the appointment at any time through April 15. However, an acceptance given or left in force after April 15 commits the student not to accept another offer without first obtaining written release from the institution to which a commitment has been made. Similarly, an offer by an institution after April 15 is conditional on presentation by the student of the written release from any previously accepted offer. It is further agreed by the institutions and organizations subscribing to the above resolution that a copy of this resolution should accompany every scholarship, fellowship, traineeship, and assistantship offer.

Fulbright Grants and Other Grants for Graduate Study Abroad: For information and application forms, contact the Office of Academic Affairs, 4112 Faculty/Administration Building; 577-2047. Please note the early deadline: campus deadline for most Fulbright grants is October 1 of the year preceding anticipated departure.

Graduate-Professional Scholarship: Each year the University awards a number of competitive tuition scholarships for students in graduate (master's, Ph.D., or graduate certificate) or advanced professional (Ed.D., M.S.W., Pharm.D.) degree programs. Awards are valued at a maximum of twelve resident graduate credits per term. Awards are contingent upon the student's acceptance into a graduate or professional degree/certificate program. Information concerning the competition deadline date, and application forms, are available from the Fellowships and Scholarships Office of the Graduate School. (Students pursuing the J.D. or M.D. degrees should consult the Law School or School of Medicine concerning financial assistance.)

King—Chavez—Parks Future Faculty Program: The State of Michigan allocates funds to Wayne State University for the purpose of awarding fellowships to minority graduate students (Black, Hispanic, American Indian or Alaskan Native, or Pacific Islander) in a doctoral program. Eligible students must be U.S. citizens or permanent residents and must be pursuing doctoral study in a field that is considered to be underrepresented with respect to the specific minority representation. Award amounts and types may vary, dependent upon the student's need. Additional information may be obtained by contacting the Fellowships and Scholarships Office of the Graduate School.

Library Searches for Graduate Students: The Graduate School provides an award of \$60 for data base searches to enrolled students engaged in research for their graduate degrees. Forms are available at all University Libraries. Contact the Fellowships and Scholarships Office of the Graduate School for details.

Munich Exchange Fellowship: Funding to cover one year of study at the University of Munich, available to any student admitted to a graduate program who is a citizen or permanent resident and who has demonstrated proficiency in the German language. Application deadline is April.

Thomas C. Rumble University Graduate Fellowship: This prestigious fellowship supports full-time students pursuing a Ph.D., M.M., or M.F.A. degree. Applicants should be outstanding students with clearly defined objectives relevant to their area of specialization. The Fellowship is an academic year award that includes a stipend, twelve graduate credits of tuition assistance per semester, subsidized health insurance, and a housing allowance for use in University Housing. Information concerning the Fellowship is available from the Fellowships and Scholarships Office of the Graduate School.

Thesis/Dissertation Research: Awards of \$500 to \$1000 are available to Ph.D. candidates engaged in dissertation research, or master's students engaged in thesis research. Contact the Fellowships and Scholarships Office for details.

Travel Awards: Awards of up to \$150 are available to Ph.D. students presenting self-authored papers at regional or national conferences or conventions. Students should contact their departments for details.

Metro Detroit Community Service Internships: The University's Center for Urban Studies offers internships for graduate students in academic disciplines related to urban affairs. Interested students should contact the Center for Urban Studies, 3049 Faculty/Administration Building.

Scholarships and Awards Available through the Division of Student Affairs

UNIVERSITY COUNSELING and PLACEMENT SERVICES: EDUCATIONAL ACCESSIBILITY SERVICES

583 Student Center; 577-3398

Vera Brown Endowment Fund: Award amount depends on funds available; awarded to any blind student demonstrating financial need to pursue his/her educational goals.

Robert O. Cork Scholarship: Award amount depends on funds available; awarded to any full-time handicapped student who has maintained a 3.0 honor point average and demonstrates financial need. Application deadline is April 30; contact Educational Accessibility Services (formerly Handicapped Educational Services) for details.

Roger Alan Rogan Memorial Fund: Award of variable amount depending on funds available; awarded to full-time disabled students experiencing emergency or other unusual circumstances.

INTERNATIONAL SERVICES

Second Floor, 5454 Cass Avenue; 577-3422

Abdul S. Sheikh Scholarship: \$500 scholarship offered to any full-time international student who demonstrates financial need and outstanding scholastic achievement. Application deadline is July 1 for the Fall Semester and November 1 for Winter Semester.

South African Education Studies Graduate Fellowship: An award of tuition and stipend for thirty-two graduate credits is available to a disadvantaged South African student. Application deadline is April 1. Contact the Admissions Office (3.5 Helen Newberry Joy Student Services Building) or the International Services Office (Second Floor, 5454 Cass Avenue) for details.

University Centers and Institutes

Center for Academic Ethics

311 Education Building; 5425 Gullen Mall; 313-577-8920

The Center for Academic Ethics was established by the Board of Governors of Wayne State University in July 1989. Its threefold purpose is: to foster greater attention at Wayne State University to ethical issues related to University curricula in the disciplines and the professions; to serve as a national center for the study of special ethical problems that arise in connection with the academic profession, university life, and the goals, policies and practices of institutions of higher education; and to act as a clearinghouse for information about work being done in the fields of applied and professional ethics within the University and elsewhere.

Upon request by individuals or groups associated with Wayne State University, the Center will: keep them informed of current literature and of conferences or programs on ethical issues related to their academic interests; help set up colloquia, conferences, and workshops on ethical problems related to specific disciplines or professions; help fund speakers and travel for projects related to the Center's objectives, usually in the form of matching grants; and join as sponsors of grant applications and assist in obtaining funding for projects which relate to the purpose of the Center.

In addition, the Center will: maintain a collection of books, periodicals, video and audio tapes, and other materials useful for classroom instruction, colloquia, and workshops in the area of academic ethics; maintain a list of speakers and consultants who are specialists in academic ethics; and maintain files on pertinent topics and related reference material.

Addiction Research Institute

9A University Health Center; 313-577-1388; Fax: 313-577-6685

Director: Eugene P. Schoener

Located in the School of Medicine, the Addiction Research Institute (ARI) was founded in 1985 as the University's academic center for the interdisciplinary study of addictive disorders. The ARI mission focuses on basic and applied research, professional training and novel service that promises to further our understanding and reduce the consequences of alcohol and other drug abuse. A diverse staff of biomedical and social scientists collaborates on a wide range of prevention-related activities. Past research has included investigations of: alcohol availability, consumption and damage; subjective, social, and physical availability of alcoholic beverages; efficacy of school- and community-based prevention programs; interpersonal violence, rape, and substance abuse; substance abuse knowledge and attitudes among college and medical students; effectiveness of clinical training in substance abuse; efficacy of treatment for chemical dependence; and substance abuse among the mentally ill.

ARI training activities encompass all aspects of the field, from diagnosis and management to prevention and policy issues. Audiences for these activities have ranged from community leaders to clinical faculty. Institute faculty offer: (a) mini-courses through the College of Lifelong Learning; (b) lectures and courses for advanced undergraduate and graduate students; (c) lectures, seminars, externship training and extracurricular learning experiences for medical students; (d) continuing education programs for health professionals; and (e) faculty training in the area of substance abuse.

The Institute coordinates a multi/interdisciplinary graduate certificate program in alcohol and drug abuse studies (CADAS), and has been engaged in a number of innovative service activities since its inception. These have included: consultation on substance abuse prevention program design; prevention program evaluation; health promotion training in Native American communities; design and management of a community-based prevention program for Detroit: *Project EPIC*; needs assessment and strategic planning for sub-

stance abuse prevention in the City of Detroit; development of a national medical student network on drug prevention; design and implementation of a clinical assessment instrument for chemically-dependent women; establishment of a substance abuse information center for metropolitan Detroit; and consultation and training for addiction counselors.

ARI staff contribute their time and effort in leadership capacities to local, state, and national professional organizations that further research and dissemination of knowledge about substance abuse and its consequences.

— Certificate Program in Alcohol and Drug Abuse Studies

The Certificate in Alcohol and Drug Abuse Studies (CADAS) is designed to provide advanced students with an integrated learning experience including biological, psychological, socio-cultural, and public health perspectives. The breadth and scope of this program allows students to gain insight and accomplish their objectives within a multidisciplinary context.

Admission: Applicants must meet the admission standards for Graduate School; for requirements, see page 16. Eligibility for the CADAS program is limited to those persons holding a master's degree from an accredited educational institution, or to those actively pursuing a master's or doctoral degree at Wayne State University. Application to the Program must also be made directly to the Institute.

CERTIFICATE REQUIREMENTS: Students must successfully complete a minimum of seventeen credits in Certificate courses, must achieve a minimum overall h.p.a. of 3.0 in certificate courses, and must attain a grade of 'B' or better in Core Courses. No more than nine credits may be applied toward a graduate degree. One elective course must be taken outside the student's discipline. The Program must be completed within three years. Required courses include an introductory course, and two core courses including the capstone course C M 8090, which is to be taken after completing a minimum of ten credits toward the certificate:

Introductory Course (elect one): *credits*

CED 5030 — Role of the Counselor in Substance Abuse	2
HPR 6540 — Workshop in Health, Physical Education, and Recreation: Role of the Health Educator in Drug Abuse	2
PSY 5070 — Bio-Behavioral Bases of Drug Addiction	3
S W 6540 — Effects of Drugs and Alcohol on Social Functioning	2

Core Courses:

PHC 6500 — Drugs and the Addictive Process	3
C M 8090 — Interdisciplinary Perspectives on Addictions	2

Electives:

The remaining required credits may be chosen from the two domains of study below, depending on the student's career interest.

Theory and Research Courses:

ANT 6710 — Medical Anthropology: Alcohol/Drug Use and Abuse	3
C M 7240 — Epidemiology	3
ED 7999 — Terminal Master's Seminar and Essay or Project	3
HPR 8999 — Master's Thesis Direction	3
NUR 8999 — Master's Thesis Research and Direction	3
S W 8810 — Research Seminar	3
S W 8996 — Group Project and Research and Direction	4
S W 8999 — Master's Thesis Research and Direction	6

Directed Study Course from the following:

ANT 7995, C M 7990, ED 7990, HPR 7990, NUR 7990, PHC 7710, PSY 7990, SOC 7990, S W 7990	
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NOTE: In *Master's Seminar/Research/Directed Study* courses: the topic chosen must focus on some aspect of alcohol or other drug abuse.

Counseling and Applied Courses:

CED 5090 — Family Education and Counseling: Substance Abusers	3
CED 6720 — Workshop in Counseling (Substance abuse section only)	2

CEJ 7020 ¹ — Counseling Internship	1-6
EDP 8320 — Internship in Clinical Procedures I	3-8
H E 7520 ¹ — Fieldwork in Clinical Health Education	3
HPR 6540 — Workshop in Health, Physical Education, and Recreation: Student Assistance Programs	2
SOC 6590 — Applied Sociology II: Strategies for Changing Social Behavior	3
SOC 7000 ¹ — Internship in Applied Sociology	3
S W 7998 ¹ — Field Work for Social Workers	5
S W 8660 ¹ — Social Work Practice Methods in the Workplace	2
S W 8690 ¹ — Interpersonal Practice in Substance Abuse	2

NOTE: In *Fieldwork or Internship* courses: the student must be placed in a setting in which at least fifty per cent of the clients or casework involves substance abuse.

African American Film Institute

Room 4011, 51 W. Warren
Director: Robert Chrisman

The African American Film Institute was established in 1995 to promote the study of African American film and filmmaking at Wayne State. Conceived as an interdisciplinary center drawing on several different areas of strength and interest within the University and the Detroit metropolitan intellectual and cultural community, the Institute's complimentary functions support its academic mission and bring scholars, filmmakers and students together in productive collaboration. Through the production and dissemination of scholarly research, the collection and preservation of films, documents and archival materials, exhibitions, symposia, and public programs, the Institute's activities are organized to support its academic programs, including an envisioned training program in film production especially for, but not exclusive to, minority filmmakers.

An undergraduate minor concentration in African American film studies is available; for information, contact the Co-directors of the Institute. Graduate-level courses, offered in several departments, include:

AFS 5800 — (FLM 5800) Third World Cinema	4
ENG 5040 — Film Criticism and Theory	4
ENG 5050 — Studies in African American Film (FLM 5050)	3-4 (Max. 12)
ENG 5060 — Styles and Genres in Film (FLM 5060)	4
ENG 5070 — Topics in Film (FLM 5070)	4
SPF 5020 — Studies in Film History	4 (Max. 12)
SPF 5060 — Documentary and Non-Fiction Film	4

Center for Arts and Public Policy

542 Manoogian Hall; 313-577-2952; Fax: 313-577-6300
Co-Directors: Bernard Brock and David Magidson

The mission of the Center for Arts and Public Policy (CAPP) is the identification, discussion, research, and dissemination of information on issues related to public policies, in both the public and private sectors, affecting the arts as well as the study of the effects of art on policy. In pursuing this mission, the Center conducts research, consults, and holds conferences related to these issues.

Asthma and Related Lung Disorders Research Center

628 Shapero Hall; 313-577-1714; Fax: 313-577-5589
Directors: George Fuller, David Bassett, James Fisher

The Asthma and Related Lung Disorders Research Center was established in 1995 to provide the necessary infrastructure to integrate basic, applied, and clinical research activities directed towards: identifying the causes and risk factors associated with asthma and related pulmonary inflammatory diseases; the development and validation of new methods of diagnosis, treatment and clinical management; and the assessment of the effectiveness of new methods of intervention required to maintain the quality of life and productivity of affected populations.

1. Course is open only to students registered in the school/college offering the course.

The specific aims of the Center include the establishment and maintenance of interdisciplinary lung research programs, and the provision of investigator access to expertise, equipment, and analytical laboratories. Programs are being designed to provide physicians, post-doctoral fellows, and graduate students with opportunities to participate in a wide range of interdisciplinary lung research activities. In order to ensure that new knowledge and technology generated by the Center's activities becomes readily available to scientists, community health workers, health maintenance organizations, and the pharmaceutical, chemical, and manufacturing industries, joint research ventures are being planned and continuing education programs are being developed.

Research opportunities are being established in a wide range of areas that include: the investigation of the cellular and molecular mechanisms of asthma, acute lung injuries, inflammation, and fibrogenesis; the determination of how acute and chronic occupational and environmental exposures cause or contribute to the etiology of lung diseases; and the establishment of the immunological determinants of asthma and other related lung disorders. These programs are being designed to provide support to clinical research programs that evaluate new therapeutic and prophylactic treatments and assess improvement in current prevention and clinical management procedures and strategies. The latter includes the assessment of physician, patient, and caregiver education programs in the use of new drug therapies for asthma and other lung disorders, and the assessment of new environmental and occupational interventions designed to decrease airborne exposures that cause or contribute to lung airway diseases. These activities are important in the development and assessment of cost-effective mechanisms to prevent, diagnose, and treat lung disorders, especially in urban populations that have traditionally had limited access to health care delivery systems.

Center for Automotive Research

2121 Engineering Building; 313-577-3887; 313-577-3843
Director: Naeim Henein

The Center for Automotive Research was established in 1980 to advance, promote and support research in areas of interest to the automotive industry. It is staffed by faculty from the Departments of Mechanical, Chemical, and Electrical and Computer Engineering, and graduate students from all of these Departments participate in the Center's research program.

Current research areas include the autoignition and combustion of petroleum and alternate fuels, phenomena in spark-ignited and compression-ignit ed engines, instantaneous friction, emissions formation and controls, engine dynamics and diagnostics, and startability and emissions under low ambient temperatures.

The research in the Center combines theoretical and experimental investigations. Theoretical research deals with fundamental processes of thermodynamics, heat transfer, mass transfer, and combustion kinetics, as applied to combustion engines. Experimental work is conducted in six instrumented test cells and a cold room for low ambient temperature research.

Bioengineering Center

818 W. Hancock; 313-577-1344
Director: Albert S. King

The Bioengineering Center is an interdisciplinary research unit which coordinates and supports joint research activities between the College of Engineering and the School of Medicine. Although the Center is administered by the College of Engineering, the research faculty is drawn from such diverse departments as Anatomy, Physiology, Orthopedics, Neurosurgery, Mechanical Engineering, Electrical and Computer Engineering, Chemical Engineering, and Physical Medicine and Rehabilitation. The research activities are located on campus as well as in various hospitals and clinics of the Detroit metropolitan area.

Current research projects include a continuing program on trauma biomechanics, which is the study of human response and tolerance to injury resulting from high speed vehicular accidents. The Center is

also engaged in a study of low back pain, which is a common affliction among workers in industrialized countries. Other areas of research include human motion biomechanics and orthopedic biomechanics.

Students who wish to major in bioengineering should apply for graduate admission to one of the academic departments of the College of Engineering. The Center is equipped with a vast array of impact facilities, including two accelerator mechanisms used for simulating car and aircraft crashes, and a linear impactor and a vertical accelerator. Up to sixty channels of data can be acquired simultaneously for digitization and processing on mainframe computers.

Barbara Ann Karmanos Cancer Institute

Meyer L. Prentis Cancer Center, 110 E. Warren Avenue, Detroit; 313-325-8870, 313-325-4700

Director: William P. Peters

On July 20, 1995, Peter Karmanos, Jr., gave \$15 million to the Michigan Cancer Foundation in memory of his wife, Barbara Ann, who died of breast cancer at the age of 46.

Mr. Karmanos's gift establishes the Barbara Ann Karmanos Cancer Institute as the integrated consortium of the Michigan Cancer Foundation, the Meyer L. Prentis Comprehensive Cancer Center of Metropolitan Detroit, and the cancer programs of the Detroit Medical Center and Wayne State University.

The Barbara Ann Karmanos Cancer Institute operates one of the twenty-five leading, nationally-recognized cancer research, treatment, education, and outreach centers in the United States, with some 1,600 cancer-related employees and 3,300 volunteers based at thirty-five offices and sites. The principal regional locations are the Wertz Clinical Cancer Center, 4100 John R, Detroit; Gershenson Radiation Oncology Center, 3990 John R, Detroit; Frankel Community Services Center, 18831 W. Twelve Mile Road, Lathrup Village; Vaitkevicius Community Services Center, 24601 Northwestern Highway, Southfield; Walt Comprehensive Breast Center, 4160 John R, Suite 615, Detroit; as well as thirty regional service centers and sites within the Detroit Medical Center/Wayne State University campuses.

Institute of Chemical Toxicology

2727 Second Avenue, Room 4000; 313-577-0100

Director: Raymond F. Novak

The Institute of Chemical Toxicology was chartered by the Wayne State University Board of Governors in 1988 to support the University's mission through excellence in research, teaching and service in the area of toxicology. The Institute is interdisciplinary in nature, involving faculty in the School of Medicine, the College of Pharmacy and Allied Health Professions, and the College of Science. Technological advances of the past several decades have significantly improved our standard of living and quality of life. Technological advancements, however, often produce new or unsuspected health hazards. The Institute is supported by the University's Research Excellence Fund and by grants from federal agencies; its primary objective is to address the short- and long-term effects of toxic agents on human and animal life.

Research: Institute faculty have active research programs in biochemical/molecular toxicology, respiratory toxicology, metals and solvent toxicology, immunotoxicology, transgenic animal gene knockout models, and chemical carcinogenesis, with emphasis on relevance and applications to human populations. The Institute emphasizes research using contemporary approaches in molecular biology, cell biology, and immunology to address critical and fundamental issues on the effects of chemicals and environmental agents on human health and disease. Research conducted in the Institute contributes to the development of new technologies and procedures, risk assessment, and risk management and serves as a base for new entrepreneurial activities involving intellectual property which have resulted in the award of patents.

Education: Institute faculty are directly involved in development of a new interdisciplinary graduate program in molecular and cellular toxicology. This program is designed to provide education and experi-

ence in the application of molecular and cellular techniques to basic problems in toxicology. Institute faculty also participate in graduate teaching and training in several other graduate programs, including cancer biology, pharmacology, hematology/oncology, and pharmaceutical sciences.

Service: The Institute's faculty participate as members of national grant peer review committees, as officers in national and international professional societies, as editors and reviewers for professional journals, as reviewers and advisers for other academic programs in toxicology, and as organizers of symposia, conferences and workshops. The Institute also develops and participates in informational and educational activities, including symposia and workshops.

— Graduate Program in Molecular and Cellular Toxicology

Office: Institute of Chemical Toxicology, 2727 Second Ave., Room 4000

Program Director: Raymond F. Novak

The following programs are offered through the Graduate School, with the cooperation of the Institute of Chemical Toxicology and the participating departments indicated below: Master of Science (Interdisciplinary) in Molecular and Cellular Toxicology; Doctor of Philosophy (Interdisciplinary) in Molecular and Cellular Toxicology.

The objective of this interdisciplinary program is to provide students with a comprehensive education in theoretical principles and experimental research in molecular and cellular toxicology, resulting in the award of a doctoral degree. Graduates will have gained a broad understanding of fundamental principles underlying modern molecular and cellular biology as applied to toxicology, and an in-depth knowledge in the use of these approaches within an area of specialization in toxicology. Training in the modern research techniques used in molecular and cellular biology is accomplished and will result in an understanding of the mechanisms of action of chemicals in cells and tissues. Graduate research opportunities emphasize the molecular and cellular mechanisms of chemical-induced cell injury, including cell growth and differentiation, gene expression, signal transduction, carcinogenesis, and immunomodulation in animal and human cells. Techniques and approaches include cell culture, hybridization analysis (Northern, Southern blots), PCR, cloning, sequencing, transfection, transgenic gene knockout animals, gel-shift assay, primer extension, and manipulation of signal-transduction pathways.

The doctoral program, which is designed to be completed in four to five years, is administered by the Institute of Chemical Toxicology and includes participating faculty from the School of Medicine, the College of Pharmacy and Allied Health professions, and the Biological Sciences and Chemistry Departments of the College of Science. Requirements include required and elective courses, laboratory rotations, journal club, and seminars, as well as written and oral qualifying examinations, a dissertation describing the results of original research, and an oral defense of the dissertation. In the first year, students take courses and obtain research experience through rotations in the laboratories of two or more faculty members of their choice. After selecting a thesis adviser (by the beginning of the second year), students continue course work and perform preliminary research toward the degree. Qualifying examinations necessary for admission to Ph.D. candidacy are administered in the spring term of the second year; following admission to candidacy, students engage in research-intensive activities.

— Master of Science

The interdisciplinary master's degree program is not recommended for students new to the program, except under unusual circumstances; it is suggested as an option for students who do not complete the requirements for the Ph.D. degree. Students are recommended for the master's program by the thesis adviser or by the Graduate Program Director. Acceptance in the master's program must be approved by the Graduate Committee.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16.

Scholarship: All course work must be done in accordance with the regulations of the Graduate School governing graduate scholarship and degrees, see pages 21-30.

— Doctor of Philosophy

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Admission requirements for this program include a bachelor's degree from an accredited college, preferably with a background in the basic sciences. An undergraduate honor point average of 3.0 or above ('A'=4.0) is required, as is the General Test of the Graduate Record Examinations (GRE). International students must submit their scores on the Test of English as a Foreign Language (TOEFL). Admission forms for the Graduate School and a waiver of the application fee may be obtained from the Graduate Admissions Committee.

Scholarship: All course work must be done in accordance with the regulations of the Graduate School governing graduate scholarship and degrees, see pages 21-30.

DEGREE REQUIREMENTS: Candidates for this interdisciplinary Doctor of Philosophy degree must complete a minimum of ninety credits, including thirty-two credits in core courses, thirty credits in research and dissertation, and twenty-eight credits in electives.

Required Core Courses (Thirty-two credits)

BCH 7010 — General Biochemistry Lecture	4
BCH 7500 — Prokaryotic Gene Structure and Function	4
BCH 7510 — Eucaryotic Gene Structure and Function	4
PSL 70 10 — Basic Graduate Physiology Lecture I	3
PSL 7030 — Basic Graduate Physiology Lecture II	3
PSL 7640 — Cell Physiology	3
PHC 6340 — Chemical Basis of Pharmacology	3
MTX 7001 — Principles of Toxicology (PHC 7410)	3
MTX 7500 — Molecular and Cellular Toxicology I	3
MTX 7510 — Molecular and Cellular Toxicology II	3

Elective Courses (minimum twenty-six credits): The student's *Plan of Work* will be developed to select courses which provide the detailed scientific knowledge and laboratory experience necessary to develop sufficient expertise in the areas of research which the student will investigate.

Qualifying Examinations (written and oral): A written Qualifying Examination will cover material from all core (required) courses successfully completed to date. An oral examination will be administered to assess the student's comprehension of his/her research project.

Dissertation: A minimum of thirty credits must be elected in MTX 9999.

Assistantships and Research: The program will provide financial assistance through fellowships, graduate teaching assistantships, and graduate research assistantships. Fellowships are awarded to students exhibiting outstanding academic qualifications and the potential for excellence in a research career. All students accepted into the graduate program are considered for financial assistance and no application forms are required. For further information, write: Program Director, Interdisciplinary Program in Molecular and Cellular Toxicology, Institute of Chemical Toxicology, Wayne State University, 2727 Second Ave., Room 4000, Detroit MI 48201.

GRADUATE COURSES (MTX)

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0990-4999). For interpretation of numbering system, signs and abbreviations, see page 509.

7010 Principles of Toxicology. (PHC 7410) Cr. 3

Prereq: CHM 2260 and BIO 1510 or equiv. recommended. Basic concepts and principles of toxicology, including toxicity of major

classes of chemicals (pesticides, solvents, metals) and organ systems (renal, immune, digestive, neuro and respiratory) affected. (F)

7500 Molecular and Cellular Toxicology I. Cr. 3

Prereq: BMB 7010 and PHC 6340 or equiv. recommended. Review of molecular and cellular mechanisms which underlie chemically-induced disease and injury. (Y)

7510 Molecular and Cellular Toxicology II. Cr. 3

Prereq: MTX 7500 or equiv. recommended. Molecular and cellular mechanisms underlying chemically-induced disease and injury. (Y)

7710 Individual Studies in Molecular and Cellular Toxicity. Cr. 1-3 (Max.9)

Prereq: written consent of instructor. Laboratory experience in toxicology studies using state-of-the-art experimental approaches and instrumentation. (T)

7890 Seminars in Molecular and Cellular Toxicology. Cr. 1 (Max. 10)

Assigned readings and student presentations, faculty and outside speakers. (F,W)

8999 Master's Research and Direction. Cr. 1-8

Prereq: written consent of adviser. Research and direction for Master's degree thesis preparation. (I)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16

Prereq: written consent of adviser. Design and pursuit of original laboratory research. (T)

Center for Chicano-Boricua Studies

3324 Faculty/Administration Building; 313-577-4378;

Fax: 313-577-1274; e-mail: aa4636@wayne.edu

Director: Jose Cuello

The Center for Chicano-Boricua Studies (CBS) is a multi-service unit engaged in teaching, research, and service.

The Center plays an important role in the urban mission of Wayne State University. The Center's own mission has four components:

Recruitment, Academic Development, and Retention: It recruits Latino students into the University through a two-year program designed to facilitate the transition between high school and college and to increase retention. It also provides support services for Latino students outside the two-year program.

Research: It promotes research on a) issues relevant to the Latino community, especially in the urban and workplace environment; and b) Latin American history and current issues.

Community Outreach: It creates and fosters the interaction and exchange of personnel and resources between the University and the Latino community; and it serves as a source of expertise on Latino issues to the larger metropolitan community.

University Advocacy: As an advocate for the awareness and advancement of Latino issues within the University, the Center contributes to the University's continuing efforts to create a richer multicultural campus environment.

Scholarships: The Center awards scholarships totalling up to \$100,000 annually to Latino students at Wayne State University.

Developmental Disabilities Institute

Suite 326, 6001 Cass Avenue; 313-577-2654

Director: Barbara LeRoy

The Developmental Disabilities Institute is one of a national network of fifty-four University Affiliated Programs. The institute seeks to contribute to the development of inclusive communities which enhance the quality of life of people with disabilities through a collaborative process of interdisciplinary education, technical assistance, demonstration of exemplary services, research and dissemination.

The Institute has a statewide mission. Staff and faculty engage in technical assistance, training, and research programs throughout

Michigan via collaborative efforts with schools, community agencies, community colleges, and other Universities. The Institute offers a wide range of opportunities for students and faculty to engage in state-of-the-art community-based research, education, and technical assistance.

Students from a wide range of disciplines are provided opportunities for interdisciplinary leadership education and participation in research, training, and technical assistance projects. Students may earn credits for designation as Trainees of the University Affiliated Program. These activities allow students to develop leadership skills and to gain skills in working with an interdisciplinary team. Interdisciplinary Education Programs of the Institute are developed as cooperative efforts between the Institute and academic units throughout Wayne State University and in collaboration with other universities in Michigan. The Graduate Certificate Program offers leadership education opportunities related to community integration and support of persons with disabilities. A number of other programs have been developed with academic programs throughout the University. Interdisciplinary seminars in community integration of persons with disabilities are offered throughout the year.

The Institute has identified the following areas of priority project work: self-determination, family support, early intervention, illness prevention and health, inclusive education, transition from school to adult life, employment, home living and housing, community participation, enabling technology, and multicultural issues. Projects are being developed and conducted in each of these areas.

As an interdisciplinary program, the Institute works collaboratively with faculty throughout the University. Key faculty members function as discipline coordinators providing leadership and coordination between the activities of the Institute and the academic unit. Other faculty function as faculty associates engaging in important project activities associated with the Institute.

The Institute develops activities and projects based on needs of persons with disabilities and the communities in which they live and work. The Community Advisory Council, composed of representatives of twenty-five key statewide organizations, meets quarterly to provide information and assistance to Institute staff and faculty in establishing priorities and evaluating activities.

For additional information, contact: Director, Developmental Disabilities Institute, 6001 Cass, Suite 326, Detroit, MI 48202; (313) 577-2654.

— Graduate Certificate in Developmental Disabilities

The Graduate Certificate Program in Developmental Disabilities is an interdisciplinary curriculum aimed at preparing individuals to assume leadership positions as service providers, policy makers, administrators, or educators, who are committed to the full community inclusion of people with disabilities. The program is a collaborative effort of the Developmental Disabilities Institute and the following academic units: the Department of Communication Disorders and Sciences and the Department of Psychology, College of Liberal Arts; the College of Nursing; the Department of Occupational Therapy, College of Pharmacy and Allied Health Sciences; the vocational rehabilitation counseling program in the Theoretical and Behavioral Foundations division, and the special education program in the Teacher Education division, College of Education; and the School of Social Work.

Admission: Applicants must meet the admission standards of the Graduate School; for requirements, see page 16. Eligibility for this program is limited to persons holding a master's degree from an accredited educational institution or those actively pursuing a graduate degree at Wayne State University. Application forms may be obtained from the Institute.

CERTIFICATE REQUIREMENTS: The Certificate Program consists of a minimum of fifteen graduate credits. Nine credits are earned through completion of three required courses; three additional credits are earned through completion of a supervised field experience in an Institute-approved interdisciplinary setting, and participation in an associated seminar; and the final three credits are

earned through completion of one elective course. If a student is concurrently enrolled in a graduate degree program at the University, no more than nine credits from the Program may be applied toward that degree. Students in the Certificate Program must maintain an honor point average of at least 3.0.

For additional information, contact Susan St. Peter (577-7979), Developmental Disabilities Institute, 326 Justice Building.

Institute of Gerontology

226 Knapp Building, 87 East Ferry; 313-577-2297

Fax: 313-875-0127

e-mail: [iog@geroserver.iog.wayne.edu](mailto:log@geroserver.iog.wayne.edu)

Website: <http://www.iog.wayne.edu>

Director: J.W. Dwyer, Ph.D.

The Institute of Gerontology was created in 1965 by the Wayne State University Board of Governors in response to a mandate of the State of Michigan. Its mission is to discover, synthesize, and disseminate data and information which will 1) increase knowledge about aging and related processes; 2) improve the practice of gerontology and geriatrics; and 3) influence the development and implementation of public policy. The dynamic coalition of researchers and educators from multiple disciplines believes that this mission can best be accomplished by interdisciplinary collaboration and participation in the culturally-diverse urban environment. Five areas of expertise are emphasized: family and intergenerational relationships; health and health care; human development and expression; independence and productivity; and gerontological education.

The Institute a) conducts basic and applied research on individual and population aging among diverse social groups in varying social settings, such as families or institutions; b) collaborates with University faculty and community-based colleagues to stimulate research and teaching on gerontological issues; c) prepares practitioners, researchers, and students to contribute to the field of gerontology; d) disseminates data and information on gerontological issues to diverse audiences (such as older people and their families, researchers, practitioners, and those who influence public policy); and e) promotes the building and strengthening of public and private support for aging-related activities.

The Institute seeks to contribute to an enhanced quality of life for older people, especially those in the Detroit area and in Michigan. It focuses specific attention on understanding and representing urban minority populations in a culturally-sensitive and theoretically relevant manner. A limited number of graduate research assistantships are available each year.

— Graduate Certificate in Gerontology

The Graduate Certificate in Gerontology program is a multidisciplinary program administered through the Institute and the Graduate School. The program is designed to integrate gerontology into the student's primary discipline by providing a substantive foundation in gerontological course work and an intensive internship experience. The certificate may be earned concurrently with a graduate degree, or may be earned independently by students who have completed an advanced degree. Three joint programs also assist concurrent students in earning the certificate along with degrees in the following majors: Master of Science in Community Health Services, Master of Science in Occupational Therapy, or Master of Arts in Recreation and Park Services.

Admission: Applicants must meet the admission standards for Graduate School; for requirements, see page 16. Eligibility for the Graduate Certificate is limited to those holding an advanced degree from an accredited educational institution or those actively pursuing a graduate degree at Wayne State University. There is a three-year time limit in which to meet certificate program requirements. Application to the Program must also be made directly to the Institute.

To apply for admission to the program, or to obtain additional information, call or write: Dr. Elizabeth Olson, Associate Director for Education, Institute of Gerontology, Wayne State University, 87 E. Ferry, Detroit, MI 48202; (313) 577-2297.

CERTIFICATE REQUIREMENTS: Gerontology education is defined as the study of the processes of aging, including the biological, behavioral, social, and public policy aspects of later life. It encompasses both knowledge (gerontology course work) and practice (service to older people and their families). The Graduate Certificate Program is structured to include both of these orientations, requiring completion of fifteen credits of academic course work and three credits in internship experience. When students earn the certificate concurrently with a degree, nine of the eighteen credits may be used to meet both degree and certificate requirements. Each student develops a *Plan of Work* in consultation with the program director. Course work requirements include successful completion, with a grade of 'B' or above, of one approved course from each of the five designated categories, below. Each year, approximately twenty graduate gerontology courses are available in various academic areas, including sociology, psychology, social work, nursing, political science, biology, occupational therapy, recreation and park services, speech, and community medicine. (Other courses may also be offered on an occasional basis which satisfy program requirements.) The internship is a planned, extended learning activity designed to enhance competence in gerontology while offering the opportunity to integrate theory with practice. The internship is planned cooperatively by the student, department adviser (if appropriate), and certificate program director, after the student has completed a minimum of three gerontology courses. Students in the Certificate Program must maintain an honor point average of at least 3.0.

I. Psychological Aspects of Aging and Human Development credits

CEJ 6730 —Counseling of Special Populations: Adults	3
NUR 7410 —Psychosocial Aspects of the Aged	3
PSY 5490 —The Aging Individual in Society	3
PSY 6490 —Developmental Psychology of Death, Dying & Lethal Behavior	3
PSY 7480 —Psychological Development in the Adult Years	3
PSY 7490 —Developmental Psychology of Later Life	3

II. Social and Economic Aspects of Aging

SOC 5760 —Society and Aging	3
SOC 6770 —Sociology of Institutional Care	3
C M 7380 — Gerontological Health Care	3
S W 8640 — Interpersonal Practice in Aging	2

III. Biology, Physiology, and Health Issues in Aging

BIO 7750 —Biology of Aging	3
NUR 7400 —Physical Aspects of Aging	3
HPR 6650 — Health and Recreation Services for the Aged	3
SPC 5170 —Human Communication and Aging	3
C M 7370 —Health, Disease and Aging	3

IV. Public Policy and the Aged

P S 5440 — Politics of the Elderly	4
P S 6430 —Politics and Administration of Entitlement Programs	3
P S 7430 —Health Care Policy in the United States	3
P S 7440 —Public Policy and the Aged	3
P S 7460 —Policy Analysis and Program Evaluation	3
S W 5720 —Social Services for the Aged	3

V. Research and Theory in Applied Gerontology

SOC 8850 — Seminar in Applied Gerontology (C M 7850) (S W 8850)	3
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Internship

SOC 7000 or C M 7998	
— Internship in Geriatrics	3
— Internship in Gerontology	3

Center for Healthcare Effectiveness Research

121 Shiffman Medical Library, 4325 Brush;
313-577-5189; Fax: 313-577-1773

Director: R. Michael Massanari, M.D.

The Center for Healthcare Effectiveness Research (CHER), approved by the Board of Governors in June 1997, is a joint initiative of Wayne State University School of Medicine and the Detroit Medical Center (DMC). The mission of CHER is to serve as a catalyst for

change in the DMC and Medical School by providing a link across multiple disciplines that will facilitate the DMC's constructive response to a changing U.S. health care delivery system.

The Center seeks to provide leadership and guidance in bridging the gap to new models of health care delivery for the DMC. This process is described in terms of 'health effectiveness studies,' but includes a broad spectrum of issues related to a changing delivery system including management strategies, effectiveness studies, outcomes analysis, clinical process improvement, and technology assessment. Center faculty and staff also act as a central resource to School of Medicine clinical investigators from multiple disciplines by providing expert advice on study design and statistical analysis. Resources available include biostatistical and epidemiological expertise. Additionally, the Center supports the development of Integrated Advanced Information Management Systems (IAIMS) that will expedite an allied health delivery system and provide for health services research initiatives. Ideally, this information system will also facilitate new models of education and dissemination of information critical to the practice of medicine in a unified health care system.

To achieve its mission, the CHER seeks to identify and link several unique areas of expertise and access state-of-the-art information systems. Collaborative relationships with other departments at Wayne State University provide access to a broad range of expert knowledge in the areas of epidemiology, biostatistics, informatics, economics, psychometrics, policy analysis, anthropology and management science, as well as collaboration with a full spectrum of clinical disciplines.

Center for Health Research

315 Cohn Building; 313-577-4134; Fax: 313-577-5777

Director: Ada K. Jacox, Ph.D., R.N.

The Center for Health Research facilitates and supports research in the College of Nursing for scientific investigations related to care, health and environmental contexts of nursing and health/illness phenomena. Some current investigations include self-care, transcultural care, teen-age sexual and contraceptive behaviors, smoking cessation behaviors, oncology care, parent-child care, adolescent self-care stress and mental health, substance use/abuse, spouse abuse, and care related to AIDS. Faculty also conduct investigations with colleagues in other disciplines such as psychology, sociology, anthropology, medicine, and social work. Students in the College of Nursing participate with faculty in ongoing research; and the Center sponsors research colloquia by bringing outstanding nurse researchers to the College.

C.S. Mott Center for Human Growth and Development

275 East Hancock; 313-577-1485; Fax: 313-577-8554

Director: Marappa Subramanian

The Mott Center was established in 1973 for the purpose of conducting basic and applied research in the areas of biomedical reproductive science. The Center operates in close association with Hutzel Hospital and the Department of Obstetrics and Gynecology of the School of Medicine as well as other Medical School departments and clinical facilities in the Detroit Medical Center. Given these strategic affiliations, the Mott Center promotes the University's academic and clinical expertise in the biomedical sciences and offers opportunity for interdisciplinary research and service in the field of human growth and development. Some specific objectives of Mott Center research are: to identify causes of birth defects; to develop new programs for the screening and treatment of genetic disorders; to explore new technologies in fertility/infertility and contraception; and to conduct basic research in perinatal/neonatal physiology and adaptation. Additionally, the Center staff may teach specialized courses and workshops and provide possible non-credit training as part of a general effort to serve as a resource for community and national improvement in human health and development.

Humanities Center

2147 Old Main; 313-577-5471

Director: Walter F. Edwards

The Humanities Center was established by the Board of Governors in 1993. Its purpose is to promote and fund faculty and graduate student scholarship in the humanities. The Center particularly encourages interdisciplinary research by bringing humanists in different disciplines together and by encouraging interdisciplinary research projects. The Center's definition of the humanities is that of the National Endowment for the Humanities, namely: comparative religion, ethics, philosophy, archaeology, classical and modern languages, linguistics, jurisprudence, history, literature, history and criticism of the arts, and those social sciences which employ historical and philosophical approaches such as cultural anthropology, international relations, political science, or sociology. Interdisciplinary projects involving two or more of these disciplines are encouraged. The Center is administered by the Vice President for Research or his/her designee, and has an Advisory Board President comprising faculty nominated by faculty, chairpersons, and deans. The Advisory Board annually identifies a theme or topic that is pertinent to the humanistic disciplines and invites research proposals addressing that theme or topic from faculty and graduate students. The Center also provides support for visiting research scholars from national or international universities, and for conferences and publications.

Center for International Business Education and Research

100 Rands House; 313-577-4842; Fax: 313-577-4880

Director: Atila Yaprak

The Center for International Business Education and Research (CIBER) was established by the University Board of Governors in August 1991. Its purpose is to foster interuniversity research programs, advance globalization of students, promote the institution of faculty development programs in multinational firms, infuse cross-national or comparative themes into existing courses, establish linkages with the Detroit-area business community, and enhance internationalization of the entire university community through symposia, conferences, and exchange programs.

CIBER coordinates joint research activities and is spearheading the effort to launch new interdisciplinary courses within the University. While the Center is administered by the School of Business Administration, Center activities and programs involve other schools, colleges and centers of the University as well as other universities and institutions.

CIBER will function as a clearinghouse for information on international business activity, current international business topics, and the interdisciplinary literature which provides the foundation for the international business field. The Center is currently organizing an international business library and has established a discussion paper and lecture series on relevant international business issues. Other activities of the Center include generating student internship and faculty fellowship programs and conducting research for the international business community.

Cohn-Haddow Center for Judaic Studies

442 Manoogian Hall; 313-577-2679

Director: David Weinberg

The Cohn-Haddow Center for Judaic Studies, established in 1988 as a cooperative venture between Wayne State University and the Jewish Foundation of Metropolitan Detroit/United Jewish Foundation, reflects and embodies the fruitful relationship which has long linked the University to the Jewish community of the metropolitan Detroit area. Although the Center is an academic unit of Wayne State, it offers no instruction, awards no degrees, and grants no certificates. It serves, rather, as a University-community resource in Judaica and related areas. As such, it promotes and publicizes course offerings, and it sponsors a broad array of programs and activities related to several of the University's wide-ranging missions — from international conferences, at which leading scholars explore issues at the

cutting edge of current research in Judaica, to smaller symposia, incidental lectures, residencies, and broadly-defined cultural events. In its brief history, the Center has brought some of the world's most distinguished academics to the campus and community and has hosted a number of equally eminent writers, poets, artists and musicians.

Since its inception, the Center has carved a modest but significant niche for itself in the world of Jewish scholarship and letters. Internationally, it has co-sponsored programs with Oxford University and the Universities of London and Tel Aviv. Nationally, it has sponsored activities that have attracted attention and earned respect at leading centers of Jewish learning across the country. Locally, it has helped develop and establish courses and seminars for Jewish teachers and professionals; it has also arranged programming for a broad spectrum of interest groups and various student populations.

Working independently, the Center sponsors regional events which address the needs of the Jewish community. Working cooperatively, it plans programs and coordinates programming activities with neighborhood institutions of higher education to a degree rare among academic centers of Judaic studies. Indeed, its significant and systematically-planned outreach mission reflects the creative vision that makes Wayne State a national leader in the area of university-community relations. In this regard, the Cohn-Haddow Center works diligently and consciously to provide a model for universities and Jewish communities striving to develop and establish comparable units devoted to Judaic studies.

Labor Studies Center

3178 Faculty/Administration Building; 313-577-2191

Director: Hal Stack

The Labor Studies Center is an interdisciplinary teaching, research and service organization focusing on organized labor and its role in contemporary society.

Teaching: The Center's academic component consists of an interdepartmental major in Labor Studies leading to a Bachelor of Arts degree. The major prepares students for a career in the labor movement, related government agencies, the labor relations profession, and graduate study in labor and industrial relations.

Research: The Center conducts applied research for area unions and cooperates with other units of the University in conducting interdisciplinary research in labor and industrial relations.

Service: The Center provides both technical assistance and a wide range of non-credit education and training programs for unions and their members throughout southeast Michigan. The non-credit courses range from six-week courses in labor law and collective bargaining to the two-year Labor School designed to strengthen workers' leadership and communication skills and increase their understanding of the complex issues confronting workers and their unions in contemporary society.

Center for Legal Studies

171 Law School Annex; 313-577-3947

Director: John Friedl; 313-577-1053;

e-mail: jfriedl@novell.law.wayne.edu

The Center for Legal Studies pursues three main objectives: to promote interdisciplinary communication and collaboration among Wayne State faculty who share research and teaching interests in law and law-related fields; to encourage and facilitate interdisciplinary research on topics related to the law; and to promote and enhance opportunities for the interdisciplinary study of law at the undergraduate and graduate levels.

To accomplish these objectives, the Center offers an undergraduate Minor in Legal Studies; promotes combined graduate degree programs in law and related fields; encourages interdisciplinary study by law students and others; provides faculty with information on funding opportunities for law-related research; maintains a faculty interest profile; and sponsors and plans lectures, conferences, and workshops. The Center administers awards for Wayne State faculty research offered through the Richard J. Barber Fund for Interdiscipli-

nary Legal Research. It also sponsors visiting lectures by academic and professional scholars. Through these activities, the Center serves not only the Wayne State academic community, but also the public at large in the Detroit metropolitan area, southeastern Michigan, and throughout the state.

The Center maintains a home page on the World Wide Web which provides information about its programs and activities. (The address is: <http://www.sci.ence.wayne.edu/~law/center.html>) Individuals and organizations interested in the Center's programs and activities are encouraged to contact the Center to obtain more information.

Institute for Manufacturing Research

281 Physics Research Building; 313-577-2970; Fax: 313-577-7743
Director: Robert L. Thomas

The Institute for Manufacturing Research was established in 1986 with funding from the state's Research Excellence and Economic Development Fund. Its purpose is to enhance and extend the University's existing technological strength in areas of manufacturing research which have demonstrated beneficial potential for the state's economy. The Institute conducts interdisciplinary research on materials development, modification, and evaluation; on software for manufacturing and engineering; on strategies for enhancing product reliability; and on machine tools. The Institute combines faculty expertise from the College of Engineering and the Departments of Chemistry, Computer Science, and Physics and Astronomy from the College of Science Institute research activities by these faculty and their students are closely coordinated with interests and activities of industrial participants in the Institute.

Major research facilities available for materials preparation in the Institute include: for superconduction materials, a three-target magnetron sputtering system, a four-source e-beam evaporation system, five furnaces for ceramic and/or single crystal growth, a laser-ablation facility with a 1.2 kJ excimer laser; for diamond materials, a plasma-enhanced CVD system and a laser ablation facility; for catalytic materials, a specially-designed automated reaction system; for polymer composite materials, a supercritical gas processing system with a high-pressure extractor and a composite vacuum press; for semiconductor and multilayer materials and devices, a molecular beam epitaxy system, a class 100 clean room with photolithography; for materials modification, a 400kV ion-implanter, a specially-designed chamber for ion-beam-induced recoil mixing, including a 200 KV ion-implantation accelerator with mass-analyzed beams.

Major diagnostic facilities include: four complete IR thermal wave imaging systems, two laser-based mirage effect thermal wave characterization systems, a 4.75MV Van de Graaff accelerator with Rutherford Back scattering spectroscopic (RBS) instrumentation, a scanning tunneling microscope, a rotating anode powder x-ray diffractometer, vibrating sample and SQUID magnetometers, LEED and Auger UHV surface analysis instrumentation, a variety of spectroscopic instrumentation including microfocus Raman, PIXE, FTIR, GC-MS, UV-Vis, photothermal deflection, and time-resolved spectroscopic imaging, a Weienberg rheogoniometer and an Instron rheometer, an extensive array of vibration and acoustics diagnostics, including a full anechoic chamber, facilities for laser holography, impulse-frequency response instrumentation, VTS shakers, and several servo-hydraulic testing machines, a wide variety of microcomputers, computer workstations, and mainframe computers for software development, several major machine tool development systems, including a 30 hp Warner & Swasey universal turning center, a 6000 rpm MAZAK horizontal machining center, and a 30 hp, 4000 rpm Cross Beta-30 machining module.

Institute of Maternal and Child Health

9D University Health Center; 313-577-1234; Fax: 577-6685
Director: John B. Waller

This Institute promotes interdepartmental approaches to maternal and child health programs through collaborative efforts of Wayne State University School of Medicine faculty in the Departments of Community Medicine, Obstetrics and Gynecology, and Pediatrics, as

well as with faculty and students from other University schools and colleges.

The Institute develops research and program evaluation, and translates the knowledge derived from scientific investigation into practical program implementation. Multidisciplinary demonstration and community-based service programs are designed to reduce infant mortality and to enhance the physical, social, and mental well-being of mothers, infants, and children.

Merrill-Palmer Institute

71-A East Ferry Avenue; 313-872-2408; Fax: 313-577-0995
Interim Director: Rita Casey

The Merrill-Palmer Institute was founded in 1920, under a trust established in the will of Lizzie Pitts Merrill Palmer. Since its inception, it has been an interdisciplinary unit dedicated to the improvement of family life and human development. In 1982 the Institute was incorporated into Wayne State University. In the more than sixty years since its founding, the Institute has become a national resource in the area of child and family study, with an international reputation. Over 3,000 scholars and students from throughout the world have been attracted to the Detroit metropolitan area to participate in the interdisciplinary programs of this center.

Research: The research program of the Institute focuses on several areas. In the area of social structure and the family, issues of particular concern have included the impact of the legal system on family structure and interactions; the causes and consequences of teenage pregnancy; and the effects of the schools and family on the mental health of children. There is also an active research program which focuses on cognitive development, and the effects of early stimulation on later functioning, as well as on the factors related to achievement of literacy.

Service: The service programs of the Institute serve a number of purposes: some are designed as demonstration projects for innovative approaches to problems of children and families; some may serve as vehicles for the institute's research programs; and some provide sites for the Institute's educational programs. The Institute also sponsors a variety of workshops for parents and community leaders, as well as for professionals who are working in areas relevant to its programs.

Kresge Historical Library: This historical collection (including the Groves Collection on Family Life) is a national resource made possible by a grant from the Kresge Foundation. The library is housed in the Walter P. Reuther Library of Labor and Urban Affairs and its collection is available to scholars in the area of child and family studies.

Center for the Study of Cognitive Processes: This center of the Institute brings together faculty members from the disciplines of psychology, linguistics, education, and other fields to promote interdisciplinary research in the study of cognitive processes. Recent projects developed by the Center have dealt with concept formation, language development, and related topics.

— Certificate in Infant Mental Health

The Institute offers an Interdisciplinary Graduate Certificate in Infant Mental Health. The certificate may be obtained concurrently with a graduate degree in one of the following areas: education, nursing, psychology, or social work; or it may be obtained independently by students already having a master's or doctoral degree in one of these areas.

Admission is contingent upon admission to the Graduate School (for requirements, see page 16) and acceptance by the Certificate Admissions Committee. Applications are available through the Institute. Recommendations by students' degree-program department, acceptable honor point average, and a background in child development will be among the criteria for admission.

CERTIFICATE REQUIREMENTS: Students in the certificate program must maintain an honor point average of at least 3.0. Candidates for the certificate must meet the following requirements:

1. *Course Work:* Each student must complete twelve credits in designated graduate courses including courses in infant development,

infant assessment, family dynamics, intervention techniques in infant mental health, and special issues in infant mental health.

2. Field Work: The student will be assigned to an appropriate field setting for a minimum of twenty hours per week over two semesters. This will be a corequisite that will satisfy both the certificate requirement and the field work requirement of the student's degree-program department or college.

Center for Molecular Medicine and Genetics

3216 Scott Hall; 313-577-5323

Director: George Grunberger

The Center for Molecular Medicine and Genetics conducts and fosters interdisciplinary health-related research and research training in two focal areas of molecular biology:

1) Structure and function of macromolecules: chemical synthesis and analytical characterization of nucleic acids and protein products with scientific and commercial potential; and genetically-engineered products with new or improved functions.

2) Structure and function of human viral and other genomes; DNA sequences of genes and their regulatory regions; genetic and physical maps of simple and complex genomes, with emphasis on those important in human health and disease.

The research and research training activities promoted by the Center involve its own research faculty and faculty from at least twelve departments throughout the University. The Center is supported by the University's Research Excellence and Economic Development Fund.

— Master of Science and Doctor of Philosophy in Molecular Biology and Genetics

Graduate programs in molecular biology and genetics are offered in cooperation with the Center for Molecular Medicine and Genetics (CMMG). Students participate in research on gene expression and regulation, including the role of DNA-protein interactions and DNA methylation; the structure, function, and evolution of genes; and molecular cytogenetics, genome organization, and mammalian gene mapping. Considerable emphasis is placed on human and mammalian model systems and on understanding human molecular genetic diseases.

The Molecular Biology and Genetics Program offers programs leading to the Master of Science and Doctor of Philosophy degrees. The doctoral degree is standard in the Program; master's study is recommended only for special circumstances. A joint Ph.D. - M.D. program is also available. Inquiries about these programs should be directed to the Graduate Officer, Molecular Biology and Genetics Program.

Admission to this program is contingent upon admission to the Graduate School (see page 16) and the Graduate Programs of the School of Medicine (see page 283). Applicants to this graduate program should normally have a minimum honor point average of 3.0 and a strong background in one of the chemical or biological sciences. Applicants should provide Graduate Record Examination scores, preferably with an advanced test in either chemistry or biology. International students must be proficient in English and should demonstrate a satisfactory performance on the TOEFL English proficiency examination. Applicants should have three letters of recommendation sent directly to the Graduate Officer, Molecular Biology and Genetics Program. A personal statement is required, and an interview should be arranged with the Graduate Officer, if possible.

Scholarship: All course work must be completed in accordance with the regulations of the Graduate School and the School of Medicine governing graduate scholarship and degrees; for requirements, see pages 21-30 and 283, respectively.

DEGREE REQUIREMENTS: Requirements for students enrolled in graduate degree programs are described in this bulletin beginning on page 27. Required program courses include MBG 7010, 7020, 7030, and 7600. Students will generally select a variety of other courses in the program, should have a basic understanding of bio-

chemistry, and are expected to become computer-literate. Additional courses will be arranged to meet the individual needs of the student. The program will enable the student to demonstrate a basic understanding of molecular biology and genetics, in order to pass a general examination for candidacy for the Ph.D. degree.

Assistantships and Research

The program has graduate assistantships and graduate research positions available for a number of qualified students. All students accepted into the graduate degree program are considered for financial assistance, and no application forms are necessary for this purpose. Students on assistantships are advised to elect no more than twelve credits in a given semester. All students, whether or not they hold a fellowship or assistantship, are required to assist the graduate faculty in teaching and research activities as a component of their educational experience. For more complete information on financial assistance, students should consult or write the Graduate Officer, Molecular Biology and Genetics Program, Wayne State University School of Medicine, 540 East Canfield, Detroit, Michigan 48201.

GRADUATE COURSES (MBG)

7010 Molecular Biology and Genetics. Cr. 4

Prereq: organic chemistry background. Basic aspects of molecular genetics. (F)

7020 Advanced Molecular Biology and Genetics. Cr. 3

Prereq: MBG 7010 or equiv. Advanced core concepts in molecular biology and genetics. (W)

7030 Genetic Analysis. Cr. 3

Prereq: MBG 7010 or consent of instructor. Use of modern genetic analysis to investigate problems in cellular and molecular biology. Lectures and critical analysis of original literature used to illustrate concepts of molecular genetics and genetic engineering in eukaryotic and selected model prokaryotic systems. (B)

7090 Communication of Molecular Biology Data. Cr. 2

Prereq: consent of instructor. Written aspects of collection and communication of molecular biology data. (B)

7120 (PHC 7220) Cell and Molecular Biology of Cancer Development. (C B 7220) (MBG 7120) Cr. 3

Prereq: PHC 7210; BMB 7010 or CHM 7620 or equiv. Detailed analysis of neoplastic cells at cellular and molecular levels. Emphasis on critical genes in cancer development, nature of changes in these genes and how genetic changes result in altered cellular phenotypes that are involved in malignancy. (B)

7140 Nucleic Acids. Cr. 2

Prereq: MBG 7010 and 7020 or equiv., or consent of instructor. Detailed examination of the basic chemical and physical principles that affect the stability of DNA and some of the major reactions it undergoes, both in vivo and in vitro. RNA also treated as appropriate. (B)

7400 Molecular Biology of Cellular Signalling. (C B 7400) Cr. 2

Molecular basis of cell-cell interactions, hormonal interactions, and interactions between different cellular compartments. (B)

7460 Research Training in Molecular Biology and Genetics. Cr. 1-8

Prereq: consent of adviser or graduate officer. Direct participation in laboratory research under the supervision of faculty adviser. Design and execution of experiments; analysis of laboratory data; interpretation of results and their relation to published findings. (T)

7560 Molecular Biology of Cellular Organelles. Cr. 2

Graduate prereq: one year of biochemistry, one course in molecular biology; undergrad. prereq: consent of instructor. Molecular biology, genetics, and evolution of mitochondria and chloroplasts; organelles that contain their own DNA complement; emphasis on mitochondria. (B)

7600 Advanced Human Genetics. Cr. 3

Concepts, problems, and methods of human genetics at an advanced level. (B)

7620 (BIO 7620) Molecular Virology. (MBG 7620) Cr. 3

Prereq: BIO 3070 or equiv. and CHM 6620 or equiv.; or written consent of instructor. A study of the basic principles of virology including virus structure, the nature of virus-host interactions and the molecular biology of virus multiplication. The course will also include workshops on virus structure, virology techniques and presentations by guest speakers. (I)

7640 Principles of Genetic Counseling. Cr. 3

Prereq: admission to genetic counseling graduate program. History and evolution of genetic counseling and how it relates to clinical genetic services within the health care delivery system. Genetic counseling skills such as case preparation, interviewing techniques, and family history assessment; counseling methods. (B)

7700 New Techniques in Molecular Biology. Cr. 1-3

Prereq: MBG 7010 and 7020 or equivalents. Review and extension of recombinant DNA basics. Analysis of cloned genes at the DNA and functional levels, detection of mutations, immunological techniques, application of lower eukaryotes to molecular medicine, computer methods in molecular medicine. (B)

7800 Advanced Medical Genetics. Cr. 3

Prereq: MBG 7600. Review of all aspects of the field. Delivery of clinical genetic services as a team approach centered on the family. (T)

7840 Recent Advances in Molecular Biology and Genetics. Cr. 1 (Max. 4, M.S.; max. 6, Ph.D.)

Offered for S and U grades only. Seminars on unpublished work presented by invited speakers from the scientific community. (T)

7850 Current Topics in Molecular Biology and Genetics. Cr. 1 (Max. 4, M.S.; max. 6, Ph.D.)

Offered for S and U grades only. Current literature in molecular biology and genetics; one student makes oral presentation with student and faculty discussion. (I)

7880 Genetic Counseling Seminar. Cr. 1-6

Prereq: admission to graduate program in genetic counseling. Discussion format; issues relevant to medical genetics and genetic counseling process. Presentations by students and invited faculty. (T)

7890 Research Conferences in Molecular Biology and Genetics. Cr. 1 (Max. 4, M.S.; max. 6, Ph.D.)

Offered for S and U grades only. Required course for Departmental graduate students. Weekly meetings of staff, invited guests and qualified students to learn about and discuss recent developments; one member discusses ongoing research, with a general discussion. (T)

8680 Advanced Topics in Molecular Biology and Genetics. Cr. 1-3 (Max. 12)

Prereq: consent of instructor. In-depth study of concepts and research in specific fields. (I)

8998 Genetic Counseling Internship. Cr. 1-8

Prereq: admission to genetic counseling graduate program. Students work in variety of genetics and subspecialty clinics as well as laboratory settings, under supervision of genetic counselor/geneticist. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of instructor. Open only to departmental M.S. candidates. Student conducts research and prepares written presentation, designed to test specific hypothesis dealing with method, concept, or data. (T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16 (30 req.)

Prereq: consent of doctoral adviser and graduate committee. Student designs and conducts research involving hypothesis testing in relation to methods, concepts and data. (T)

Center for Peace and Conflict Studies

2323 Faculty/Administration Building; 577-3453; Fax: 577-8269
Director: Frederic S. Pearson

The Center for Peace and Conflict Studies was established in 1965, and provides programs devoted to the resolution of conflict in all contexts, from the local community to the international system. Under the faculty director and an interdisciplinary executive committee, research projects are developed that contribute to the exploration of the social and political problems of our time. Conferences and speaker series are organized and occasional papers issued. The Center serves as the base for an undergraduate co-major and minor in peace and conflict studies, and participates in the interdisciplinary Master of Arts in Dispute Resolution program in conjunction with the College of Urban, Labor, and Metropolitan Affairs. The Center director also co-directs the Program in Mediating Theory and Democratic Systems, sponsored by the Hewlett Foundation, one of eighteen national centers investigating theories and approaches to ethnic, racial, gender, or religious dispute settlement. The Center networks nationally and internationally via the Internet and World Wide Web.

Detroit Council for World Affairs: The Council is the community arm of the Center for Peace and Conflict Studies and presents activities for a broad audience on crucial world issues and domestic and international conflict. The Council serves as a link between the University and the community in the greater Detroit metropolitan area. Members of the public may join the Council to participate in Center and Council activities.

Skillman Center for Children

3235 Faculty/Administration Building; 313-577-5225;
Fax: 313-577-8800

Director: Ernestine Moore

Co-Director: Charlene Firestone

Resource Center: 3228 Faculty/Administration Building;
313-577-6562

Assistant: Mary Mihovich

The Skillman Center for Children, created in 1991 by a Skillman Foundation endowment, is located in the College of Urban, Labor, and Metropolitan Affairs. Its mission is to support the work of existing agencies, citizen/parent groups, organizations, and governmental units concerned with the needs of urban children, youth and families in the metropolitan Detroit area.

To implement this mission, the Center: 1) serves as a central resource for information about best practices and model service delivery programs for urban children and families, and makes these resources available to the academic, policymaker, and practitioner communities through the Skillman Center/Urban Families Resource Center; 2) develops information and strategies to address contemporary issues facing urban children and their families; 3) conducts national searches on best practices in identified areas; 4) produces a biannual State of the Child report; 5) disseminates findings and reports via conferences, workshops, forums, publications, and technical assistance; and 6) operates a Resource Center focused on information and materials of interest to policy makers and practitioners which is open to the service delivery community and the University community.

The Skillman Center functions to unite faculty around common themes and research, to share knowledge, to build interdisciplinary networks, and to connect the University community to the service delivery community. It is co-directed by the Center for Urban Studies and the Merrill-Palmer Institute.

Center for Urban Studies

3054 Faculty/Administration Building; information: 313-577-2208

Interim Director: Robert Boyle; 313-577-2208

The Center for Urban Studies responds to pressing urban challenges and opportunities through research, policy and program innovation, training, capacity-building, technical assistance, and partnership-

building. Located in the College of Urban, Labor and Metropolitan Affairs, the Center brings communities, institutions, and leaders together with University faculty and resources to transform the knowledge gained from research into action. It also seeks to participate in defining and influencing national, state and regional urban policy.

The Center is organized into ten specialized program areas: *Urban Families Program*: designs and implements model programs to strengthen parents' ability to nurture and guide their children; *Michigan Metropolitan Information Center*: a university research and service program specializing in urban housing and population issues; *Urban Transportation Institute*: conducts basic and applied research on transportation planning and engineering issues; *Southeast Michigan Business Assistance Consortium*: consists of a cluster of business assistance agencies working together to provide small businesses with a variety of services; the goal of the Consortium is to stimulate the state's economy by helping firms and entrepreneurs manage growth, generate profits, and create and retain jobs; *Urban Linkage Program*: provides Detroit metropolitan area city and community officials with graduate and undergraduate student internships and faculty consultations to help resolve urban government problems; *Survey and Evaluation Services*: provides survey research and program evaluation expertise to a variety of business, education, government and human service agencies throughout the state; *Economic Development Program*: provides research and technical assistance to local governments and community organizations to enhance their economic and community development activities; *Urban Safety Program*: represents a collaboration among Detroit metropolitan area organizations in providing community education to prevent youth crime and to empower neighborhoods; other program activities include conducting applied research on crime and safety issues in Detroit and Wayne County; *Innovation Incubator*: serves as a vehicle for experimentation, development, testing, evaluating and nurturing initiatives; *Community Education Leadership Program*: trains and supports a network of leaders to work across institutional lines within culturally-, ethnically-, and racially-diverse communities.

UNIVERSITY STUDENT SERVICES

Office of the Vice President for Student Affairs

470 Student Center; 577-1992

The Division of Student Affairs supports and supplements the academic and urban missions of the University. The Division's programs for students facilitate intellectual development and critical thinking, nurture positive self-identity, and develop an understanding of the University and society. The programs also encourage interpersonal relationships in a context of diverse, ethnic, cultural, and racial backgrounds. Both through formal and informal means, the Division continually assesses student needs and supports a process of continuous improvement in services.

Among the major duties of the Office of the Vice President for Student Affairs are communication of student attitudes and activities to the faculty, administration and general public; interpretation of University objectives and policies to students; assistance to students in developing their potential through effective use of the University's resources; and the encouragement of intellectual stimulation beyond the traditional classroom environment.

Moreover, this office oversees student enrollment services, student personnel services, the Student Center, student organizations and activities, and a variety of special student programs. It is the responsibility of the office to communicate with the President and his executive staff and to cooperate in the work of their divisions; to participate in development of the University with regard to its program and staff needs; to help students develop a sense of their responsibilities; to coordinate the University student code of conduct; to maintain communication between students and all other groups within the University; and to assure that student viewpoints are represented in all policy-setting deliberations of the University.

The Division administers the University's undergraduate recruitment, and, through a variety of specialized programs and student academic support services, assists students in the successful pursuit of their educational objectives. Programs of the Division also provide opportunities for students, individually or in groups, to voice their questions and concerns and to receive assistance in defining problems and working toward effective solutions. Furthermore, the Division seeks to minimize student frustrations so that the student may gain confidence in his/her ability to accomplish goals through established channels. The Division of Student Affairs is committed to the quality process and promotes the continual improvement of services provided to students and others.

Office of the Registrar

2 West, Helen Newberry Joy Student Services Center; 577-3550

The Office of the Registrar supports the instructional mission of the University and, to a lesser extent, the mission of research and professional service. The Office coordinates, supplements and facilitates the activities of the faculty responsible for the instructional process; administrative services are provided as well to the Vice President of Student Affairs, the Assistant Vice President for Enrollment Services and related offices.

The Office consists of three separate units: Student Records, Registration and Scheduling, and Information Systems. Records is responsible for maintaining students' permanent academic records, processing graduation applications, and issuing transcripts, student grades, and enrollment certifications. Registration and Scheduling is responsible for processing students' registrations and schedule adjustments, accurately assessing tuition and fees, preparing *Schedules of Classes* and Final Examination Schedules, assigning classrooms, and determining students' residency statuses for purposes of computing tuition. Information Systems is responsible for



developing the Office's systems and procedures and preparing and disseminating student enrollment data.

Office of Scholarships and Financial Aid

3 West, Helen Newberry Joy Student Services Center; 577-3378

The Office of Scholarships and Financial Aid (OSFA) annually administers more than \$71 million in financial aid funds from federal, state, university and private sources. Some financial aid programs are need-based; others are non-need-based; and awards are given in recognition of special skills, talents or academic ability. For detailed information about financial aid for graduate students, see the section beginning on page 30.

University Advising Center

2 East, Helen Newberry Joy Student Services Center;
577-2680; 577-8889 for appointments

The University Advising Center's staff members advise pre-professional and other undergraduate non-majors in the Colleges of Fine, Performing and Communication Arts, Liberal Arts, Science, and Urban, Labor and Metropolitan Affairs. In addition, files are maintained for students who consult with the advising staff subsequent to their declaration of major in one of those colleges. Students are seen by appointment except during registration peak periods, when they are seen on a first-come, first-served basis. Using professional advisers, the Center helps students to identify their career goals, explore appropriate majors, select courses, and resolve academic probation issues. The Center also maintains a Study Abroad Resource Center, operates the WS&U orientation program, publishes the student handbook, Perspectives, maintains recommendation files for pre-medical students, and manages the Wayne Excel and Early Academic Assessment programs.

University Counseling and Placement Services

652 Student Center; (313) 577-1141; Fax: 577-0617
<http://www.stuaffrs.wayne.edu>

University Counseling and Placement Services helps students promote individual development in ways which will maximize benefits from their University experience and helps them develop career direction and find ways of coping with problems which interfere with their career and education attainment. It also provides help to students and alumni in defining career and employment goals and assists them in their search for employment opportunities. Further, support is provided to students in enhancing their basic academic skills, study efficiency, and/or special needs associated with their handicaps.

Non-Credit Courses: To implement these goals, non-credit courses in college and career orientation, reading efficiency, and study skills, are offered through this office. These courses (including Reading Efficiency) and the associated staff may be found in the Wayne State University Undergraduate Bulletin.

To meet the many and diverse needs of students, there are three service areas within Counseling and Placement Services: Career Services and Personal Development; Academic Development; and Testing, Evaluation and Research. The following services are provided:

CAREER SERVICES and PERSONAL DEVELOPMENT

1001 (First floor) Faculty/Administration Building;
(313) 577-3390; Fax: 577-4995
<http://www.stuaffrs.wayne.edu>

Personal Counseling, 577-3398,

e-mail: personal.counseling@wayne.edu : This service provides students with special opportunities for consultation about needs or concerns for which individualized help is desired. Any facet of experience that affects a student's educational progress may be explored with the professional counseling staff. Counseling may help students to clarify for themselves their own identity and relationship with the social, educational and occupational world, to explore opportunities for personal and self-esteem development, to set and realize goals and to resolve motivational and other personal conflicts. In addition

to confidential private consultation, a number of psychological education group workshops on common issues are offered, and services are available for emergency situations.

Lesbian, Gay, and Bisexual Services, 577-3398,

e-mail: lesbian.gay@wayne.edu : This service provides various types of assistance to lesbian, gay, and bisexual students, staff, and faculty. Services include: individual, couple, and group counseling for personal and career development; discussion and support groups in which to explore personal concerns and discuss issues with others; educational presentations to classes, student groups, and conferences that address sexual orientation, discrimination, and other issues; information and referral to local, state, and national organizations; and special events and programs throughout the year.

Career Development, 577-3390,

e-mail: career.services@wayne.edu : This service offers a variety of individual and group services to students, staff and faculty. Its main focus is to help students explore career options, clarify their career goals, to link those goals and options with appropriate academic paths, and to provide appropriate referrals. Services include individual one-on-one career counseling, a structured course (UCS 0991 — Design Your Future), printed and electronic career and occupational information, testing and test result interpretation, and career programs and seminars.

Life/Career Development Laboratory, 577-3241 : The Laboratory is a 'stop-in' service which offers interactive computer career-guidance programs, a variety of occupational information resources, referrals to alumni/mentor contacts and to volunteer career experiences, and individual consultations, so students can more realistically determine and accomplish their career and educational goals.

Career Information Center, 577-3390 : This Center contains general information on employing organizations, in both printed and electronic form. Information on job hunting, interviewing, resume writing and government employment, and directories of associations is also available. A collection of video presentations containing information about various organizations, interviewing techniques, and career-related information is available for viewing. Local, regional, and national job listings are available for student and alumni use.

Cooperative Education, 577-3390,

e-mail: coop.education@wayne.edu : Cooperative Education is primarily an undergraduate program which provides comprehensive professional preparation by means of alternating semesters of full-time, paid work experience and full-time class attendance. The program is available to students in Business Administration, Engineering, and selected majors from the Colleges of Liberal Arts; Science; and Fine, Performing and Communication Arts.

Summer Internships, 577-3390,

e-mail: summer.employment@wayne.edu : The Summer Internship program provides opportunities for career-related paid summer intern positions. Summer employment workshops are provided from November through March. Pre-professional positions are available throughout the United States with a wide range of employers.

College Work-Study Employment, 577-3390,

e-mail: college.work.study@wayne.edu : Students who receive College Work-Study (CWS) awards through the Office of Scholarships and Financial Aid can visit the Counseling and Placement Services to find CWS job openings. Placement assistance that matches a student's interests with employers' needs is available.

Student Employment, 577-3390,

e-mail: student.employment@wayne.edu : The Student Employment Program provides part-time employment opportunities to students enrolled at the University. The Program's policies and procedures are described in the *Student Guide to On-Campus Employment*. Part-time jobs are available on-campus through the Student Assistant Program, and off-campus through an open posting process or with the assistance of a placement coordinator.

On-Campus Interviews, 577-3390,

e-mail: recruiting@wayne.edu : Assistance in obtaining full-time employment after graduation is provided. Graduating seniors may increase employment opportunities through interviews with any of several hundred employers who annually visit the campus. Resume

preparation and interview scheduling are available at <http://www.stuaffrs.wayne.edu>.

Job Fairs, 577-3390, e-mail: job.fair@wayne.edu : The Michigan Collegiate Job Fairs are state-wide, one-day job fairs conducted in November and March of each year. The events, jointly sponsored with Eastern Michigan University, attract about 150 varied employers and approximately 2,000 graduates from over fifty Michigan colleges and universities. Specialized on-campus job fairs are provided for graduates in Library and Information Science, Social Work, Nursing, and Pharmacy. Current schedules and specific information are available at <http://www.stuaffrs.wayne.edu>.

Job Bulletin, Resume Referral, and Credentials, 577-3390, e-mail: placement@wayne.edu or job.bulletin@wayne.edu : A Job Bulletin, listing all full-time positions received by Counseling and Placement Services, is available to students and alumni. It is published every two weeks and is mailed directly to subscribers. A resume referral service offers recent graduates and alumni a continuous means for referring their resumes directly to the employers who regularly list opportunities with the service. Master's and doctoral graduates who intend to teach, as well as graduates in nursing, social work, criminal justice and allied health professions may establish a professional credential file, which prospective employers of these majors generally require of applicants.

Additional Services: Annual surveys of Wayne State University graduates are conducted to determine the kind of jobs and salaries obtained by former students and the satisfaction they feel about their jobs. A speakers' bureau is available to community, faculty and student groups, providing information on employment, resumes and interviewing techniques. Michigan Employment Security Agency Job Service representatives are available daily to provide students, alumni, and veterans with information and referral to vacancies which employers have listed with the Job Service.

ACADEMIC DEVELOPMENT

598 Student Center; (313) 577-3165; Fax: 577-3257
<http://www.stuaffrs.wayne.edu>

Reading and Study Skills Learning Center, 598 Student Center, 577-3165, e-mail: learning.lab@wayne.edu : The structured programs offered by this office are designed for students who want assistance in developing the learning process skills necessary to achieve realistic educational goals. Service is provided through courses, individualized laboratory experiences, and through programs coordinated with academic departments or special program offices.

Tutorial Learning Center, 573 Student Center, 577-4045: This office provides both individual and group tutoring to both the general and targeted student populations. Free individual peer tutoring is provided in courses where targeted and other students need educational assistance in understanding content material. Emphasis is placed on introducing effective study strategies along with course content, thus encouraging students to study more effectively as independent learners. Help is also provided to students who wish to organize effective informal study groups both on and off campus.

Supplemental Instruction, 573 Student Center, 577-4045, e-mail: supplemental.instr@wayne.edu : The Supplemental Instruction program provides trained Supplemental Instruction leaders who are employed to facilitate scheduled group study in selected high-risk courses. Individual groups generally meet two or three times each week at convenient times and locations. SI leaders are 'master students' who attend class sessions and coordinate their groups' activities with their supporting instructors.

Educational Accessibility Services, 583 Student Center, 577-1851, Fax: 577-4898, e-mail: ed.accessibility@wayne.edu : This Office is responsible for providing reasonable accommodations for students with disabilities. The Office staff is committed to a philosophy that allows for the full integration and participation of a student with a disability in campus life. Students are encouraged to take advantage of: consultation prior to University enrollment, priority registration, note-taker services, study rooms with adaptive equipment, alternative testing arrangements, scribes, interpreters, and information on community resources.

Women's Resource Program, 580 Student Center, 577-4103, e-mail: womens.center@wayne.edu : This Program offers services for students, staff, faculty, and community persons and is open to men as well as women. Information and referral services include: legal issues, health care, child care, emergency assistance, family services, education and training programs, personal counseling, career information, women's groups, events, legislation regarding women's issues, financial aid and academic research related to women's needs.

Minorities Resource Program, 580 Student Center, 577-4103, e-mail: womens.center@wayne.edu : The Minorities Resource Center offers services oriented to the needs and concerns of various minority populations, including ethnic minorities and alternative lifestyle minorities. Participation is open to everyone. Services include information, resources and referrals regarding University procedures and policies, academic support services, personal and career counseling, professional and graduate school information, scholarship information, and family and personal needs. The biannual publication of the *Minorities Resource Directory* is also a function of this office.

Re-Entry to Education Program: 580 Student Center, 577-4103, e-mail: womens.center@wayne.edu : The Re-Entry to Education Program provides service to people of all ages who have interrupted their formal education and who want additional education, specialized training, or academic degrees. Information is provided on admission, financial aid, child care, social services, legal services, and health care services. Referrals are provided on academic services (mathematics review, writing skills, test preparation, and the like), career information (such as prospective salary, job-market potential, and how to choose a career), and for personal counseling.

Wayne Excel Summer Academy, 573 Student Center, 577-4045, e-mail: summer.academy@wayne.edu : The Wayne Excel Summer Academy is a 'bridge program' which helps 'at-risk' students make a successful transition from high school to college. In addition to intensive study in a core curriculum, students participate in personal development and survival skills activities, tutoring, and employment opportunities related to their chosen career objectives.

TESTING, EVALUATION, and RESEARCH

698 Student Center; (313) 577-3400; Fax: 577-0617

Testing and Evaluation Services: 698 Student Center, 577-3400, e-mail: testing@wayne.edu : Testing and evaluation services are provided to students for entrance examinations, credit by examination via the College-Level Examination Program, qualifying examinations for course selection, proficiency examinations, test-out options for the University General Education Requirements, and tests required by professional associations and for licensing agencies.

Testing and evaluation services for graduate and professional school admission are also available. Testing and evaluation services are also provided to faculty and academic personnel, and include preparation of class reports based on teacher-made tests or qualifying examination data, consultation regarding test programs commercially available, consultation on the construction of course examinations, and the scoring of departmental examinations.

An undergraduate retention database is maintained for the University, and research studies are undertaken to provide background data for planning adequate services and other resources for the Wayne State University student body. The staff is also available to advise individuals with regard to the design and use of survey forms tailored to specific purposes.

Course Evaluation Office, 684 Student Center, 577-0469, e-mail: course.evaluations@wayne.edu : This Office coordinates the Student Evaluation of Teaching project and distributes individual and department-level reports based on data collected during the evaluation process. The Office welcomes questions and/or suggestions about the evaluation process from students and faculty members.

International Services Office (ISO)

5460 Cass Avenue, second floor; 577-3422; Fax: 577-2962
www.iso.wayne.edu/iso/index.htm

The University has one of the largest and most diversified international constituencies in the United States and includes more than 2,000 students from nearly 100 countries. This Office assists international students and other internationals on campus to adjust to the United States and Wayne State University, as well as to learn how to communicate across cultural divisions. The International Services Office provides individual counseling, visa advising, issuance of immigration documents, enrollment and expense letters, information about on- and off-campus employment for internationals (including practical training), emergency loans, cultural excursions, informational seminars, campus and community programming, and special services meeting the needs of the students, scholars, and employees from outside the United States.

Non-Immigrant Visa Students: The Immigration and Naturalization Service (INS) regulations require that all students on temporary visas pursue their studies on a full-time basis at the institution they have been authorized to attend. Undergraduate students (including those with Post-Bachelor's status) must successfully complete at least twelve credits each semester (excluding an approved annual vacation). Graduate students (including those in pre-master's status) must successfully complete at least eight credits each semester (excluding an approved annual vacation). See an International Services Office counselor for details on complying with this and other INS requirements.

All non-immigrant international students must check in at the ISO, complete a data sheet, and show their immigration documents before registering for classes. Transferring F-1 students must obtain a transfer clearance form from their previous school in the United States and must complete transfer procedures as provided in the federal regulations within fifteen days of the first day of class. F-1 students must notify the INS through the ISO of any change in program, including changes in level and field of study. J-1 exchange visitors, including students, may not make a change in level, field, or category without the advance approval of the United States Information Agency (USIA), and may be precluded from change of visa status until a two-year home country residency requirement is met.

Under federal law, all internationals on non-immigrant visa status are expected to maintain current, valid immigration documents and passports and to have adequate financial support during their stay in the United States. The University is required by INS and USIA regulations to file reports in cases of non-compliance with various aspects of immigration law relating to the stay and employment of non-immigrants on campus. The ISO must also report to the USIA on reciprocity of exchanges and other related issues.

Commuting Canadians enrolled less than full time must obtain a border-crossing letter from the ISO and should consult with an international counselor at the ISO to determine the impact of any reduced enrollment and this type of document on future immigration benefits including availability of practical training.

American students, faculty and staff are encouraged to report on their travel abroad to the ISO, to assist the office in providing detailed information on exchange activity on-campus to the federal government.

Scholars, trainees, researchers, faculty, and other employees from abroad are often involved in University programs to promote interchange, mutual enrichment, and linkages between research and educational institutions in the United States and foreign countries. The University provides foreign professors and research scholars with opportunity to engage in research, teaching, and lecturing with colleagues at Wayne State; to participate actively in cross-cultural activities; and to share their experience and increase knowledge about the United States, Wayne State University, and the metropolitan Detroit community.

The International Services Office provides centralized support services necessary to enable and assure the employability of such non-U.S. citizens, and others employed to meet specialized staffing needs, within governmental regulations. Offers of employment to

non-resident aliens must be authorized by the ISO, and only this office may sign immigration forms and petitions related to employment on behalf of the University. All international employees must complete INS Form I-9, 'Employment Eligibility Verification' and present evidence of their identity and employment eligibility at the International Services Office before commencing employment at Wayne State University.

Health Insurance: International students as a condition of enrollment, and all (J-1) exchange visitors and their dependents holding J-2 status are required to comply with the health insurance requirements of the University. Insurance which meets these requirements may be purchased through the ISO. The mandatory international health insurance program is designed to provide international students exchange visitors, and their eligible dependents with continuous insurance protection and access to quality, affordable health care services. The University is mandated by federal law to terminate from its program all exchange visitors and their dependents who do not meet minimum insurance requirements.

Orientation: All international students and J-1 exchange visitors are required to participate in an orientation program offered through the ISO or an approved alternate provider. Orientation is also provided on a voluntary basis for the J-2 dependents of exchange visitors and for all other internationals on campus.

Cross-Cultural Activities: The ISO provides cross-cultural activities both on and off campus, in order to provide the broadest exposure to American society, culture, and institutions. Activities include: field trips, stays with American host families, holiday programs, the International Fair, and a free international coffee hour held in the seventh floor of the Student Center Building every Wednesday from 11:30 a.m. to 1:30 p.m., which provides opportunity for dialogue with and among internationals, American students, and community sponsors.

Office of Military and Veterans Affairs (OMVA)

5460 Cass Avenue, second floor; 577-3422; Fax: 577-2962
www.iso.wayne.edu/omva/index.htm

Veterans and dependents have an excellent resource in this office, which determines their eligibility for such programs as the Veterans Educational Assistance Allowance, and certifies veterans for educational benefits available under the Montgomery GI Bill (Chapter 30), the Reserve GI Bill (Chapter 106), V.E.A.P. (Chapter 32), educational assistance provided to active-duty personnel (under Chapter 30), and other related federal and state government programs. The OMVA also determines the eligibility for federal educational assistance of veterans' dependents, including widows and children of deceased veterans, or of those who are 100 per cent disabled (Chapter 35).

Knowledgeable counselors will be glad to discuss individual educational goals and problems, as well as to meet with groups of veterans. All veterans must contact this office at registration time in order to be certified for their educational benefits.

Standards of Academic Progress: The minimum academic level for continued benefit eligibility is a cumulative honor point average of 2.0 for undergraduate students, and 3.0 for graduate students. Students with a cumulative h.p.a. below the applicable minimum will be placed on probation. Failure to raise the cumulative honor point average to the acceptable minimum after two semesters on probation will result in termination of V.A. benefits. Information on restoration policies and requests should be directed to an OMVA counselor.

Changes in Program: Individuals contemplating a change in program should contact the OMVA. Application to change a veteran's program must be made to the U.S. Department of Veterans Affairs (DVA). Forms for communicating this information are Form 22-1995 for veterans and service personnel, and Form 22-5495 for survivors and dependents; they are available at the OMVA.

Students applying for a second or subsequent change in program must also submit Form 22-8873, Supplemental Information for Change in Program, with their other required change application, along with evidence that the proposed program is commensurate with their aptitudes, interests, and abilities.

Students who have earned 130 credits or above must complete the Excess Hours for Graduation memorandum, signed by the academic adviser, in order to be eligible for veteran benefits.

Changes in Enrollment: Students who change their enrollment during any semester must immediately notify the certifying officer at the OMVA by completing the DVA Eligibility Certification Card ('blue card'). The OMVA must be notified of all course additions and drops, including complete withdrawal from all courses, in order to prevent liability for overpayment of benefits. Students must also notify the OMVA when a course is not completed or unofficially dropped. A student who is receiving benefits and fails to withdraw officially, or who walks away from a class or classes without notifying the OMVA in writing will cause the OMVA to inform the DVA that the last date of attendance was the first day of class.

Advance payment for the initial month or partial month may be obtained by eligible students who register for half-time study or more. The advance payment will be sent to the OMVA. In order to be eligible for an advance payment, students must file their request thirty days prior to the first day of the semester. If a student receives advance payment, and subsequently registers for an amount of credits which makes him/her ineligible for the advance, the check must be promptly returned to the OMVA.

DVA Vocational Rehabilitation: Vocational rehabilitation programs help service-disabled veterans to select, prepare for, and secure work that is in line with their personal goals, interests, abilities and physical capabilities.

DVA Tutorial Assistance: Tutorial assistance is available to help defray tutoring costs for eligible persons. Veterans must be enrolled on a half-time basis or above. Currently, tutorial benefits are paid up to a maximum monthly benefit of \$100, for a maximum total benefit of \$1,200 with no charge against a basic entitlement.

DVA Work-Study Jobs: Part-time student assistant positions are usually available on campus at the OMVA, at the DVA Regional Office, or at a DVA hospital. Full-time students who qualify may work up to twenty hours per week, are limited to 250 hours per semester, and receive the federal minimum wage; these wages, as of the time of printing of this Bulletin, are not subject to federal taxation.

Student Center and Program Activities

Director: 341 Student Center; 577-3482

Assistant Director: 351 Student Center; 577-3444

The Student Center and Program Activities Office is charged with facilities management and program development of the Student Center. Additionally, this office has the stewardship for co- and extra-curricular programs by working in consultation with the Student Council and several advisory boards to insure a broad spectrum of opportunities for student participation in educational, social, recreational, cultural, political and leadership activities.

Student Center

The Student Center serves as the home away from home for thousands of students commuting daily to and from the campus. It is the facility where friends meet to socialize between classes, where many catch up on class assignments, watch television, eat, or spend a leisure hour. To insure the effectiveness of its programs and services, the Center administration meets regularly with an advisory board comprised mostly of students. The major facilities, programs and services of the Student Center include:

Food Service: The Student Center provides a selection of food service options for the campus community. Students, faculty, and staff can dine at 'Little Caesars,' 'Friar Tuck's,' 'Baskin-Robbins,' 'Tubby's,' or 'Taco Bell,' on the first floor, or at the 'A & W' and 'Coffee Beanery' on the lower level. Additional food options are provided by the 'Barnes and Nibble' convenience shop and numerous vending machines located in the Center.

Recreation Room: Recreation facilities are located on the lower level. Billiards, snooker, and table tennis equipment may be rented by the hour. Table games and a variety of video games are also available in the facility.

Service Center, 577-3484: Located in 211 Student Center, the Service Center provides the following services for a fee: typewriter rental, duplicating service, SMART and DOT bus tickets, laminating service, overnight photo-finishing service, international identification cards, mail box rental, Notary service, and State Hall locker rental. In addition, the University Lost and Found, Fax service, South End ad drop box, and student organization mail boxes are located here. Campus enclosed bulletin board postings are also done by the Service Center staff.

Postal Contract Station, 577-4328: Located in the south lobby of the Student Center, the postal contract station offers limited mail services Monday-Friday, 9:00 a.m. to 4:00 p.m. (After 4:00 p.m., stamps are available in the Service Center area.)

Grosberg Religious Center: Various religious denominations have offices on the seventh floor of the building. Programs, personal counseling as well as spiritual counseling are available from the various University chaplains.

Reservations: Located in 333 Student Center, this office reserves rooms for meetings, conferences special programs and other events within the Student Center. It also rents audio-visual equipment and vendor tables as well as reserve space for literature tables, dances, bakesales, and showcases for student organizations. In addition, the Reservations office schedules events held on Gullen Mall and programs such as receptions held in the various campus lounges.

Program Activities

Student Organizations: There are approximately 200 active student organizations including such diverse categories as academic/professional, social action, political, sororities/fraternities, honoraries, ethnic and religious groups, as well as student governments. The *South End*, the official student newspaper, is published daily during the academic year. Student activities advisers are available to assist students who want to organize new student groups. The staff coordinates various campus events such as the International Fair, Student Organizations Day, Commencement Corps, Art and Craft Fair, College Bowl, yearbook, and leadership training.

Student Resource and Assistance Center: The Center, located in 135 Student Center, provides information and programs that will enhance students' experience on campus. Staffed by students, the Center is open from 9:00 a.m. to 6:30 p.m., Monday through Thursday, and from 9:00 a.m. to 3:30 p.m. on Friday, during the fall and winter semesters. Summer hours are Monday through Thursday, 10:00 a.m. to 4:00 p.m.; Friday, 9:00 a.m. to 3:30 p.m. Information available in the Center includes: University academic programs and services; off-campus housing information; campus activities; travel information; campus weekly and monthly calendars; job postings; SMART and DOT bus schedules; Ride-Share Carpool program; community activities; tutor and typist lists. The Center houses Project VOLUNTEER, the campus volunteer program, which offers students a variety of ways to volunteer in the community. The Center also helps sponsor informational and entertainment programs such as Hallo-Wayne, The Dating Game, Wayne Winter Week, and Community Service Fair. For further information, call 577-3568.

Weekly Programs: Each week during the academic year, Student Center and Program Activities offers a variety of different programs for the general student population. These programs include: the Wayne Underground Music Series, on Wednesdays; and Multifor-mity: An Entertainment Series, on Thursdays.

Campus Tours: Tours of the campus may be scheduled through the Program Activities Office (577-3444). They are conducted by volunteer members of the WSU Diplomats and are available on a limited basis.

Athletics, Intramurals and Recreation

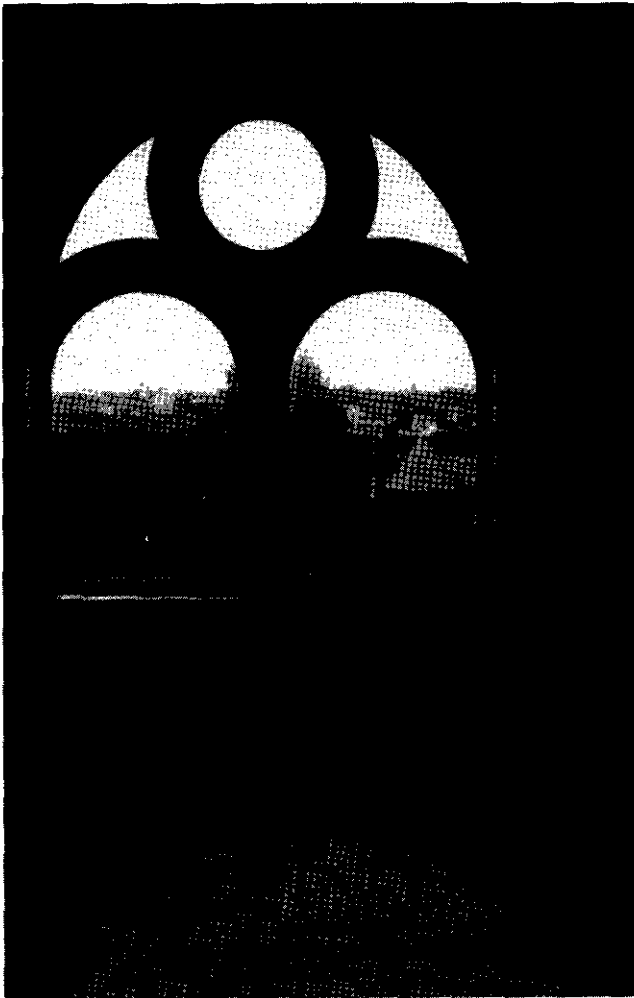
101 Matthaei Building; 577-4280

Athletics: The Department of Athletics, Intramurals and Recreation offers students a full range of sports as athletes and spectators. Baseball, basketball, cross country, fencing, football, golf, swimming and diving, and tennis are offered for male students. Cheerleading is offered to both male and female students. Basketball, cross country,

fencing, softball, swimming and diving, tennis and volleyball are offered for female students. Intercollegiate athletics are housed in the Frederick C. Matthaei Physical Education Center. Tickets at student rates and information on intercollegiate athletics are available at 101 Matthaei Building; 577-4280.

Intramural Sports: Wayne State students are encouraged to participate in a wide range of intramural sports. Among the sports offered are badminton, basketball, touch football, racquetball, soccer, tennis, softball, volleyball and wallyball. Intramural sports are housed in the Frederick C. Matthaei Physical Education Center. Information on the intramural sports program is available at 127 Matthaei Building; 577-4278.

Recreation: The facilities and services of the Frederick C. Matthaei Physical Education Center are available to students, faculty and staff for 'drop-in' recreation whenever the facilities are not scheduled for academic instruction or intercollegiate athletics. Areas available include: swimming pool, handball-racquetball courts, squash courts, weight training room, basketball courts, volleyball court, tennis courts and playfields for touch football, soccer and softball. Identification is required for using indoor facilities; one guest may accompany a student, faculty or staff member after 5:00 p.m. Monday through Friday and during open hours on weekends. Guest fee charges are as posted. For additional information, contact the Matthaei Facility Office at 126 Matthaei Building; 577-4295.



ADDITIONAL UNIVERSITY SERVICES

Division of Computing & Information Technology (C&IT)

5925 Woodward Avenue; 313-577-4778
<http://www.wayne.edu/cit.html>

Computing & Information Technology's mission is to support and enhance the academic and administrative activities of Wayne State University, and to enable the University to be a major force in revitalizing the Detroit metropolitan area. To fulfill its mission, C&IT provides computing, information processing, and communications resources to satisfy the needs of students, faculty and staff, and offers comprehensive support services to help them use technology effectively and creatively. C&IT also makes its resources and services available to individuals and organizations striving to improve the quality of life in the metropolitan area.

C&IT is dedicated to actively seeking input from its customers, understanding their needs and challenges, and working with them to implement appropriate solutions. In its leadership role, C&IT is committed to creating and nurturing the vital information technology environment required for Wayne State University to achieve its vision of excellence in teaching, national prominence in research, and success in revitalizing and redeveloping the community it serves.

Access to WSUnet and the Internet: Wayne State University (WSU) students can access WSUnet, Wayne State's data communications network, and the Internet in the following ways:

from a microcomputer in the David Adamany Undergraduate Library and in many other computer labs in academic departments on campus, or

by dialing in to MichNet, a regional network provided by Merit Network Inc., or to a commercial Internet Service Provider using a microcomputer, a high-speed modem, and Internet communications software (PPP).

Shared Computer Systems and Resources at Wayne State: A number of centrally provided computer systems and servers are available for shared use, including an AIX operating system (IBM's UNIX), which faculty, researchers, and graduate students can use for statistical processing and computer programming, and a CRAY J916 supercomputer, which is available to faculty, post-doctoral students, and academic staff for research purposes.

E-mail and Directory: C&IT also provides free Internet-standard electronic mail and directory services to all Wayne State students and employees by means of a WSU AccessID (see below). Those who don't own a computer can read and send e-mail on campus at the David Adamany Undergraduate Library and many other computer labs in academic departments on campus. Note, however, that a nominal per-page fee is charged for laser printing in public computer labs/areas.

Access to Shared Computer Systems and Servers: WSU departments/units and researchers can establish computing projects with C&IT and obtain userIDs for faculty and graduate students on a shared AIX (UNIX) server or a CRAY supercomputer by calling C&IT's Billing Services Office at (313) 577-4642 weekdays from 8:30 a.m. to 5 p.m. Applications for use of WSU's supercomputer also are available on Wayne State's High-Performance Computing Facility site on the World Wide Web (<http://www.wayne.edu/hpc/>).

To access WSU's e-mail system, electronic directory service, and dial-in network services, students and employees must use a unique WSU AccessID, which C&IT mails to their home addresses in the United States and Canada. Any student who doesn't receive an AccessID in the mail within a month after registering can go to the Adamany Undergraduate Library and obtain an AccessID after showing both Wayne State and picture identification.

Research Support Laboratory (RSL) and Research Consulting: The RSL is a fully equipped computer lab where WSU students can obtain comprehensive support services (from one-on-one consulting to group seminars) on the use of computer technology at any phase

of the research process (design, implementation, analysis, or final presentation); hold a hands-on computer workshop or class free of charge (call 577-4740 to reserve); or lease a selection of site-licensed statistical software. Located in 10 Education Building, (313) 577-5804, the RSL contains: networked Macintosh and DOS/Windows microcomputers and printers (laser, color, and ink-jet); statistical, qualitative analysis, spreadsheet, database, word processing, presentation, graphics, and desktop publishing software that is fully supported by the RSL staff; user manuals for available software; and a collection of research-oriented textbooks. Additional equipment in this lab includes black and white and color scanners, a 6-color plotter, film and CD recorders, and both CD-ROM and videodisc technology. For detailed information about the software, hardware, and current staff at the RSL, go to their Web site (<http://www.rsl.wayne.edu/>).

Help Desks (for using computers and accessing networks):

The C&IT Help Desk provides telephone service at (313) 577-4778 (Mon.–Fri., 8 a.m.– 6 p.m.) and electronic services (at <http://support.wayne.edu/>), in addition to one-on-one consultations by appointment only, to help Wayne State University students:

- access WSUnet and the Internet via MichNet, using a microcomputer, high-speed modem, and Internet communications software (PPP);

- use electronic mail and other shared computer systems and servers at Wayne State;

- use general-productivity software on PCs and Macintosh computers; troubleshoot problems with PCs and Macintosh computers; and

- use or get information about any of the resources or services that C&IT provides.

C&IT's Help Pages on the World Wide Web contain information about how to access and use C&IT's resources and services, purchase microcomputers at educational discounts, download public-domain software or shareware, and submit questions or service requests electronically, in addition to providing links to other helpful Web sites.

C&IT's Network Help Desk is available 24 hours a day, seven days a week, by phone (at 313-577-4746) or on the Web (at <http://www.ucomm.wayne.edu/~noc/noc.htm>):

- to report that a dial-in connection to MichNet was dropped;

- if a network problem is suspected on campus; or

- if you have trouble connecting to WSUnet or the Internet via MichNet or to a shared computer system or server at Wayne State.

Microcomputers and Software: Wayne State students can get information about purchasing microcomputer hardware and software at educational discounts from the C&IT Help Desk or the C&IT Help Pages on the World Wide Web (see above). Students also can obtain public-domain software and shareware to access WSUnet and the Internet, to use networked resources, and for virus protection from the C&IT Help Desk or its Web pages (see above).

Campus-Wide Information Service (CWS): An electronic Campus-Wide Information Service—available 24 hours a day, seven days a week—provides current and potential students with a wide range of news and information about Wayne State University from a growing number of schools, colleges, and divisions and provides links via the Internet to thousands of information systems at other universities, government agencies, and commercial services. C&IT maintains both a World Wide Web (<http://www.wayne.edu/>) and a Gopher (gopher.wayne.edu port 70) component of the University's CWIS. For access information or assistance, or to obtain public-domain World Wide Web or Gopher software, contact the C&IT Help Desk (see above).

Multimedia Computer Classroom: C&IT also provides a multimedia computer classroom for faculty and instructors to use for hands-on computer training or class presentations. Located in a fully enclosed section of the Science & Engineering Library, this computer classroom is equipped with a ceiling-mounted, remote-controlled, color video projector that displays images onto a large screen from a Macintosh or DOS/Windows microcomputer, a VCR, or a CD-ROM.

A remote-controlled 35mm slide projector and a videodisc player also are available. A classroom local area network connects 15 Macintosh and 15 DOS/Windows computers, all with CD-ROM drives, to a shared file server, shared printers and other computing resources, external networks, and the same general-purpose or specialized software available in the lab. To reserve C&IT's computer classroom free of charge, call (313) 993-6684.

Workshops by Request: Classes and other student groups can arrange special-request workshops on Internet-related subjects (World Wide Web publishing, HTML, e-mail, Listserv discussion lists, Usenet newsgroups, etc.) by calling (313) 577-4620. For seminars that pertain to research computing, call the Research Support Laboratory at (313) 577-4740.

Television Transmission Services: C&IT's University Television department transmits the *College Cable Channel*, which provides distance education services for Wayne State and several other colleges and universities in the Detroit area; programs, schedules, and transmits *The Working Channel*, a joint community channel between Wayne State and Detroit's public television station, WTVS/Channel 56; transmits special courses and programs directly to businesses in the area; coordinates reception of satellite teleconferences on Wayne State's campus; and produces and broadcasts satellite teleconferences from campus.

Computing & Information Technology Publications: *Information Technology News*, C&IT's newsletter, is distributed to WSU employees and graduate students and to many computer labs and buildings on campus and in the Student Resource and Assistance Center in the Student Center. *IT News* is available electronically on the Web (http://www.wayne.edu/it_news/). The *Computing & Information Technology Resources & Services Guide*, which is only available electronically on the Web (at <http://www.pass.wayne.edu/R&S-long.html>), contains information about how to access and use C&IT resources and services, descriptions of C&IT departments, and the locations, telephone numbers, and operating hours of C&IT offices and services.

C&IT Telephone Numbers of Interest to Students:

Academic Computing & Customer Services	(313) 577-5515
C&IT Help Desk	(313) 577-4778
C&IT Publications & Information	(313) 577-3614
Computer Accounts (IDs, passwords, etc.)	(313) 577-4642
Computer Classroom Reservations	(313) 993-6684
Distribution (of centrally printed output)	(313) 577-4755
Internet Applications Support	(313) 577-4620
Network Help Desk/Operations Center	(313) 577-4746
Printing (from shared computers)	(313) 577-4768
Research Support Laboratory	(313) 577-5804
Tape Support (for shared computers)	(313) 577-4760
Television & Video Services	(313) 577-1111
TV Broadcast Operations	(810) 547-9370
Workshops by Request (for groups):	
On Internet Applications	(313) 577-4620
On Research Computing	(313) 577-4740

Primary Care Nursing Center

4K, University Health Center; 745-4774

Students are encouraged to use the Primary Care Nursing Center for health care needs including illness, physical examinations, and family planning. Counseling services are also available. X-rays and laboratory tests can be performed in the University Health Center. There are charges to students for these services; most health care plans are accepted. Visits are by appointment, which may be made by telephoning 745-4774.

Housing Office

700 Merrick; 577-2116

This office administers on-campus housing owned by the University and provides information about these units to interested students, faculty and staff. Except for residence in the Chatsworth Tower, Staff members are allowed only a one-year stay and are charged a 10% surcharge.

Wayne State Housing offers a variety of apartment dwellings for individuals and families wanting a twelve-month lease. Families are welcome in all buildings.

The Forest Apartments and the Helen L. DeRoy Apartments are modern, barrier-free high-rise buildings with both furnished and unfurnished apartments. Both buildings feature air-conditioning and permit families with children. Only graduate students, faculty and staff may live in the DeRoy Apartments.

The Chatsworth Tower is an elegant, older building particularly popular with faculty and staff. Most Chatsworth units are air conditioned. Eligibility is restricted to faculty, staff and graduate students.

The Chatsworth Annex offers spacious, unfurnished two-bedroom units. Residents pay their own utility bills except for heat and water.

The Sherbrooke Apartments is an older building rented unfurnished.

Further information and application forms are available upon request at the Housing Office.

Ombudsperson Office

1322 Faculty/Administration Building; 577-3487

Ombudsperson: Victoria Asmar-Anderson

The Office of the Ombudsperson exists to assist students, faculty and staff in solving University-related problems. The Office can help students break through bureaucratic issues, overcome unfair treatment, or obtain consideration of extenuating circumstances by providing information and advice and by facilitating communication. The Office has no authority to change academic or administrative decisions, although it may be able to influence them.

Students may request assistance on academic problems related to admission, advising, degree requirements, discrimination, dishonesty, grades, harassment, records, registration, and teaching; and on nonacademic problems relating to financial aid, housing, parking, payroll, and tuition and fees.

The Ombudsperson's Office investigates appeals and complaints and exercises independent judgment regarding any action it may take. It is not required to fulfill any request or advocate a particular point of view. It will maintain student anonymity if requested to do so. Students, faculty and staff can improve the quality of University service by calling attention to problems they experience.

The Ombudsperson is the Chairperson of the Tuition and Fees Appeals Board (TFAB). The TFAB is charged by the President in Executive Order 96-1 to be the final arbiter of appeals for tuition and related fees. Each appeal is reviewed as an individual case, and cancellation of tuition and/or fees is granted only when circumstances warrant. The TFAB will consider only those appeals that are filed within one calendar year following the last day of the academic term in which the challenged fees were assessed.

UNIVERSITY LIBRARIES

The Wayne State University Libraries support the education and research missions of the University by providing comprehensive support for its instructional and research programs and by sharing its resources with business, industry, the community, and other libraries. The University Libraries' holdings total over three million volumes and approximately 25,000 serials. The WSU Libraries currently ranks forty-seventh among the top 110 research libraries in the United States, according to the Association of Research Libraries (ARL) composite rating.

The Library system includes the David Adamany Undergraduate Library, the Arthur Neef Law Library, the Purdy/Kresge Library, the

Science and Engineering Library, the Vera P. Shiffman Medical Library and its Learning Resource Center at the College of Pharmacy and Allied Health Professions, and the Library Services center at the University Oakland Center in Farmington Hills.

Wayne State University is the host institution for DALNET, a Detroit metropolitan library network. Through terminals in the libraries, users can access records for over eight million volumes representing the majority of holdings in the area's higher education institutions, plus the Detroit Public Library, whose main library is located near Wayne State. In addition, the University Libraries belong to the Michigan Research Libraries Triangle, a partnership with Michigan State University and the University of Michigan libraries. Students may request expedited interlibrary loans from these libraries, that together have over nineteen million books and 122,000 journal subscriptions.

All University Libraries offer reference and information services, interlibrary loan, computer searching, photocopying and library and information literacy programs. The libraries make use of the latest computer technologies to provide state-of-the-art access to instructional and research materials.

The Graduate Student Database Search Program, administered by the Graduate School, will pay up to \$60 worth of computer searching for graduate students requiring information for their dissertations and other research. Students interested in using this program should call the reference desk at the appropriate library.

David Adamany Undergraduate Library

Telephone: (313) 577-8852

<http://www.ugl.wayne.edu>

The David Adamany Undergraduate Library is designed to enhance and enrich the learning experience of undergraduate students. The staff, services, and facilities are all directed toward accommodating the learning experience of first-time users of large university libraries. The Library provides access to over 700 computers, a 24-hour study center, course reserves, and hands-on opportunities for learning to use multimedia and electronic information resources. The Library also houses the Office for Teaching and Learning, the UGE 1000 class, and the Media Collection which includes videotapes and lecture audiotapes.

Arthur Neef Law Library

Telephone: (313) 577-3925

<http://www.lib.wayne.edu/lawlibrary/LLhome.html>

The Neef Law Library is located in the Law School building at the north end of the University main campus. Its collection of over 550,000 volumes makes it the second largest law library in Michigan. The Library subscribes to over 1,500 journals and 1,000 looseleaf services. An official depository since 1971, the Library holds over 100,000 U.S. documents including 3,500 current serials. Students and faculty have access to the two major legal databases, LEXIS and WESTLAW, as part of the educational program of the Law Library.

In addition to complete collections of federal and Michigan legal materials, the Library contains the reported cases of the highest courts of all states and territories, as well as their statutory compilations, digests and encyclopedias. The Library owns major microform collections of U.S. government publications; colonial, state, and territorial session laws; and the U.S. Supreme Court records, briefs, and oral arguments.

Oakland Center Library Services Center

Telephone: (248) 553-6632

The Oakland Center library Services Center provides services such as document delivery, interlibrary loan, instructional sessions, and circulation of materials from main campus libraries. A small collection of course reserves and reference materials is available, as well as access to the databases on LUIS, FirstSearch, LEXIS/NEXIS, and the Internet.

Purdy/Kresge Library

Telephone: (313) 577-4042

<http://www.lib.wayne.edu/purdy/index.html>

The Purdy/Kresge Library, containing the graduate and undergraduate collections for the humanities, social sciences, business, and education, serves the College of Liberal Arts, the College of Education, the College of Urban, Labor, and Metropolitan Affairs, the School of Business Administration, the School of Social Work, the Institute of Gerontology, and the Library and Information Science Program.

The Purdy/Kresge Library contains approximately 1.5 million books, 13,000 current serials, extensive microform collections, and the largest government document collection on campus. Media Services provides classroom support for faculty and staff, photographic services, graphic design services, and film rentals. The Leonard Simons Collection contains rare Michigan history texts.

The Purdy Library also houses the Folklore Ethnic Archive as well as the offices of the Dean of Libraries and Library and Information Science Program. Tours of the collection and facilities are available for classes or other interested groups.

Science and Engineering Library

Telephone: (313) 577-4066

<http://www.lib.wayne.edu/sel/index.html>

The Science and Engineering Library, established in 1944 as a separate library, serves the College of Engineering, the College of Nursing, and the Departments of Biology, Chemistry, Physics, Mathematics, Computer Science, Nutrition and Food Science, Geology, and Audiology/Speech-Language Pathology in the College of Science. In addition, the Library works closely with local businesses to meet their information needs.

The Science and Engineering Library contains over 500,000 volumes and currently receives nearly 3,000 current serials. Special holdings include the System on Automotive Safety Information (SASI) collection, a unique resource for transportation research, as well as the Rouge River Collection, the Dubpernell Electrochemistry Collection, and the Hooker Historical Collection. The Library also houses the Central Technical Services Department of the University Libraries and the primary student computer laboratory of the Computing & Information Technology Division. The Library provides access to a number of specialized electronic resources in the sciences.

Shiffman Medical Library and Learning Resources Centers

Director: Ellen B. Marks

Assistant Director: Sandra Martin

Librarians: Nancy Adams, Linda Draper, Pamela Gannon, Juliet Mullenmeister, Diane LeBar, Keir Reavie, Lothar Spang, Wendy Gang Wu

Telephone, e-mail, and Web:

<http://www.lib.wayne.edu/shiffman/shiffman.html>

askmed@wayne.edu

Circulation and Reserves: (313) 577-1089

Reference and Research: (313) 577-1094

Information Management Programs: (313) 577-6665

Document Delivery: (313) 577-1100

Director: (313) 577-6663

The Shiffman Medical Library, is located on the Detroit Medical Center campus adjacent to Scott Hall. Its collections cover the health sciences except nursing. A small learning resources center to support the instructional programs of the College of Pharmacy and Allied Health Professions is located at the College, in Shapero Hall; a computing lab, with access to all library resources, instructional software, and productivity tools, is available.

Orientation programs, small group workshops and individualized instruction in using the latest information resources are available to

graduate students in the health sciences. Key services in support of graduate education include: seven-day per week reference service, remote and on-site electronic access to the major biomedical databases including MEDLINE, Science Citation Index, the National Center for Biotechnology Information, Dissertation Abstracts with partial text, and an array of electronic journals and other information services to save the student's time. Materials not available in Wayne State libraries are obtained for graduate students free of charge. Access to the libraries of the University of Michigan, Michigan State University, and various specialized collections is also available to graduate students. Students should consult the Shiffman Library's Web site for access to these resources, to sign up for workshops, to ask reference questions, or to make suggestions to the Library. For Library hours, see 'Shiffman Library' in the School of Medicine section of this bulletin.

University Archives

Walter P. Reuther Library; (313) 577-4024

The University Archives, a unit of the College of Urban, Labor and Metropolitan Affairs, was established in 1958 as a research/reference center for the University's historical records. In addition to being the official repository for records of Wayne State and its predecessor institutions, the Archives also collects faculty papers and the records of student and professional organizations which document the development of the University and higher or professional education.

The Archives' holdings of over 6,000 cubic feet include manuscripts, minutes, publications, photographs and reports. There are over 500 current and non-current titles, extensive vertical and biographical files, catalogs from 1868 to present, and the student newspaper from 1918 to present. Topics range from House Un-American Activities Committee, and Michigan Academy of Pharmacy, occupational health and safety, and teacher training, to student activities. Tours of the University Archives and the Reuther Library may be scheduled upon request.

Archives of Labor and Urban Affairs

Walter P. Reuther Library; (313) 577-4024; Fax: 577-4300

www.reuther.wayne.edu

The Archives of Labor and Urban Affairs, a unit of the College of Urban, Labor, and Metropolitan Affairs, enjoys an international reputation as the largest and finest labor archives in the world. In all, the Archives has some 95 million documents in addition to 20,000 books, monographs, union publications and proceedings; 1,000,000 photographs; and 20,000 films and tape recordings. A unique portion of the holdings is the labor journal and newspaper collection, which has nearly 1,600 current and non-current titles dating from the late 1800s to the present.

The Archives was established in 1960 to collect and preserve records of the American labor movement, related social, economic, and political reform groups, and twentieth century urban America. The Archives has since become the official depository for the inactive files of the the United Auto Workers, the Congress of Industrial Organizations, the American Federation of Teachers, The Newspaper Guild, the United Farm Workers, the Service Employees International Union, the American Federation of State, County and Municipal Employees, the Air Line Pilots Association, the Association of Flight Attendants, the Industrial Workers of the World, and many state and local labor organizations. Records have also been received from such groups as the Citizens Crusade Against Poverty, the Michigan Chapter of the American Civil Liberties Union, the Detroit Branch of the National Association for the Advancement of Colored People, the United Community Services of Detroit, United Way for Southeastern Michigan, and New Detroit, Inc. Many individuals who played leading roles in labor and urban affairs have also placed their papers in the Archives.

School of Business Administration

DEAN: Harvey Kahalas

Foreword

The School of Business Administration is a professional school concerned with the theory and practice of business administration. The primary objectives of the School are to provide relevant education of high quality for business administration students, to develop new knowledge through research and to encourage application of its findings. To this end, in addition to their instructional services, the faculty has been a continuing source of notable scholarly publications and it is a special strength of the School that it brings a fine research faculty to teach undergraduate as well as graduate courses.

This School has a tradition of instructional programs exemplifying high standards for both faculty and students as is acknowledged by the accreditation of the AACSB (the international association for management education) for both the baccalaureate and master's degree programs. The School provides relevant, comprehensive business education through programs that serve recent high school graduates as well as more mature student populations. The student body is racially and ethnically diverse, commuting, and often working and raising families. To meet the needs of these students, the School schedules classes throughout the metropolitan area, during both day and evening hours.

The School of Business Administration also recognizes its obligation to community service. As part of an urban university, the School makes a special commitment to foster basic and applied research that will benefit business enterprises. Equally important is the dedication to excellence in the instructional programs that create and support the business leadership that is critical to the continuing revitalization of southeastern Michigan.

Accreditation

School of Business Administration programs are accredited by the Accreditation Council of the American Assembly of Collegiate Schools of Business (AACSB).

Undergraduate Program

The undergraduate program begins after students have acquired an educational foundation in the basic sciences and arts in the first two years of undergraduate work. During the third and fourth years, the student follows a program of study in the School of Business Administration designed to provide professional education. Students may select majors in accounting, finance, business logistics, management, management information systems, and marketing. Degrees of Bachelor of Science in Business Administration or Bachelor of Arts in Business Administration are awarded. For additional undergraduate information, consult the Wayne State University Undergraduate Bulletin.

Graduate Programs

The program leading to the Master of Business Administration degree educates graduate students for professional careers in business administration. The program requires a minimum of thirty-six graduate credits beyond the pre-program foundation requirements. Graduate courses are offered at both on- and off-campus locations during the late afternoon and evening, and on Saturday mornings.

The program leading to the Master of Science in Taxation degree prepares students for entry into professional tax practice in both the public and private sectors. Through the interdisciplinary nature of the program, the M.S. in Taxation candidate learns the accounting, legal, and public policy aspects of taxation. The program requires a minimum of thirty-three credits beyond the pre-program foundation requirements. Courses are offered in the late afternoon and evening.

Graduate Degrees

MASTER OF BUSINESS ADMINISTRATION

MASTER OF SCIENCE IN TAXATION

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MASTER OF BUSINESS ADMINISTRATION

Admission

Admission to any graduate program is contingent upon admission to the Graduate School; for requirements, see page 16. In addition, applicants to the M.B.A. program must comply with the following:

Admission to the Master of Business Administration program is limited to holders of baccalaureate degrees from regionally accredited institutions who demonstrate high promise of success in graduate business study. Several measures of probable success may be included in the evaluation of an applicant; criteria which may be considered are:

1. Performance on the Graduate Management Admission Test (GMAT); see below.
2. Undergraduate grade point averages and the trend of grades earned during undergraduate education.
3. Other indicators of promise of success in the graduate study of business, such as relevant employment and leadership experience.

The Graduate Committee is authorized to review the credentials of each applicant. Appeals of an admission denial may be made in writing to the Director of the Graduate Program, School of Business Administration. Guidelines for formal appeals are available in the Office of the Dean and in the School of Business Administration's Office of Student Services. Final approval of the applicant's admission to graduate study in business is authorized by the Dean of the School of Business Administration or the Dean's designee, upon the recommendation of the Graduate Committee.

The Graduate Management Admission Test (GMAT) must be taken prior to admission to graduate study. This test is a three hour aptitude test designed to measure certain mental abilities and skills important in the study of management. The GMAT includes verbal, quantitative and analytical writing sections administered by a computer. Study guides for the GMAT are available at most university and commercial bookstores.

The GMAT is offered on a continuous basis by appointment at computer-based testing centers throughout North America and at selected international sites. Candidates can schedule a testing appointment by calling 1-800-GMAT-NOW. A list of test centers is provided in the GMAT Bulletin and on GMAT's web site, <http://www.gmat.org>.

Application: A completed *Application for Graduate Admission*, the application fee, and an official transcript from each college or university attended are required before a student can be considered for admission to graduate status.

DEGREE REQUIREMENTS

Candidates for the Master of Business Administration degree must complete one of the following options:

Plan A: *Twenty-seven credits in final-program course work plus a nine-credit thesis with an honor point average of not less than 3.0.*

Plan B: *Thirty-three credits in final-program course work plus a three-credit essay with an honor point average of not less than 3.0.*

Plan C: *Thirty-six credits in final-program course work with an honor point average of not less than 3.0.*

Course work for each plan must satisfy the course distribution requirements stated below. A final oral examination is required for Plan A or Plan B, which gives the candidate an opportunity to demonstrate his/her ability to synthesize and interpret knowledge and to express himself or herself clearly.

When an essay or a thesis is authorized by an adviser, strict adherence to the provisions set forth in an accepted handbook of style is required of all students. Essays and theses must be approved in final

draft form before the end of the semester prior to that in which it is expected that the degree will be granted.

Degrees are granted upon the recommendation of the faculty of the School of Business Administration. Consideration is given both to scholastic achievement and to the standards and rules of the School. All course work must be completed in accordance with the regulations of the Graduate School and the School of Business Administration governing graduate scholarship and degrees; see pages 16-30 and 59, respectively.

Joint J.D./M.B.A. Program

The Joint J.D./M.B.A. Program leads to the receipt of both the Juris Doctor (J.D.) degree from the Law School and the Master of Business Administration (M.B.A.) degree. Applicants to this program must apply to both the Law School and the School of Business Administration. Students must take the Graduate Management Admission Test (GMAT) as part of the M.B.A. application process. Admission to the Joint J.D./M.B.A. Program requires separate approval by both the Law School and the School of Business Administration.

The first year of study is spent in the Law School; after completion of the first year, students may elect one course per semester, up to a total of four graduate courses in the Business School, credit for which is applicable toward the J.D. degree. Students who earned a bachelor's degree in business administration are eligible to apply a maximum of two law school courses (six credits) as M.B.A. elective credit.

Course Distribution Requirements

The master's degree program provides a common body of knowledge in business administration as well as opportunities for advanced specialization in particular areas. The program beyond the common body of knowledge is broad in nature and is directed at general competence for overall management. There are three phases of course work required: foundation, core, and elective. Depending on the student's background, no foundation course work or as many as five foundation courses may be required. All students must complete six core and six elective courses.

— Foundation Requirements

Of the following foundation courses, those at the 6000 level are open only to students who have been formally admitted to a graduate program at Wayne State University — undergraduate, post-baccalaureate, and non-matriculated students are not eligible. (Analogous courses offered at the undergraduate level may be taken to satisfy Foundation Requirements prior to graduate admission. However, once a student has been formally admitted to the M.B.A. program, NO graduate credit shall be allowed for subsequent registrations in undergraduate courses analogous to the Graduate Foundation Requirements without approval of the Graduate Committee or its designee. Information regarding such courses is available in the Office of Student Services, 103 Prentis Building.) **All foundation requirements must be completed before a student begins core and elective courses.**

B A 6000	Financial Reporting and Analysis
B A 6010	Markets and Marketing
B A 6020	Management Principles and Organizational Processes
B A 6090	Quantitative Analysis: Theory and Applications
B A 6100	Analytical Writing for Business ¹

In addition to these courses, one college-level mathematics course and one course in business information systems are required.

While all of the above foundation courses are required, students who have had equivalent course work in their undergraduate programs may be granted waivers of certain foundation courses at the time of their admission to the graduate program. In general, a baccalaureate degree in Business Administration from a regionally accredited institution

1. B A 6100 is waived for students who score at least 3.5 on the GMAT Writing Assessment.

fulfills most or all foundation requirements. However, each applicant's background will be individually examined by the Graduate Committee or its designee to determine if any foundation course work is needed. (The Graduate Committee is chaired by the Dean or his/her designee.) If courses proposed to satisfy the foundation requirements of the M.B.A. program are over six years old, the Graduate Committee may require the applicant to demonstrate proficiency in the subject matter either by interview with a faculty member, by taking an equivalent course, or by taking an equivalent course by examination.

A cumulative honor point average of 3.00 ('B') is required for foundation requirements. No individual grade below 2.0 ('C') is acceptable.

— Core Requirements

The following eight core courses are required of all students:

B A 7000	Managerial Accounting
B A 7020	Corporate Financial Management
B A 7040	Managing Organizational Behavior
B A 7050	Marketing Strategy
B A 7070	Social Perspectives on the Business Enterprise
B A 7080	Cross Functional Business Analysis

B A 7080, Cross Functional Business Analysis, is to be taken in the final twelve credits of the graduate program and only after the completion of the other five core courses. For those students with an undergraduate major in accounting, finance, management or marketing, a more advanced course in a subject area must replace the pertinent core course noted above. Students may petition the Graduate Committee or its designee to make a course substitution appropriate to their professional objectives. This substitute core course cannot satisfy the elective requirements.

— Elective Requirements

The purpose of the elective requirement is to provide depth in a specialization that will contribute to the student's attainment of his or her professional objectives.

Students must take elective courses at the 7000 level or higher. Electives may not exceed eighteen credits in any one subject, including any related core courses.

The written approval of the Dean or his/her designee is required to take any course outside the School of Business Administration.

Listed below are suggested courses recommended for various elective areas.

Accounting

Complete

ACC 7100	Financial Reporting Framework I
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— and at least two of the following:

ACC 7120	Tax Problems in Business Affairs
ACC 7130	Cost Accounting, Control, and Analysis
ACC 7170	International Accounting
ACC 7180	Auditing
ACC 7190	Advanced Auditing
ACC 7260	Theory of Constraints
ACC 7300	Tax Research
ACC 7320	Advanced Tax Problems

Business Economics

FBE 7090	Money and Capital Markets
FBE 7830	Business Conditions Analysis

Entrepreneurship

Complete:

MGT 7660	Entrepreneurial Management
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— and at least one of the following:

FBE 7290	Topics in Finance
MKT 7870	Seminar in Marketing

Finance

Complete either FBE 7220 or FBE 7230 and at least one of the following:

FBE 7090	Money and Capital Markets
FBE 7220	Advanced Managerial Finance
FBE 7230	Investment Policies
FBE 7290	Topics in Finance
FBE 7340	Futures and Options
FBE 7830	Business Conditions Analysis
FBE 7870	International Business Finance

Industrial Relations

Complete at least two of the following:

MGT 7750	Labor Relations and Collective Bargaining
MGT 7770	Union Contract Administration
MGT 7790	Compensation Administration

International Business

Complete:

MKT 7460	International Business
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— and at least two of the following:

ACC 7170	International Accounting
FBE 7870	International Business Finance
MGT 8000	Seminar in Management
MKT 7500	International Marketing Strategy
MKT 7600	The North American Economy

Management and Organizational Behavior

Complete:

MGT 7620	Complex Organizations
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— and at least one of the following:

MGT 7630	Organizational Change and Development
MGT 7660	Entrepreneurial Management
MGT 7680	Executive Decision Making
MGT 8000	Seminar in Management

Management Information Systems

Complete

ISM 7500	Management Information Systems
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— and at least two of the following:

ISM 7510	Data Base Management
ISM 7520	Information Systems Design
ISM 7530	Information Systems and Ethics
ISM 7540	Telecommunication and Networks
ISM 7550	Management of Information Technology

Personnel / Human Resources

Complete at least two of the following:

MGT 7640	Management of Human Resources
MGT 7650	Strategic Human Resources Management
MGT 7750	Labor Relations and Collective Bargaining
MGT 7790	Compensation Administration

Marketing

Complete:

MKT 7450	Business Research and Methodology
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— and at least one of the following:

MKT 7330	Managerial Communication
MKT 7420	Sales Management Problems
MKT 7430	Advertising Management
MKT 7460	International Business
MKT 7470	Consumer and Industrial Buying Behavior
MKT 7500	International Marketing Strategy

MKT 7620	Business Logistics Management
MKT 7700	Management of Retail Enterprises
MKT 7870	Seminar in Marketing

Quality Management

Complete the following:

FBE 7991	Principles of Quality Management
FBE 7992	Methods of Quality Management
FBE 7993	Total Quality Management in Health Care

Taxation

Complete:

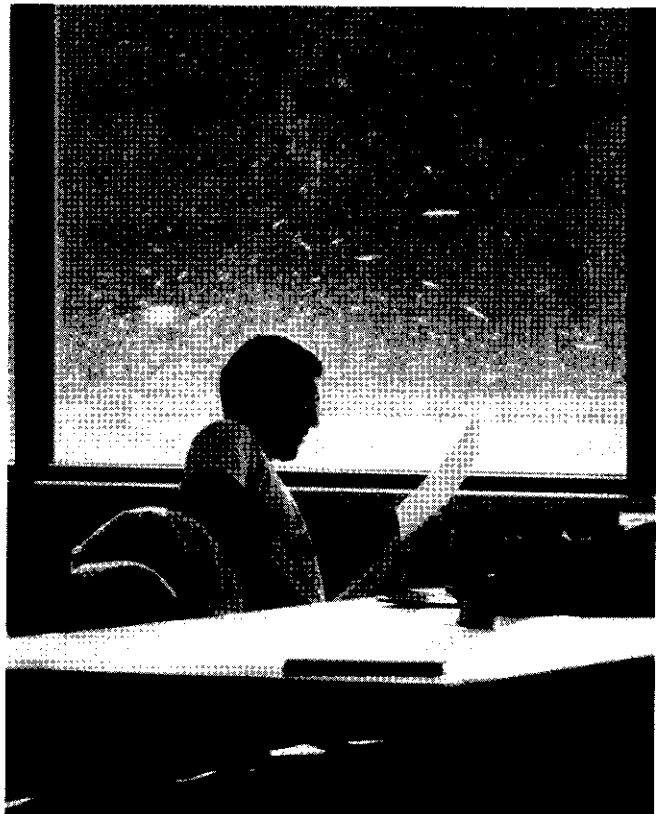
ACC 7100	Financial Reporting Framework I
ACC 7120	Tax Problems in Business Affairs
ACC 7300	Tax Research

— plus one course from the following:

ACC 7310	Tax Communications, Procedure, and Professional Ethics
ACC 7320	Advanced Tax Problems
ACC 7340	Taxation of Partnerships, S Corporations and Their Owners
ACC 7400	Taxation of International Business and Multinational Transactions
ACC 7410	Tax Accounting, Periods and Methods
ACC 7420	Taxation by Multiple Jurisdictions
ACC 7430	Taxation of Exempt Organizations
ACC 7450	Taxation and Business Strategies
ACC 7460	Cross-Border Transactions
ACC 7470	The Limited Liability Company

M.B.A. — C.P.A. Examination Requirements

M.B.A. students who hold a baccalaureate degree in a field other than accounting and who wish to qualify to sit for the C.P.A. examination in the State of Michigan should contact the chairperson of the Department of Accounting (577-4530), or a graduate adviser in accounting as early as possible. While no formal M.B.A. curriculum is offered to meet the educational requirements of the Michigan State Board of Accountancy, an individualized *Plan of Work* can be developed. Generally, such a *Plan of Work* includes more than the minimum number of courses required for the M.B.A.



MASTER OF SCIENCE IN TAXATION

Admission

Admission to any graduate program is contingent upon admission to the Graduate School; for requirements, see page 16. In addition, applicants to the M.S.T. program must comply with the following:

Admission to the Master of Science in Taxation program is limited to holders of baccalaureate degrees from regionally accredited institutions who demonstrate high promise of success. Several measures of probable success that may be included in the evaluation of an applicant include but are not limited to:

1. Performance on the Graduate Management Admission Test (GMAT); see above, under 'Master of Business Administration.'
2. Undergraduate grade point averages and the trend of grades earned during undergraduate education.
3. Licensure and certifications, such as bar admission and certification as a Certified Public Accountant.
4. Other relevant factors such as employment and leadership experience.

The M.S. in Taxation Committee is authorized to review the credentials of each applicant. This Committee is composed of the Chairperson of the Department of Accounting, the Director of the M.S. in Taxation Program, one other member of the graduate faculty of the University, and two representatives of the professional community; it is chaired by the Assistant Dean for Student Affairs. Final approval of the applicant's admission to graduate study in taxation is authorized by the Dean of the School of Business Administration or the Dean's designee, upon recommendation of the M.S. in Taxation Committee. Appeals of an admission denial must be made in writing to the Director of the M.S. in Taxation Program, School of Business Administration. A copy of the Guidelines for formal appeals is available in the School's Office of Student Services.

The School admits first-year classes to the M.S.T. program only at the beginning of the Fall and Winter semesters. Before an applicant can be considered for admission, the following material must be timely submitted:

1. a completed W.S.U. Application for Graduate Admission;
2. an official transcript from each college or university previously attended by the applicant;
3. an official notification of the applicant's score on the GMAT and, if required, the TOEFL. (For information regarding the GMAT, see above, under 'Master of Business Administration.')
4. a photocopy of each professional license or certification held by the applicant;
5. the application fee.

DEGREE REQUIREMENTS

The M.S. in Taxation degree program requires the completion of thirty-three or thirty-four credits in final-program course work with an honor point average of not less than 3.0. Degrees are granted upon recommendation of the faculty of the School of Business Administration. Consideration is given to both scholastic achievement and to the extent to which the candidate has met the standards and requirements of the School. All course work must be completed in accordance with the regulations of the Graduate School and the School of Business Administration governing graduate scholarship and degrees; see pages 16-30 and 59, respectively.

Course Distribution Requirements

The M.S. in Taxation program consists of five categories of courses, as follows:

Foundation Courses are background courses which are required but do not generate credit toward the M.S.T. degree. Applicants who have already earned a degree in business administration or accounting will usually be able to waive most, if not all, of the foundation courses.

Core Courses are five courses providing in-depth coverage of the body of knowledge associated with studies in taxation and tax policy.

Cognate/Concentration Courses are two additional required courses. The choice of these two courses depends on the area of concentration selected by the student.

Electives: M.S. in Taxation students will generally complete nine or ten elective credits (three to five courses).

Capstone Course: When nearing the conclusion of the M.S. in Taxation program, the degree candidate will take ACC 7998, Seminar in Tax Policy.

— Foundation Requirements

The M.S. in Taxation is an advanced degree. Before progressing to the core courses of the program, the student should possess a solid foundation in accounting and economics, as follows:

B A 6000	Financial Reporting and Analysis
ACC 7100	Financial Reporting Framework I
ACC 7120	Tax Problems in Business Affairs

In addition to the graduate-level courses listed above, the following undergraduate-level courses are required:

- (a) A college-level business-oriented computer course, such as ISM 2630, (CL) Introduction to Business Computing.
- (b) A course in macroeconomics, such as ECO 1020, (SS) Principles of Macroeconomics. Completion of B A 6010, Markets and Marketing, will also fulfill this requirement.
- (c) A course in probability and statistics, such as MAT 2210, Elementary Probability and Statistics. Completion of B A 6090, Quantitative Analysis: Theory and Application, will also fulfill this requirement.
- (d) A course in legal studies, such as ACC 3510.

Public Finance Cognate Foundation: For those students who wish to pursue a Cognate in Public Finance, a strong background in economics is also required. The required Cognate courses included in the Cognate in Public Finance have as their prerequisites two upper division undergraduate courses in Public Finance, such as ECO 5500, Public Finance: Taxation and Expenditure Theory, and ECO 5510, Public Choice. Both these courses require prerequisite courses in macroeconomic theory and microeconomic theory.

The graduate level foundation courses listed above are open only to students who have been formally admitted to a graduate program at Wayne State University. Analogous courses offered at the undergraduate level may be taken to satisfy foundation requirements prior to graduate admission. However, once a student has been formally admitted to the M.S. in Taxation program, NO graduate credit will be allowed for subsequent registration in undergraduate courses.

A cumulative honor point average of 3.0 ('B') is required in foundation requirements courses. No individual grade below 'C' (2.0) is acceptable. All foundation requirements must be completed before a student begins Cognate/Concentration courses or Elective courses. Students may begin taking Core courses during the last semester in which they elect Foundation Requirements, subject to the prerequisite and corequisite requirements of the Core courses.

— Core Requirements

The following five Core courses are required of all students, and all are prerequisites or corequisites to students' work in elective courses:

Core Requirements

ACC 7300	Tax Research
ACC 7310	Tax Communications, Procedure and Professional Ethics
ACC 7320	Advanced Tax Problems
ACC 7330	Taxation of Corporations and Shareholders

— and either

ACC 7340	Taxation of Partnerships, S Corporations and Their Owners
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or

ACC 7470	The Limited Liability Company
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For students who have completed undergraduate, graduate and law courses equivalent to Core courses, within the preceding three years with an honor point average of 3.0 or above, one or more advanced courses in taxation may be substituted for Core courses, at the discretion of the M.S.T. Committee.

— Cognate/Concentration Requirements

Regular Program and Special Program: Once a student completes the Foundation Requirements and begins the Core Requirements, he/she must select either the regular M.S.T. program (with a concentration in accounting and taxation), or a special M.S.T. (which includes approved Cognate courses in economics or political science). The special program option must be selected before completion of twelve credits in course work at the 7000 level or above.

Concentration in Accounting and Taxation: Most students will find that the regular M.S.T. program, with a concentration in accounting and taxation, to be the most responsive to their professional needs. Unless a special program involving a cognate area of study is selected by the student before completion of twelve credits in course work at the 7000 level or above, the student will be expected to follow the regular program. Students in the regular program select at least two of the following five concentration courses:

ACC 7400	Taxation of International Business and Multinational Transactions
ACC 7410	Tax Accounting, Periods, and Methods
ACC 7420	Taxation by Multiple Jurisdictions
ACC 7430	Taxation of Exempt Organizations
ACC 7440	Estate and Gift Taxation

Cognate Areas of Study: Some students, such as those with a strong background in the social sciences, may earn an M.S. in Taxation in a cognate area other than accounting. In such cases at least two but no more than four courses may be taken outside of the accounting, taxation, and law disciplines. The following courses are required for students who wish to earn the M.S. in Taxation in the stipulated cognate areas:

Cognate in Public Finance

ECO 7500	Public Finance I
ECO 7510	Public Finance II

Cognate in Public Administration

P S 7300	Public Administration in the United States
P S 7330	Public Budgeting and Finance

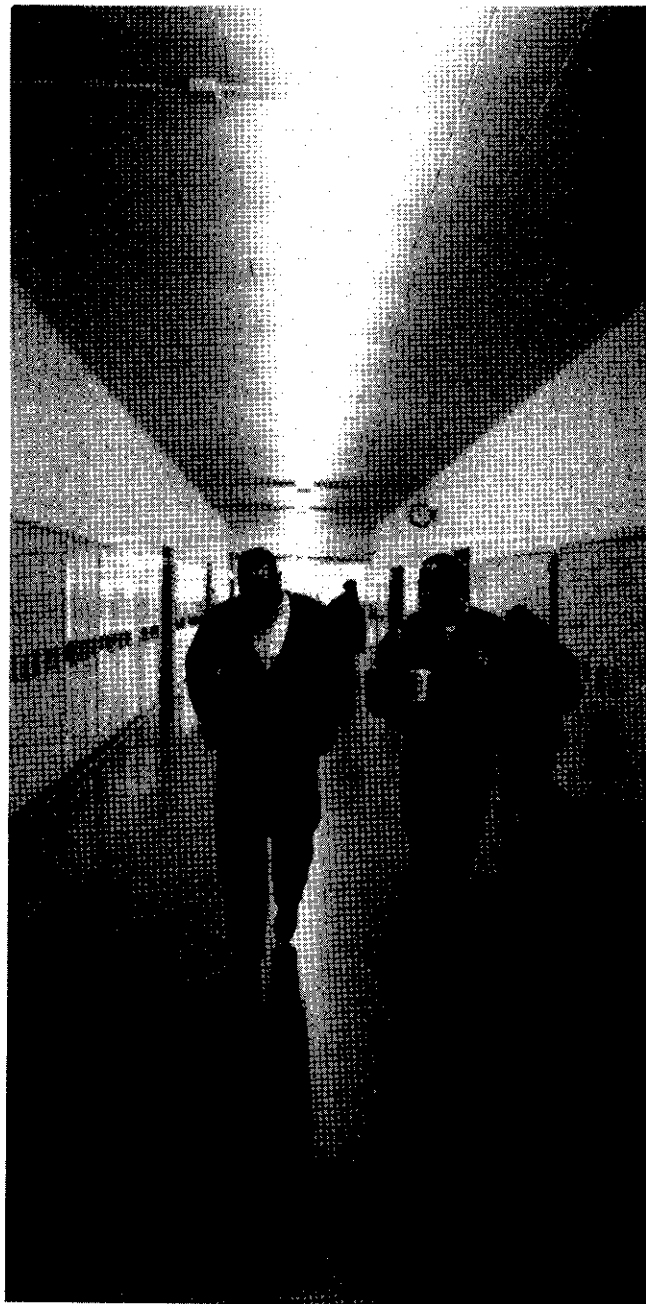
— Elective Requirements

At least three electives are required of all M.S. in Taxation students. A student who has completed the foundation requirements and at least two core courses may begin to take elective courses. Advanced graduate courses in taxation offered by the Accounting Department, such as the five accounting and taxation Concentration courses listed above, may be elected without approval of the student's adviser. Electives outside of the field of taxation, as offered by the Accounting Department, require approval of the adviser; electives from outside the School of Business Administration must also be approved by the school or college offering the courses.

A student may elect Law School courses with the approval of his/her adviser and the Director of Graduate Studies of the Law School. Students should be aware that registration for Law School courses takes place earlier than that for the School of Business Administration and the rest of the University, and that the Law School calendar and the regular University calendar also differ. Students should consult the Law School regarding courses, schedules, and calendar.

— Capstone Requirement

ACC 7998, Seminar in Tax Policy, is the capstone course for all M.S. in Taxation degree candidates; it must be elected as part of the final fifteen credits in the student's program, and only after completion of at least four Core courses. ACC 7998 provides the opportunity to combine concepts developed by students in their professional and educational experience with economic, social, industrial, administrative, and legislative policy considerations.



ACADEMIC REGULATIONS

Graduate students are advised that, in addition to the policies, procedures, and rules specified by the School of Business Administration, other regulations and requirements of Wayne State University's Graduate School may apply. See pages 21-30 of this bulletin.

Academic Standing

Students who have been admitted to the Graduate Program on a 'qualified' or conditional basis are expected to remove that status by the completion of the first twelve credits in course work with a minimum 3.0 honor point average. Failure to do so will result in dismissal from the program.

Students admitted to regular status or those who have attained regular status following a 'qualified' admission, will be given an academic warning at any time their graduate honor point average falls below 3.0. After an academic warning, students will be permitted nine credits to restore their cumulative honor point average to a 3.0 level. Failure to do so within this credit hour limit will result in dismissal from the program. The second (or subsequent) time(s) a student is placed on probation, he or she is subject to immediate dismissal from the School of Business Administration.

Admission to Class

Students who are late registrants or who wish to file a Change of Elections will not be added to any class that meets once a week after the second class meeting. For classes meeting twice a week, no student will be added after the third class meeting. Students may not attend a class for which they are not officially registered, and will not be added retroactively.

Advisers

A faculty adviser is appointed at the time the student selects a concentration area. Students should consult their advisers regarding the selection of courses that might best enhance their educational experience.

Credit will be disallowed for concentration courses taken below the 7000 level or courses taken outside of the School of Business Administration without prior written approval of the Graduate Officer.

Advisers may not modify core course requirements without approval of the Graduate Officer.

The Graduate Officer retains final authority for the approval of all concentration courses.

For advising, students should contact the Office of Student Services at 577-4510.

Application for Degree

Prior to the semester in which a student intends to graduate, a degree application must be filed with the University Records Office, 1 West, Joy Student Services Center. Applications are available from the University Records Office; or from the School's Office of Student Services, 103 Prentiss.

Attendance Policy

Regular attendance is a necessary condition for success in university study. Course content includes classroom lecture and discussion, certain aspects of which may not be covered in examinations, quizzes, term papers, or homework assignments. Each Instructor will announce his or her attendance standards at the beginning of the term.

All candidates for degrees are expected to be present at commencement.

Conduct

Each student is subject to the Student Due Process statute governing student activities and student behavior. Furthermore, it is the responsibility of each student to adhere to the principles of academic integrity. Academic integrity includes the requirement that a student is honest with him/herself, fellow students, instructors, and the University in matters concerning his or her educational endeavors. For example, a student should not falsely claim the work of another as one's own, or misrepresent him/herself so that the measures of one's academic performance do not reflect his/her own work or personal knowledge. Assignments submitted for any class are expected to be original, *not* resubmissions of work submitted in a previous or concurrent class.

If there are reasonable grounds to believe that a student has disregarded the regulations or student responsibilities, he or she may be disciplined. Such discipline may include suspension or dismissal, but no dismissal will be directed without reasonable opportunity for an appropriate hearing, as provided in the Student Due Process statute.

Course Level Requirement

M.B.A. and M.S.T. students are required to take all core and concentration/elective course work in classes reserved exclusively for graduate students. At Wayne State University, these classes are numbered at the 7000 level or above. **A graduate student must obtain the specific written approval of the Graduate Officer prior to registering for a course that is not reserved exclusively for graduate students. Credit will not be applicable to the degree if approval has not been obtained.**

Course Sequencing

The M.B.A. and M.S.T. curricula have been designed to provide logical sequencing of subject matter. This means that students must observe all course prerequisites and limitations, and must complete *all* required foundation courses prior to beginning any core or concentration/elective courses.

The Cross Functional Business Analysis course (B A 7080) is an integrative capstone course that may *only* be taken in the last twelve credits, and *only* after completion of the other seven core courses in the M.B.A. curriculum.

Similarly, the Seminar in Tax Policy (ACC 7998) must be elected as part of the final fifteen credits in the M.S.T. student's program.

Students who do not adhere to these regulations will be administratively withdrawn from the out-of-sequence course(s) and may not be allowed to register for further course work.

Exception: A student taking his/her last foundation course(s) may simultaneously enroll for one or more core courses, if the relevant foundation course or courses for the core course(s) has been satisfactorily completed.

Course Repetition Policy

M.B.A. and M.S.T. students may not routinely repeat courses taken as part of their degree program requirements. While the repetition of certain required courses may be necessary if failing or unsatisfactory grades are earned, this should not be done without first consulting the Office of Student Services (577-4510).

Upon petition by the student, the Graduate Committee may authorize the repetition of two graduate courses during a student's M.B.A. or M.S.T. program, whereby the grade earned in the initial course attempt is deleted from the honor point total and honor point average calculations.

The official University graduate grading policy and policy on repetition of courses may be found in the General Information section of this bulletin, page 5.

Directed Study

A directed study (offered for one to three credits) involves advanced readings and research or a tutorial under the supervision of a faculty member. A cumulative honor point average of 3.0 is required to be eligible for consideration for directed-study work. Students must file an approved proposal form with the required signatures prior to registration. No more than three credits of directed study are permitted in any semester. A maximum of six credits of directed study may be used to fulfill degree requirements.

Enrollment Eligibility

Graduate-level courses offered by the School of Business Administration are open only to students who have been formally admitted to a Wayne State University graduate program or admitted as a graduate guest student. Students having undergraduate, post-bachelor, or any non-matriculated status are *not* eligible to take graduate courses. Graduate business courses include all courses numbered 6000-6090 and 7000 and above. All elections must be taken in accordance with an approved *Plan of Work*.

Grade Appeal Procedure

Students disputing a final grade should first contact the instructor of the course informally. Should the dispute remain unresolved, the student may initiate a formal appeal.

A copy of the School of Business Administration's grade appeal procedure is available in the Office of the Dean, or in the Office of Student Services, 103 Prentis Building.

Non-grade-related grievances should be brought directly to the appropriate departmental chairperson or to the Office of the Dean. Additionally, the University Ombudsperson (see page 51) is available to all students for assistance in the resolution of University-related problems.

'Incomplete' Marks

The mark of 'I' which is not converted to a letter grade within one year from the time it was received will be changed to a withdrawal ('W'), unless *prior to the end of that year* the student requests and the instructor agrees to certify in writing to the University Records Office that additional time is needed to remove the Incomplete.

Maximum Credit Load

A student employed full-time will normally not register for more than six to nine graduate credits. Graduate assistants are required to register for at least eight credits each semester.

Passed-Not Passed Registration

Graduate students may *not* take graduate program requirements on a *passed-not passed* basis.

Plan of Work

All course work must be in accordance with an approved *Plan of Work* on file in the Office of Student Services, 103 Prentis Building. No credit will be granted for graduate courses in business administration taken at Wayne State University prior to admission to the graduate program in the School of Business Administration. **Only the Graduate Committee is authorized to approve changes affecting a student's foundation requirements or core courses.**

Retention of Records by the Instructor

Term papers and examinations shall either be returned to the student or retained by the instructor for a period of ninety days. Thereafter, they may be destroyed. Instructors shall retain grade books for at least five years following the end of a term and instructors who leave the institution shall give grade books for courses conducted during the past five years to their department chairperson. Five years after the end of a course, grade books may be returned to the instructor who has left the institution, or the grade books may be destroyed by the department.

Time Limitation for Program Completion

Students have a six-year time limit to complete all 7000-level requirements. The six-year period begins at the start of the semester during which the student takes his/her first 7000-level course work. Students who expect to exceed the time limitation must file a written request for an extension with the Director of the Office of Student Services. The School reserves the right of revalidation of credits which are over-age. In revalidation cases, the Graduate Committee will set a terminal date for completion of all degree requirements, including such additional requirements as may be prescribed to revalidate the over-age credits.

Transfer of Core and Concentration/Elective Courses

Graduate transfer credit for core and concentration/elective courses from either a Wayne State University graduate program or a graduate program at another institution is not routinely granted. A student must have earned a Bachelor of Business Administration degree to be eligible for transfer credit. A petition for transfer credit must be initiated by the student in the form of a letter to the Graduate Committee, prior to the completion of the first twelve credits in graduate course work. To be eligible for consideration for transfer of credit, the following conditions must be satisfied:

1. The course must have been taken at a regionally accredited college or university;
2. The course must have been taken in a class reserved exclusively for graduate students;
3. A letter grade of 'B' (3.0) or higher must have been awarded; passed-not passed credit is not acceptable.
4. The course must be relevant to the student's *Plan of Work* as approved by the Graduate Committee.
5. The course may not be more than five years old.
6. The course cannot have provided credit toward a prior degree.

A maximum of six semester credits (normally two courses) may be considered for transfer credit. In addition to evidence regarding the above six conditions, the student must submit additional supporting materials concerning any proposed transfer course. Course syllabi, examinations, class notes, texts, and the like constitute such materials. Waiver of Course Prerequisites

Requests for waiver of course prerequisites are not routinely granted. Waiver requests must be made in writing to the Graduate Committee and must include full documentation of the case. No waiver will be granted if the supporting documentation consists solely of professional experience proposed in lieu of course work.

Waiver of Foundation Courses

Students are allowed to waive foundation course requirements based on equivalent course work taken at a regionally-accredited college or university. A grade of 'C' (2.0 h.p.a.) or above must have been earned in this course work. Normally these waivers are granted after review of the student's transcript(s). Students who believe additional waivers are warranted must submit evidence of course equivalency, including course syllabi, class notes, and textbooks.

Withdrawals from Class

Students should consult the instructor as to his/her policy on withdrawal from class, as well as the General Information section of this bulletin, page 24, for the University policy on withdrawal. Withdrawal and tuition refund policies are also included in the University *Schedule of Classes*, published in advance of each semester.

FINANCIAL ASSISTANCE

For general sources of graduate financial aid, see the section on Graduate Financial Assistance, beginning on page 30. Information pertinent to this School appears below.

Scholarship Awards

The scholarships listed below give preference to students in the School of Business Administration. The School of Business Administration, through its scholarship committee, a departmental committee, or a joint committee of the School and an external organization can be directly involved in selecting the recipients of certain scholarship awards. The School is also asked to nominate student candidates for certain other scholarship awards though it may not participate in the selection process.

Alumni/Corporate Scholarship. Designated for business administration students demonstrating high academic achievement, leadership, and service. Funded through contributions.

Richard H. Austin Excellence in Accounting Scholarship. Established to recognize potential abilities and academic achievements of minority accounting students.

Stanton P. Bockneck Memorial Scholarship. Designated for students demonstrating high academic achievement in accounting.

Abraham J. Brihloff Scholarship: Beta Alpha Psi Excellence in Writing. This award is given in honor of Abraham J. Brihloff to the undergraduate and graduate accounting students demonstrating outstanding manuscript writing.

Dana Corporation Foundation Minority Scholarship: Established in 1989, this award is designated for minority business administration students demonstrating high academic achievement.

Farmer's Insurance Group of Companies Scholarship. Designated for students interested in insurance careers.

Sidney and Jewel Fields Scholarship. Created by the Morris and Emma Shaver Foundation, this award was established in 1988 to honor the forty-two years of service and friendship that Sidney and Jewel Fields have given to the Schaver family.

Sam and Leonard Fink Memorial Scholarship. Awarded to business administration students demonstrating high academic achievement.

Hillel Foundation Scholarship. Funded by the B'nai Brith Hillel Foundation for award to an outstanding Jewish accounting student.

Charles Hagler Scholarship in Public Relations. Designated for students demonstrating high academic achievement with a career interest in public relations.

George R. Husband Scholarship. Awarded to accounting majors demonstrating high academic achievement.

Wilfred Kean Memorial Scholarship. Established in 1989 in memory of alumnus Wilfred Kean. Designated for a student enrolled in evening classes in the School of Business Administration.

Bruce E. Mullican Memorial Scholarship. Established in 1984 in memory of M.B.A. alumnus Bruce E. Mullican. Designated for students with demonstrated interest and involvement in small business management.

Peat Marwick—Wayne State Alumni Scholarship. Funded solely by Wayne State alumni with Peat Marwick and Co., this award is designated for accounting majors demonstrating high academic achievement.

Aubrey C. Roberts Memorial Scholarship. Awarded to accounting majors demonstrating high overall scholarship and outstanding academic achievement in accounting subjects.

Graduate Assistantships

A limited number of graduate teaching and research assistantships are available. For further information the student should write to the department chairperson in his/her area of interest, or to the Office of Student Services, School of Business Administration, Wayne State University, Detroit, Michigan 48202.

Recognition Awards

Distinguished Student Award. Established in 1981, this award is granted annually to the student who has made the greatest contributions to the School of Business Administration and to the University.

Financial Executives Institute Award for Excellence in Scholarship. Awarded annually to the business administration student in the December graduating class with the highest honor point average.

The Wall Street Journal Student Achievement Award. Awarded annually to the business administration student in the May graduating class with the highest honor point average.

Additional Assistance

Several assistance programs are administered by and the Office of Scholarships and Financial Aid, and by the Graduate School (4302 Faculty/Administration Building; 577-2172). The Office of Scholarships and Financial Aid (3 West, Joy Student Services Center; 577-3378) assists students enrolled in degree programs on at least a half-time basis, who do not have sufficient personal or family financial resources to attend the University. See the section on graduate financial assistance, page 30.

The following opportunities may be of special interest to students in the School of Business Administration:

Graduate Professional Scholarships: The Graduate School sponsors one competition for Graduate-Professional Scholarships for each academic year. Scholarships cover tuition for the full academic year (fall and winter terms) for qualified applicants pursuing graduate (master's or Ph.D.) or advanced professional (Ed.D., M.S.W., Pharm.D.) degrees in all University programs. Awards are available to both full-time and part-time students. Students receiving a full-time award receive tuition coverage up to twelve graduate credits per term and are required to enroll in a minimum of eight graduate credits per term. Students receiving a part-time scholarship receive up to six graduate credits per term.

Students holding graduate teaching or research assistantships, or other tuition-paying fellowships, internships, traineeships or scholarships, and salaried or full-time employees of Wayne State University are not eligible for these scholarships. Additional information and application forms are available from the Scholarships and Fellowships Office of the Graduate School.

Fulbright-Hays Grant for Graduate Study Abroad: These grants provide the opportunity for graduate study or research and for professional training in the creative or performing arts. For additional information and applications, contact Dr. Henry Pratt, Office of the Provost, 4107 Faculty Administration Building; 577-3208.

Women of Wayne Alumni Association Scholarships: Each semester the Women of Wayne Alumni Association offers a small scholarship to part-time women students. The scholarship provides tuition assistance for one course per semester. Additional information and application forms are available from the Women's Resource Center, 575 Student Center, Wayne State University, Detroit, MI 48202; (313) 577-4103.

Urban Studies Internships: The Center for Urban Studies offers internships for graduate students in academic disciplines related to urban affairs. Interested students should contact the Center at 3049 Faculty/Administration Building, Wayne State University, Detroit, MI 48202; (313) 577-2208.

SUPPORT SERVICES and ORGANIZATIONS

Office of Student Services

The Office of Student Services is responsible for credential evaluation, admissions processing, advising, and graduation certification of business administration students. In addition, Student Services personnel prepare and distribute the Plan of Work for students enrolled in graduate and undergraduate programs.

Any student seeking academic, vocational or personal counseling should make an appointment to see a member of the counseling staff: 577-4510.

Bureau of Business Research

The Bureau of Business Research supports faculty research, collects and disseminates business and economic information, facilitates the procurement of grants and sponsored research and provides professional services to the community.

Center for International Business Studies

The privately-funded Center for International Business Studies (CIBS) is the focal point of the School's instructional and research programs in the rapidly expanding international business area. CIBS's Director may be contacted at 577-4842.

Communications Laboratory

The Richard W. Marr Communications Laboratory provides an exciting, modern instructional facility utilized in many business administration courses. Students have an opportunity to videotape, review and critique speeches, presentations and panel discussions required in their course work.

Microcomputer Facilities

The School of Business Administration has established six modern microcomputer laboratories with a total of 135 work stations in the Prentis Building and Business School Annex. Four serve as microcomputer classrooms, and two labs are designated for student walk-in traffic.

Students have access to leading-edge technology, including laser printers, University mainframes, the library information network, a color printer, a color plotter, IBM and Macintosh scanners, and databases stored on CD-ROM.

Over 800 sets of software representing more than thirty different software packages are available. The microcomputer laboratories are open to business students seven days per week, providing students with access during both day and evening hours. Additional microcomputer facilities are also available at main campus and extension center locations.

Professional Development Division

The Professional Development Division (PDD) is the non-credit instructional component of the School of Business Administration. The PDD's primary mission is to meet the education and training needs of the greater business community by offering a variety of seminars, workshops, and other special programs.

The PDD also regularly conducts a series of programs focusing on the starting and operating of a small business. Additionally, a wide range of instructional programs of a professional nature are made available to the community.

Professional Development Division programs focus on problem solving, organizational productivity, informational updating, and skill development. Programs are tailored to specific audiences, with instructors chosen from the academic, consulting, and business communities who have experience and expertise in the field. The

Assistant Dean of the Professional Development Division is Dr. Raymond Genick: 577-4353.

Small Business and Marketing Programs

Small Business Services (SBS) focuses on the needs of potential and existing small business owners by offering two practical, step-by-step programs on how to start and run a small business. 'Starting a PROFITable Small Business' concentrates on the issues facing the aspiring entrepreneur such as: developing a business plan, pricing a product or service, and finding sources of financing. 'Running a PROFITable Small Business' helps the established small business owner develop a more prosperous enterprise by addressing problems such as increasing sales, controlling inventory and overhead, and reducing taxes.

On a national level, SBS offers the Small Business Affiliate Program, which annually trains accountants/consultants from around the country to instruct our small business programs in their own protected territories. SBS currently has seventy affiliates. For more information on Small Business Services, please call (313) 577-4353.

Small Business Technical Assistance Services is a program that serves the needs of the small businessperson/entrepreneur through one-on-one counseling, with emphasis on the development of business plans, cashflow projections, market research, personnel planning, and many other aspects of operating a business. Numerous training programs offer in-depth information on a variety of subjects pertaining to starting and managing a business. For further information, call (313) 577-4176.

The Procurement Technical Assistance Center provides eligible business clients in the Detroit area with the marketing and technical assistance needed to sell their goods and services to the Department of Defense; it also educates small business owners on marketing opportunities in the public sector. Information on government contracts, as well as educational training programs and guidance over the course of the contract from bid preparation to obtaining payment, is available. For further information, call (313) 577-4850.

The International Business Development Center (IBDC) helps other countries develop small business and management programs that include training and counseling. In recent years, IBDC has established centers in Eastern Europe, the former Soviet Union, and the Middle East, including: the Institute of Modern Industry, Prague; Liviv Institute of Management, Ivan Franco University, Ukraine; Krasnodar, Russia; Kuban State Polytechnical University, Novorossiysk, Russia; and Hebron University, Hebron, West Bank. For further information, call (313) 577-4176.

Placement Services

The School of Business Administration works with the University Placement Services office to assist students in finding employment both while going to (1001 Faculty/Administration Building) school and upon obtaining their degrees. Prospective employers visit the University twice each year to recruit graduating seniors and M.B.A. students for positions with their firms. Career counseling and other placement services, including a career/placement library, are also available for business administration students. Employment opportunities are posted on bulletin boards and in showcases in the Prentis Building.

Student Organizations

The MBA Association was established in 1981. This organization is designed to recognize outstanding M.B.A. students and to facilitate the academic and professional development of the graduate business student population.

Beta Gamma Sigma is the national honor society for students in business administration. The Wayne State chapter was installed in national membership in March 1979. Beta Gamma Sigma is the only scholastic honor society recognized by the American Assembly of Collegiate Schools of Business, the major accrediting body for schools of business administration. Election to membership in this honor society is the highest scholastic honor that a student in business administration can achieve. To be eligible for membership, stu-

dents must rank in the upper five percent of their junior class, or the upper ten percent of their senior class, or rank in the upper twenty percent of those receiving master's degrees. Membership is by invitation only.

Alpha Kappa Psi, the oldest national professional business fraternity, established a local chapter at Wayne State University in 1941. The fraternity seeks to enhance the personal and professional development of its members through a wide variety of activities, including frequent interaction with the business community.

The American Marketing Association is an organization dedicated to the advancement of the science of marketing. Collegiate chapters promote professionalism and practical education for marketing students through exposure to, and assistance from, practitioners of the discipline.

The American Production and Inventory Control Society (APICS) is a professional association whose goal is the professional education and development of its members in the field of production and operations in a manufacturing or service organization. APICS members attend a variety of seminars, workshops, tours, and conferences in which practitioners in the field sponsor and counsel students.

The Association of Black Business Students was formed in the fall of 1967 to better prepare students for the business world by providing an environment for professional growth and development, through the encouragement of interaction among business students and with the business community.

Beta Alpha Psi is a national scholastic and professional accounting fraternity open to qualified students who have declared a concentration in accounting and to full-time faculty of the Accounting Department. The fraternity objectives include: the promotion of the study and practice of accounting; the provision of opportunities for self-development and association among members and practicing accountants; and the encouragement of a sense of ethical, social and public responsibilities.

The Business Marketing Association (BMA) is a national organization consisting of over 5000 members who hold various positions throughout the industry of business-to-business advertising and communication. The Wayne State chapter members benefit by exposure to opportunities within the advertising industry, gaining practical experience, and developing professional methods and techniques within the field. The BMA also provides opportunities for scholarships, internships, and chapter competition.

Delta Sigma Pi, an international professional fraternity in business administration, organized a local chapter at Wayne State University in 1949. The Wayne State Chapter seeks to enhance the educational, social, and professional experiences of its members through association with other students, faculty, and members of the professional business community.

The Financial Management Association provides its members with a better understanding of the field of finance and develops relationships with practitioners in the Detroit metropolitan area. The club currently works with the National Investor Relations Institute, the Financial Analyst Society and the Economic Club of Detroit.

Institute of Management Accountants is a professional organization for promotion of the development of accounting students who plan careers in management accounting. Student chapter members participate fully in local professional chapter activities, sharing ideas and knowledge with experienced management accountants.

The International Business Association was formed to promote an understanding of international business practices through programs and information dissemination for students. The organization aims to establish interaction between business students and the international business community.

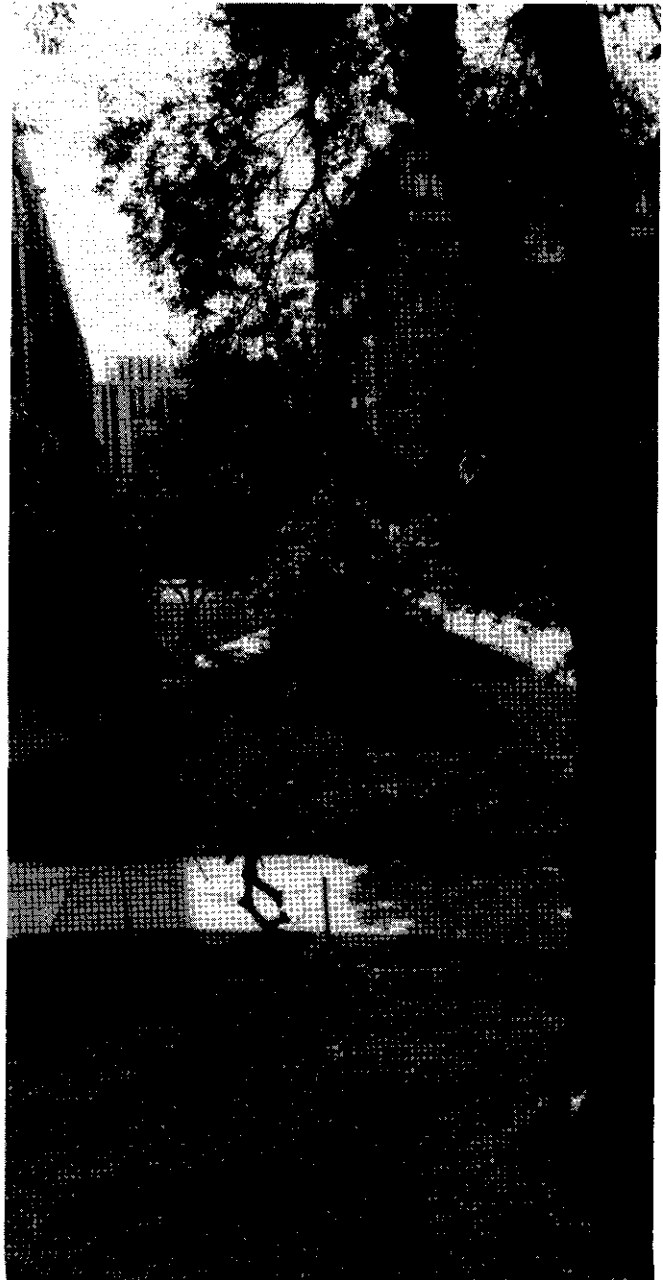
The Management Information Systems Association (MISA) is a professional organization which strives to educate its members further in the practical application of computer technology and interact with leaders in the MIS field through various activities, including speakers and corporate tours. The organization welcomes members from all majors.

The Student Senate is the official student government body of the School of Business Administration and is composed of two representatives from each recognized Business Administration student organization, at-large members elected from the student body, Student Council representatives, other students appointed by the Dean, the faculty or School adviser ex officio, and the Dean of the School ex officio.

Tau Alpha Chi is a national scholastic and professional fraternity of graduate tax students open to M.S. in Taxation students. Members participate in a variety of activities that serve to enrich their preparation for careers as tax professionals.

Women in Business was established in 1991 to promote women in business and the role of business women in the community. The organization offers business seminars, mentoring, and scholarships and is open to any student.

Additional information regarding specific student organizations can be obtained from the School of Business Administration Student Senate Office (577-4783), or the University Student Center and Program Activities Office (577-3444).



Administration and Faculty of the School

Dean: Harvey Kahalas

Associate Dean of Academic Affairs: Barbara Price

*Associate Dean of Research and Director, Center for International
Business Education and Research:* Attila Yaprak

Assistant Dean of Student Affairs: Linda S. Zaddach

Assistant Dean of Administrative Affairs: Deborah L. Stanifer

Interim Chairperson, Department of Accounting: William H. Volz

*Interim Chairperson, Department of Finance and Business
Economics:* Toni M. Somers

*Interim Chairperson, Department of Management and Organization
Sciences:* Yitzhak Fried

Interim Chairperson, Department of Marketing: George Jackson

Director, Computing and Information Services: Imran Javaid

Director, Development: Melissa Rudin

Professors

Richard F. Beltramini, B. Anthony Billings, Hugh M. Cannon (Adcraft Club/Leonard Simons—Larry Michelson Professor in Advertising), James Hamilton, Harvey Kahalas, J. Patrick Kelly (Kmart Chair in Marketing), James E. Martin, Richard O. Osborn, Irvin D. Reid, Alan Reinstein, Edward A. Riordan, Jone M. Rymer, William H. Volz, Attila Yaprak

Associate Professors

Richard Ajayi, Mark E. Bayless, John D. Beard, Robert C. Bushnell, Timothy W. Butler, Yitzhak Fried, George C. Jackson, Catherine Kirchmeyer, K. S. Krishnan, James T. Low, Mbodja Mougoue, Thomas J. Naughton, Harvey Nussbaum, Barbara Price, Kelly R. Price, Toni M. Somers, Albert D. Spalding, Jr., Myles S. Stern, Jeffrey J. Stoltman, Harish L. Verma, David I. Verway, John D. Wagster, David L. Williams

Assistant Professors

Angela Hwang, Peter Mudrack, Klara Nelson, Arik Ragowsky, Sabine Reddy, Jack D. Schroeder, Margaret A. Smoller, John C. Taylor

Instructor

Deborah Jones

Senior Lecturers

Sadhana Alangar, Susan D. Garr, Ariel S. Levi, Charles Soberman

Lecturers

Mark Copper, Melvin Houston, John LaCroix, Sheila Sasser, Audrey Taylor, Antoine Y. Walsh, Susan Williams

Faculty Emeriti

Charles Alberry, Gerald Alvin, Francis J. Brown, Bruce E. DeSpelder, Victor C. Doherty, Donald E. Gorton, Edwin F. Harris, Alice Wolfram Herge, Mary S. Irwin, H. Webster Johnson, Leon R. Klein, John G. Maurer, Raymond T. Murphy, Donald H. Palmer, Irving Paster, Edward T. Rancey, John J. Rath, Milton H. Spencer, Louis L. Stern, Fred P. Unruh, Frank L. Voorheis, James F. Wallis

DIRECTORY OF THE SCHOOL

DEAN

226 Prentis Building; 577-4501

ASSOCIATE DEAN OF ACADEMIC AFFAIRS

226 Prentis Building; 577-4503

ASSOCIATE DEAN OF RESEARCH AND DIRECTOR OF THE BUREAU OF BUSINESS RESEARCH

100 Rands House; 577-4842

ASSISTANT DEAN OF STUDENT AFFAIRS

103 Prentis Building; 577-4510

ASSISTANT DEAN OF ADMINISTRATIVE AFFAIRS

105M Prentis Building; 577-4502

DIRECTOR, COMPUTING AND INFORMATION SERVICES

6.3 Prentis Building; 577-4546

ASSISTANT DEAN, PROFESSIONAL DEVELOPMENT DIVISION

240 Rands House; 577-4448

DIRECTOR, CENTER FOR INTERNATIONAL BUSINESS STUDIES (CIBS)

100 Rands House; 577-4842

DIRECTOR, OFFICE OF STUDENT SERVICES

103 Prentis Building; 577-4510

STUDENT SENATE OFFICE

209B Prentis Building; 577-4783

DIRECTOR, SCHOOL OF BUSINESS ADMINISTRATION DEVELOPMENT

226 Prentis Building; 577-4500

DEPARTMENT OF ACCOUNTING

200 Rands House; 577-4530

DEPARTMENT OF FINANCE AND BUSINESS ECONOMICS

328 Prentis Building; 577-4520

DEPARTMENT OF MANAGEMENT AND ORGANIZATION SCIENCES

328 Prentis Building; 577-4515

DEPARTMENT OF MARKETING

300 Prentis Building; 577-4525

UNDERGRADUATE PROGRAM INFORMATION 577-4505

GRADUATE PROGRAM INFORMATION 577-4510

GRADUATE COURSES

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 6000-9999, are offered for graduate credit. Courses numbered 0900-5999, which are offered for undergraduate credit only, may be found in the Undergraduate Bulletin. For interpretation of numbering system, signs and abbreviations, see page 509.

ACCOUNTING (ACC)

7100 Financial Reporting Framework I. Cr. 3

Prereq: completion of all foundation requirements. No credit after ACC 5100 or ACC 5110. Case-oriented review of financial accounting concepts as reflected in the financial statements of various types of organizations. (T)

7120 Tax Problems in Business Affairs. Cr. 3

Prereq: completion of all foundation requirements. No credit after ACC 5170. Application of tax laws and regulations to the business affairs of corporations and individuals. (Y)

7130 Cost Accounting, Control and Analysis. Cr. 3

Prereq: B A 7000. No credit after ACC 5160. Theoretical framework of cost accounting related to the decision-making and control processes of management. Advanced standard cost accounting. The learning curve model. Internal transfer-pricing models. Make or buy and lease or buy decision models. (Y)

7170 International Accounting. Cr. 3

Prereq: ACC 7100. Consolidated statements for multinational corporations. Foreign currency translations; accounting for inflation; transnational financial reporting problems. (Y)

7180 Auditing. Cr. 3

Prereq: Prereq: ACC 7100. Principles and procedures of internal and external auditing; statistical sampling and other advanced auditing techniques; professional standards and responsibilities of the auditor. No credit after ACC 5140. (Y)

7190 Advanced Auditing. Cr. 3

Prereq: ACC 7180 or equiv. Reading and case studies which highlight new areas in the field of auditing and emphasize auditing standards and procedures. Attention to current auditing problem areas. (Y)

7210 Legal Aspects of Entrepreneurship. Cr. 3

Prereq: admission to a graduate program. Legal issues commonly encountered in starting up and managing a closely held business. Topics include: choice of form of business, terms and conditions of bids and contract, bankruptcy law. (I)

7220 Law of Corporate Management and Finance. Cr. 3

Prereq: admission to a graduate program. Law governing business corporations; fiduciary duties of managers and directors in situations such as mergers, acquisitions, securities offerings, market domination, litigation. (I)

7230 International Law and Business. Cr. 3

Prereq: admission to a graduate program. Legal framework for conducting business in a global economy; international aspects of laws of United States, Canada, Mexico, Germany, Japan, other countries. (I)

7240 Regulation of Manufacturing. Cr. 3

Prereq: admission to a graduate program. Legal and regulatory issues facing manufacturers, including product liability, environment, safety, and labor issues. (I)

7250 Regulation of Health Care. Cr. 3

Prereq: admission to a graduate program. Impact of laws, regulations, social policies on management and delivery of health care. Provider liability, managed health care contracts, HIV-related concerns, assisted suicide, other issues. (I)

7260 Theory of Constraints Approach to Management Accounting. Cr. 3

Prereq: B A 7000 or consent of instructor. Study of the theory of constraints, and its application to, and implementation in the context of, manufacturing and other business operations. (I)

7270 Discrimination in the Workplace. Cr. 3

Prereq: admission to a graduate program. Regulation of employment relationships. Discrimination associated with race, color, national origin, gender, sexual orientation, union affiliation, age, HIV, and disabilities. (I)

7300 Tax Research. Cr. 3

Prereq: ACC 7120 or undergraduate tax course. Methodology of tax research, including computer-assisted research; communication of argument and conclusions. Sources and roles of legislative, executive, and judicial branches in creating, interpreting and enforcing tax policies and practices. (Y)

7310 Tax Communications, Procedure, and Professional Ethics. Cr. 3

Prereq: ACC 7300. Open only to students in M.S. in Taxation program, or in Law School. Relationships and communications within the firm and with the client, professional advisers, and taxing authorities. Written and oral communication of factual results and interpretations of tax cases and promulgations. Ethical and professional liability. (Y)

7320 Advanced Tax Problems. Cr. 3

Prereq: 7120 or and undergraduate tax course. No credit after former ACC 7140. Problems and cases concerning such areas as gains and losses; corporate organizations, distributions, reorganizations and liquidations; partnerships; and estate and gift taxes. (Y)

7330 Taxation of Corporations and Shareholders. Cr. 3

Prereq: ACC 7320 and 7300. Advanced study of corporate liquidations and reorganizations including carryovers; multiple entities, including earnings and profits, consolidation adjustments, and separate return limitation considerations; policy aspects of corporate taxation. (Y)

7340 Taxation of Partnerships, S Corporations, and their Owners. Cr. 3

Prereq: ACC 7120; coreq: 7300. Tax rules governing partners and partnerships; partnership distributions and liquidations; dispositions of partnership interests; S corporations; basis adjustments; optimal business structure. (Y)

7400 Taxation of International Business and Multinational Transactions. Cr. 3

Prereq: ACC 7300 and 7320. U.S. and foreign taxation of U.S. persons with foreign-source income, and of resident and nonresident aliens. (Y)

7410 Tax Accounting, Periods, and Methods. Cr. 3

Prereq: ACC 7300. Planning for tax accounting periods and methods available to various types of business organizations, including: overall methods of accounting, uniform inventory capitalization rules, multiple entities, and reconciliation of tax accounting with management and financial reporting. (Y)

7420 Taxation by Multiple Jurisdictions. Cr. 3

Prereq: ACC 7300. Tax policies and tax rules of North American state, province and local jurisdictions, including value added, residency, and income allocation issues. (Y)

7430 Taxation of Exempt Organizations. Cr. 3

Prereq: ACC 7300. Tax-related issues affecting charitable and other tax-exempt organizations, including unrelated business income; exemptions for income, property, and other taxes; and qualification for recognition of exempt status. (Y)

7440 Estate and Gift Taxation. Cr. 3

Prereq: ACC 7300. Identification and valuation of transfers taxable under federal law; gross estate; exclusions, deductions, credits; taxable gifts, exclusions, deductions; generation-skipping trusts; extensive analysis of planning techniques. (Y)

7450 Taxes and Business Strategy. Cr. 3

Prereq: ACC 7300. A unified and comprehensive approach to tax strategy and tactics ranging over a broad spectrum of business decisions. Tax issues are integrated with nontax management issues. (Y)

7460 Cross-Border Transactions. Cr. 3

Prereq: ACC 7120. Tariff classification (including Harmonized System nomenclature), customs valuation, foreign trade zones, drawback, rules of origin under international trade agreements, and the interrelationships between Title 19 and the Internal Revenue Code. (Y)

7470 The Limited Liability Company. Cr. 3

Prereq: ACC 7300. Tax, legal, business planning and policy implications of the legislative authorization, formation, operation, and dissolution of the limited liability company. (Y)

7990 Internship in Tax Practice. Cr. 1-4 (Max. 4)

Prereq: ACC 7310. Offered for S and U grades only. Tax practice under supervision in cooperative education program, at least eight hours per week. Development of two sets of case materials based on actual incidents and situations. (Y)

7995 Directed Study in Accounting. Cr. 1-5 (Max. 5)

Prereq: consent of adviser and graduate officer; approved Petition and Authorization for Directed Study must be on file in Office of Student Services prior to registration. Advanced independent readings under the supervision of a member of the graduate faculty in areas of special interest to student and faculty member. (T)

7998 Seminar in Tax Policy. Cr. 3

Prereq: ACC 7310, 7330, 7340. Open only to students in M.S. in Taxation program, or in Law School. Strategic approach to tax policy. Review of constituencies of public finance function of government, and their interrelationships; economic, social, and related effects of tax policies on such constituencies; and process of effectuating changes within legislative, judicial, enforcement, and regulatory processes. (Y)

7999 Master's Essay Direction. Cr. 3

Prereq: consent of adviser. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of adviser. (T)

BUSINESS ADMINISTRATION (B A)**6000 Financial Reporting and Analysis. Cr. 2-4**

Prereq: admission to a graduate program. Financial Statements and principles of accounting; principles of financial analysis. (T)

6010 Markets and Marketing. Cr. 2-4

Prereq: admission to a graduate program. Principles of economics and markets; principles of marketing. (T)

6020 Management Principles and Organizational Process. Cr. 2-4

Prereq: admission to a graduate program. Principles of management, organizational processes, and operations management. (T)

6090 Quantitative Analysis: Theory and Application. Cr. 2

Prereq: one college course in finite math or higher; admission to a graduate program. Statistics of association and statistical inference from samples. Correlation, analysis of variance, multivariate regression, non-parametric statistics. (Former FBE 609.) (T)

6100 Analytical Writing for Business. Cr. 2

Prereq: admission to a graduate program. Waived for students scoring at least 3.5 on GMAT writing assessment. Development of analytical writing skills, based on diagnostic evaluation of GMAT analytical writing assessment. (T)

7000 Managerial Accounting. Cr. 3

Prereq: completion of all foundation requirements. No credit for undergraduate accounting majors; no credit after former ACC 6020. Fundamental principles; preparation and utilization of financial information for internal management purposes. (T)

7020 Corporate Financial Management. Cr. 3

Prereq: completion of all foundation requirements; admission to a graduate program. No credit for undergraduate finance majors; no credit after former FBE 7210. Development of tools to evaluate and manage financial policies of modern global corporations; case studies. (Former FBE 721.) (T)

7040 Managing Organizational Behavior. Cr. 3

Prereq: completion of all foundation requirements. No credit for undergraduate management majors; no credit after former MGT 7060. Contemporary issues; focus on problem solving and application of concepts and principles. Topics include: the organization as a learning system; managing change; cross-cultural applications; teams; empowerment. (Former MGT 706.) (T)

7050 Marketing Strategy. Cr. 3

Prereq: completion of all foundation requirements. No credit for undergraduate marketing majors; no credit after former MKT 7030. Application of theory, concepts, and models to contemporary marketing issues and problems. Developing and evaluating successful marketing strategies through analysis of customers, competitors, the organization, and the external environment. (Former MKT 703.) (T)

7070 Social Perspectives on the Business Enterprise. Cr. 3

Prereq: completion of all foundation requirements. No credit after former MGT 7740. Political, social, legal, ethical, regulatory, environmental, and global issues that interrelate with business decisions in the societal fabric. (Former MGT 774.) (T)

7080 Cross-Functional Business Analysis. Cr. 3

Must be taken in final twelve credits of graduate program and after all other core courses. No credit after former MGT 7890. Student teams work on integrative projects that require cross-functional problem solving, teamwork skills, electronic communication methods, and written and oral presentations. (Former MGT 789.) (T)

FINANCE AND BUSINESS ECONOMICS (FBE)**7010 Spreadsheet Modeling and Applied Decision Analysis. Cr. 3**

Prereq: completion of all foundation requirements; admission to a graduate program. Student computer account required. Spreadsheet applications of quantitative tools and techniques, including optimization methods and decision analysis, to business problems; use of Excel spreadsheets. (T)

7090 Money and Capital Markets. Cr. 3

Prereq: completion of all foundation requirements; admission to a graduate program. Financial intermediaries; the capital markets; the money market and interest rates. (F,W)

7220 Advanced Managerial Finance. Cr. 3

Prereq: B A 7020. Advanced topics in managerial finance, including leasing, merger valuation, reorganization, interactions of investment and financing decisions, and critical evaluation of alternative firm valuation theories. (F,W)

7230 Investment Policies. Cr. 3

Prereq: B A 7020. The key determinants of security prices under changing economic conditions. Theories, strategies and techniques for selection, timing, and diversification; methods of portfolio construction and administration. (F,W)

7290 Topics in Finance. Cr. 3

Prereq: B A 7020. Current developments in such areas as: working capital management, mergers and acquisitions, pension fund management, use of options and futures, high-risk debt management, hybrid securities, management of financial institutions, international financial issues, or market microstructure. (Y)

7340 Futures and Options. Cr. 3

Prereq: B A 7020. Valuing options and futures contracts. Use of futures and options in investment portfolios. Stock index, debt, and foreign currency options; forward and futures contracts and options on these instruments. (Y)

7820 Managerial Economics. Cr. 3

Prereq: completion of all foundation requirements; admission to a graduate program. No credit for undergraduate majors in business economics. Economic aspects of corporate management. Business forecasting; production, inventory, and cost control; pricing policies and practices; governmental regulation of business. (T)

7830 Business Conditions Analysis. Cr. 3

Prereq: completion of all foundation requirements. Analysis of current economic conditions and their effects on business. Governmental policies discussed and evaluated. (I)

7870 International Business Finance. Cr. 3

Prereq: B A 7020. Financing problems of the international business firm. Sources of funds for international investment; financial services to exporters, importers, and investors. Analysis of currency problems of foreign financial management, exchange controls, the functions of foreign money and capital markets. (Y)

7890 (FBE 5890) Internship in Finance and Business Economics. (FBE 7890) Cr. 3

Prereq: FBE 7210, prior consent of instructor; admission to a graduate program. Offered for S and U grades only. Minimum ten-page paper required, discussing: problem or opportunity facing sponsor organization, application of financial concepts, and outcomes relative to defined problem or opportunity; presentation to department chairperson. (T)

7991 Principles of Quality Management. Cr. 3

Prereq: successful completion of all M.B.A. foundation requirements. Introduction to philosophies of quality management and quality certification standards such as ISO 9000. System analysis, business process design, leadership, benchmarking, quality standards, performance standards, customer focus. (F,W)

7992 Methods of Quality Management. Cr. 3

Prereq: FBE 7991. Selection, implementation and applications of the most commonly-used quality methods, including statistical process control, design of experiments, process analysis, error proofing, decision analysis, and response surface methods. (F,W)

7993 Total Quality Management in health Care. Cr. 3

Prereq: completion of all foundation requirements. Open only to MBA Program students. Comprehensive examination of theory and practice of quality management in a health care setting. (Y)

7994 (HWM 7994) ISO 14000: Global Environmental Management Standard. Cr. 2-3

Prereq: FBE 7991. Review of global environmental management international standard, based on quality management principles embodied in ISO 9000, covering management systems; operations including natural resource and energy use; and environmental systems. Implementation and certification procedures. (Y)

7995 Directed Study in Finance and Business Economics. Cr. 1-3 (Max. 5)

Prereq: written consent of adviser and graduate officer; approved Petition and Authorization for Directed Study must be on file in Office of Student Services prior to registration. Advanced independent readings and research under the supervision of a member of the graduate faculty in areas of special interest to student and faculty member. (T)

7999 Master's Essay Direction. Cr. 3

Prereq: consent of adviser. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of adviser. (T)

INFORMATION SYSTEMS MANAGEMENT (ISM)**7500 Management Information Systems. Cr. 3**

Prereq: admission to a graduate program; completion of all foundation requirements. No credit after former ISM 4630 or former ACC 6070. Exploration of information systems and technology, including decision support systems that enhance marketing, finance, human resources, management, quality measurement and control, and strategic planning. Emphasis on case studies. (Y)

7510 Data Base Management. Cr. 3

Prereq: ISM 7500 or consent of instructor. No credit after ISM 5993. Student computer account required. The use of data base management techniques within accounting and management information systems, including a study of internal control in a data base management environment. Material fee as indicated in the Schedule of Classes. (Y)

7520 Information Systems Design. Cr. 3

Prereq: ISM 7500. No credit after ISM 5820. Principles of developing computer-based accounting and management information systems, emphasizing the phases of the life cycle of information systems projects. (Y)

7530 Information Systems and Ethics. Cr. 3

Prereq: completion of foundation requirements. No credit after former ACC 7530. Ethical issues in the information age: computer crime, privacy, copyright of software; other ethical issues related to use of information systems. (Y)

7540 Telecommunications and Networks. Cr. 3

Prereq: ISM 7500 or equiv. No credit after ISM 5993. Business data communications: concepts and terminology, approaches to designing systems, standards, hardware and software, network architectures, and distributed information systems. Technical and managerial aspects. (Y)

7550 Management of Information Technology. Cr. 3

Prereq: ISM 7520. No credit after ISM 6997. Information system structures, strategies and policy. Emphasis on case studies and projects involving information technology. (Y)

MANAGEMENT AND ORGANIZATION SCIENCES (MGT)**6995 Seminar in Management. Cr. 3**

Prereq: MGT 5510, 5530, six additional credits in management courses. Open only to students admitted to School of Business Administration; others by consent of adviser. Advanced topics in organizational behavior, organization theory, human resource management, operations management from strategic and global perspective. (Y)

7620 Complex Organizations. Cr. 3

Prereq: B A 7040. The formal structure and processes in complex organizations: departmentation, decentralization, authority and power, relationships between groups, organizational design and evaluation. Factors affecting organizational design, adaptation to environments, and designing effective decision-making systems. (T)

7630 Organizational Change and Development. Cr. 3

Prereq: B A 7040. Analysis of the impact of dynamic forces, particularly globalization, on the theory, methods, and skills involved in designing and implementing planned changes in organizations. (I)

7640 Management of Human Resources. Cr. 3

Prereq: B A 7040. Theory, policy, research and process issues in employment relationships. The specific personnel practices of planning, selecting, employee development and appraisal, compensation and labor relations examined as they relate to conceptual and pragmatic views of management or employee behavior. (T)

7650 Strategic Human Resource Management. Cr. 3

Prereq: MGT 7640. Survey of human resource management from a strategic perspective. Formulation and implementation of human resource strategy addressed for recruitment, placement, training, development, issues in an international community. (Y)

7660 Entrepreneurial Management. Cr. 3

Prereq: B A 7040. Nature of entrepreneurship and role of entrepreneur. Focus on problematic issues involved in creating and managing a small business. Emphasis on special knowledge and skills required of an entrepreneurial manager. Individual students may act as consultants to entrepreneurs or small business owner/managers. (Y)

7680 Executive Decision Making. Cr. 3

Prereq: B A 7040. Analysis of the problems and potential solution techniques available to managers in top-level decision making. Topics include the development of a decision framework, the impact of the environment on strategy formulation, levels of managerial analysis for decision making, the use of behavioral and quantitative models, and issues of complexity and uncertainty. (Y)

7700 Leadership and Management of Innovation and Technology. Cr. 3

Prereq: B A 7040 or MGT 7620 or consent of instructor. Technology and innovation in corporations. Building on principles of leadership and management, consideration of technology, innovation, organizational effectiveness and global competition; includes team skills, cross functional management, and communication in a global context. (Y)

7710 Leadership of Technical Organizations. Cr. 2

Prereq: B A 7040 or MGT 7620 or consent of instructor. Key leadership principles required to manage technical professionals in complex and dynamic conditions. Team building, conflict resolution, cross-functional project management and communication skills in global contexts. (Y)

7750 Labor Relations and Collective Bargaining. Cr. 3

Forces which affect the character and quality of union-management relationships. Formulating the labor contract; mediation; analysis of relationships at the work unit level and more complex levels and their influence on contract negotiations and grievances in all kinds of work organizations. A bargaining situation is generally used. (Y)

7770 Union Contract Administration. Cr. 3

Prereq: MGT 7750. Daily union-management relations. Grievance handling and arbitration. The causes of labor-management conflicts under a union contract. (Y)

7780 (MGT 7780) Concepts and Processes of Dispute Resolution I: Negotiating Theory and Practice. (D R 7210) Cr. 3

Prereq: graduate standing. Theoretical foundations of processes of negotiation, mediation, and multi-party collaborative problem solving. Skill building simulation to integrate theory and practice. (Y)

7790 Compensation Administration. Cr. 3

Prereq: MGT 7640. Process policy and theoretical issues in pay and benefits administration; determination of structural level of individual pay, non-traditional reward systems, and government regulation of benefits. (Y)

7800 Strategic Management of Technology and Global Industrial Development. Cr. 3

Prereq: B A 7040 or MGT 7620 or consent of instructor; MGT 7700 recommended. Analysis of managing a high technology corporation in a globalizing industry. Directed change in international technologies and industries. Cases, lectures, discussion, and guest speakers. (Y)

7810 (I R 8000) International Industrial Relations and Human Resources. Cr. 3

Prereq: MGT 7640, 7750. Industrial relations and human resource management from an international perspective. Topics include: international investment, industrial relations strategies of U.S. multinationals, international relations systems in North America, Western Europe, and Asia-Pacific regions. (I)

7840 Project and Program Management. (I E 7840) Cr. 3-4

Prereq: I E 7850 or B A 6020 or equiv.; or consent of instructor. Presentation of project management strategies, tools and techniques. Development of management skills for team-building and corporate strategic planning. (Y)

7995 Directed Study in Management. Cr. 1-3 (Max. 5)

Prereq: written consent of adviser and graduate officer; approved Petition and Authorization for Directed Study must be on file in Office of Student Services prior to registration. Advanced independent readings under the supervision of a member of the graduate faculty in areas of special interest to student and faculty member. (T)

7999 Master's Essay Direction. Cr. 3

Prereq: consent of adviser. (T)

8000 Seminar in Management. Cr. 3

Prereq: B A 7040. Selected topics in the management and organizational sciences. (I)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of adviser. (T)

MARKETING (MKT)**7150 Global Automotive Marketing Strategy. Cr. 3**

Prereq: completion of all foundation requirements or consent of instructor. No credit after B A 7050. Marketing concepts, strategies, and tactics in global automotive industry. Marketing principles, role of marketing, target market selection, segmentation, brand management, distribution systems. (Y)

7330 Managerial Communication. Cr. 3

Prereq: completion of all foundation requirements. Advanced course in executing and managing written and oral communications in organizations. Student participation in group projects involving communication planning, policy creation, document design, and videotaped presentations. Material fee as indicated in the Schedule of Classes. (F,W)

7420 Sales Management Problems. Cr. 3

Prereq: B A 7050. Sales management operations, procedures and policies. Emphasis on the areas in which the sales executive must make policy decisions such as price administration, product planning, organization and management of sales personnel, and marketing planning. (Y)

7430 Advertising Management. Cr. 3

Prereq: B A 7050. Planning, implementing, and controlling advertising and sales promotion. Internal and external relationships of the advertising department, determining advertising objectives and copy platform, setting the budget, selecting media and measuring advertising effectiveness. (F,W)

7450 Business Research and Methodology. Cr. 3

Prereq: B A 7050 or consent of instructor. An intensive study of the objectives and methodologies of research for business decisions. Course topics include: the scientific method, primary and secondary data sources, research design, reliability and validity, sampling, and applied statistics. Focus on the development of decision-oriented research information for all aspects of a business organization. (T)

7460 International Business. Cr. 3

Prereq: B A 7050, B A 7020, or consent of instructor. World trade, the international sociological, cultural, political, economic, monetary environment of international business. International funds, credits, payments, and exchange controls, balance of payments, interna-

tional marketing and management strategy formulation. Multinational corporations and host country governments. Common market and public policy issues. (F,W)

7470 Consumer and Industrial Buying Behavior. Cr. 3

Prereq: B A 7050. Behavioral theory as it relates to consumer and industrial decision processes. Relevant concepts, theories, and recent research findings are drawn from the fields of marketing, psychology, social psychology, and communications. Examination of consumer and industrial buying practices. (F,W)

7500 International Marketing Strategy. Cr. 3

Prereq: B A 7050. Development of systematic applications of strategic marketing in the global environment. Exploration of world trade and investment patterns and theories, strategic alliances, European market integration, marketing in Eastern Europe and developing countries, counter-trade. Emphasis on globalization of sourcing, production, and distribution. Global product pricing, distribution, and promotion strategies. (F,W)

7600 The North American Economy. Cr. 3

Prereq: MKT 7460 or admission to MAIR program or consent of instructor. Role of North America in the world economy; trade, investment, resource and people flows within and outside North America. Cultural and ethnic configuration, demographic movements, labor, environment, energy and public policy issues surrounding NAFTA. Political perspectives. (Y)

7620 Business Logistics Management. Cr. 3

Prereq: B A 7050 or consent of instructor. Introduction to business logistics management integrating materials management and physical distribution through the investigation of transportation, inventory, handling and storage, acquisition, order processing and facility location subsystems. (F)

7700 Management of Retail Enterprises. Cr. 3

Prereq: B A 7050. In-depth study of the retail mix variables as they relate to products and services, pricing, promotion, place, and operating policies. Merchandising, inventory controls, store operations, and research approaches in monitoring current trends in retail management. (Y)

7870 Seminar in Marketing. Cr. 3

Prereq: B A 7050 and consent of instructor. In-depth exploration of new and important subjects or techniques in marketing. Topics vary by semester; consult instructor. (I)

7890 Internship in Marketing. Cr. 3

Prereq: minimum 3.0 h.p.a.; B A 6010; consent of instructor prior to enrollment. Offered for S and U grades only. Open only to marketing graduate students. Required paper (minimum ten pages) discussing: problem or opportunity facing sponsor organization; application of marketing concepts; outcomes relative to identified problem or opportunity. Presentation to class summarizing internship experience. (T)

7995 Directed Study in Marketing. Cr. 1-3 (Max. 5)

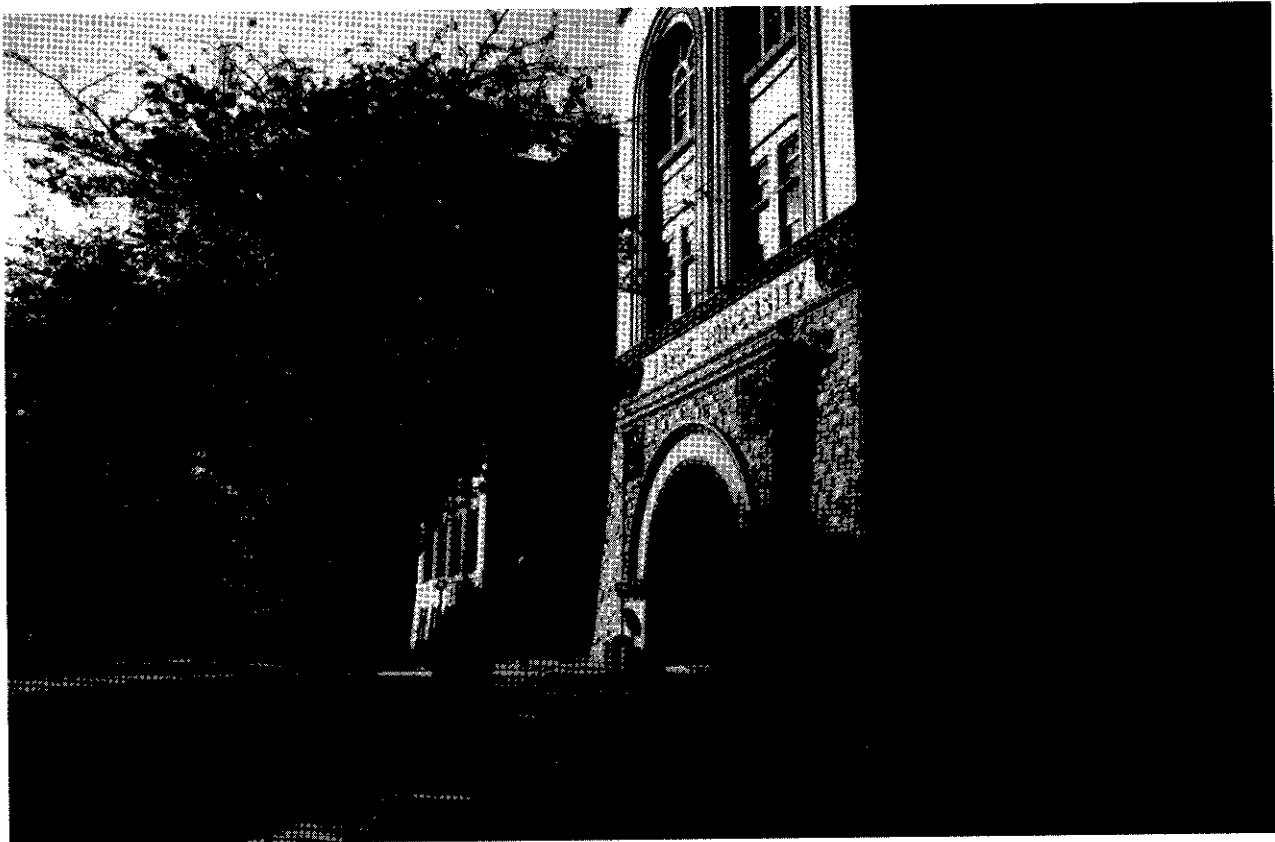
Prereq: written consent of adviser and graduate officer; approved petition and authorization for directed study must be on file in Office of Student Services prior to registration. Advanced independent readings under the supervision of a member of the graduate faculty in areas of special interest to student and faculty member. (T)

7999 Master's Essay Direction. Cr. 3

Prereq: consent of adviser. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of adviser. (T)



College of Education

DEAN: Paula C. Wood

Foreword

The College of Education at Wayne State University is located in, and serves the needs of, one of the nation's largest metropolitan areas. Thus, the College reflects the dynamic character of urban life, and, in its concern with urban problems, places great faith in education as the means by which human circumstances can be improved. To this end, the College prepares professional educators who have the commitment and competence to help young people achieve dignity, preserve individuality, develop democratic values, and find self-fulfillment.

As society has been altered by such factors as the development of knowledge, technological advances and population growth, the purposes and processes of education have changed. New technologies of instruction are evolving rapidly and offer the educator many opportunities for developing a high level of competence. Problems generated in our urban society are complex, and those related to education are no exception. Yet, the opportunities for curriculum innovation, experimentation and leadership have never been greater. Accreditation

The programs of the College of Education have been accredited by the National Council for Accreditation of Teacher Education since 1954. The College has been reaccredited regularly since that time. Full accreditation for its programs was again granted in 1997 for a seven-year period. In addition, Wayne State University is accredited by the North Central Association of Colleges and Secondary Schools.

Graduate Degrees and Certificates and Post Bachelor's Certificates

MASTER OF ARTS IN TEACHING with majors in

Elementary Education — with concentrations in:

*Bilingual-Bicultural Education
Early Childhood Education
General Elementary Education
Science Education*

Secondary Education — with concentrations in

*Bilingual-Bicultural Education
Career and Technical Education
English Education
Foreign Language Education
Mathematics Education
Science Education
Social Studies Education*

MASTER OF ARTS with majors in

*Counseling
Recreation and Park Services
School and Community Psychology
Sports Administration
Rehabilitation Counseling and Community Inclusion*

MASTER OF EDUCATION with majors in

*Adult and Continuing Education¹
Art Education — with concentrations in
Art Education
Art Therapy
Bilingual-Bicultural Education
Career and Technical Education
Counseling
Early Childhood Education*

*Educational Leadership
Educational Psychology
Educational Sociology¹
Elementary Education — with concentrations in
Early Childhood Education
Language Arts and Reading
Children's Literature
Mathematics Education
Science Education
Social Studies Education
English Education: Secondary — with concentration in
Teaching English as a Second Language
Evaluation and Research
Foreign Language Education—Secondary
Health Education
History and Philosophy of Education¹
Instructional Technology
Mathematics Education
Physical Education
Reading
Science Education
Social Studies Education
Special Education — with concentrations in:
Emotionally Impaired
Learning Disabilities
Mentally Impaired*

POST-BACHELOR'S TEACHING CERTIFICATES with majors and minors in:

Elementary Education — with concentrations in:

*Bilingual-Bicultural Education
Early Childhood Education
General Elementary Education
Science Education*

Secondary Education — with concentrations in:

*Art Education - K-12
Bilingual-Bicultural Education
Dance
English Education
Foreign Language Education
Mathematics Education
Music — Instrumental K-12
Music — Vocal K-12
Physical Education K-12
Science Education
Social Studies Education
Speech*

EDUCATION SPECIALIST CERTIFICATES with majors in

Counseling — with concentration in:

Counseling

Curriculum and Instruction — with concentrations in:

*Career and Technical Education
Early Childhood Education
Elementary Education
English Education
Mathematics Education
Science Education
Secondary Education
Social Studies Education
General Administration and Supervision
Instructional Technology
Reading*

1. An admission moratorium is in effect for this program.

DOCTOR OF EDUCATION and DOCTOR OF PHILOSOPHY
with majors in

Career and Technical Education

Counseling

Curriculum and Instruction — with concentrations in:

Art Education

Bilingual-Bicultural Education (Ed.D. only)

Early Childhood Education

Elementary Education

English Education—Secondary

Foreign Language Education—Secondary

K-12 Curriculum

Mathematics Education

Science Education

Secondary Education

Social Studies Education—Secondary

Educational Psychology

Educational Sociology¹

Evaluation and Research

General Administration and Supervision

Higher Education¹

Instructional Technology

Reading (Ed.D. only)

Special Education



1. An admission moratorium is in effect for this program.

ACADEMIC REGULATIONS

For complete information regarding graduate academic rules and regulations of the University, students should consult the General Information section of this bulletin, beginning on page 5. The following additions and amendments pertain to the College of Education.

Master of Arts Degrees

The Master of Arts degrees offered by the College of Education are administered by the Division of Health, Physical Education, and Recreation, and by the Division of Theoretical and Behavioral Foundations. Both generic degree requirements and specific requirements associated with individual majors and areas of concentration are described in the divisional sections; see pages 78-114.

Master of Arts in Teaching

The Master of Arts in Teaching degree is administered by the Division of Teacher Education. Both generic degree requirements and specific requirements associated with individual majors and areas of concentration are described in that section; see pages 89-99.

Master of Education

The Master of Education degree is offered in various curricular areas administered by each of the College's academic divisions: Administrative and Organizational Studies; Health, Physical Education, and Recreation; Teacher Education; and Theoretical and Behavioral Foundations. Specific requirements associated with individual majors and areas of concentration are presented in the Divisional sections (see pages 78-114); generic degree requirements applicable to all Divisions are as follows:

Admission to these programs is contingent upon admission to the Graduate School; for requirements, see page 16. In addition, applicants must satisfy the following criteria:

In general, eligibility for a state provisional teaching certificate is essential for admission. Additional prerequisites include a satisfactory background in the area of specialization and the completion of general undergraduate academic requirements appropriate to the degree for which admission is sought. A personal interview in the chosen major may be required.

DEGREE REQUIREMENTS: The minimum requirement for a Master of Education degree is thirty credits, at least twenty-four of which must be taken at the University. Many programs in the College of Education require more than the minimum, in which case those requirements take precedence. The Master of Education is offered under the following options:

Plan A: A minimum of twenty-two credits in course work, plus eight credits for the terminal seminar and thesis.

Plan B: A minimum of twenty-seven credits in course work, plus three credits for the terminal seminar and essay.

Plan C: A minimum of twenty-seven credits in course work, plus three credits for the terminal seminar and project.

The course work for the Master of Education degree is divided into three areas: major requirements, general professional requirements (core courses), and electives.

Major Requirements consist of a minimum of eight credits in the specialization selected by the student in addition to the terminal seminar and thesis, essay, or project. Specific course requirements for the various majors are presented in the Divisional sections, pages 78-114.

General Professional Requirements consist of credits selected from educational foundation courses. The student must complete one two-credit course from each of three areas chosen from those listed below. Courses within a student's major area cannot be used to satisfy this requirement.

Educational Administration	EDA 7600
Educational Psychology	EDP 5450, or 5480, or 7350
Educational Sociology	EDS 7630
Evaluation and Research	EER 7610
Counseling	CED 6700
History and Philosophy of Education	EHP 7600
Special Education	SED 7050

Electives are those courses recommended outside the major and general professional sequences. A minimum of six credits is recommended in this area. The purpose of elective courses is to provide breadth to the student's program.

See the individual programs in the following Divisional sections of this bulletin for specific courses required by certain program areas in the major, the general professional sequence, or the elective sections of *Plans of Work*.

Plan of Work: After consultation with the adviser, the master's applicant prepares a *Plan of Work* for the program, setting forth the courses that will satisfy the requirements for the degree.

Candidacy: This status is established upon completion by the master's applicant of nine credits toward degree requirements, and after filing an approved *Plan of Work* with the College Graduate Office, 489 Education Building. The *Plan of Work* MUST be filed during the term in which the applicant completes twelve graduate credits toward the degree. Failure to file a *Plan of Work* will preclude further registration for courses.

Time Limitations: Requirements for the Master of Education must be completed within six years after completion of the first course to be applied toward the degree.

Post-Bachelor's Teaching Certificate

This program provides a means of obtaining teacher certification for those who do not choose to pursue the master's degree in education or the Master of Arts in Teaching. The program incorporates classroom theory with practice, requires a minimum of four semesters to complete and is available at both the elementary and secondary levels. Courses are offered during the day. Admission requires a baccalaureate degree with an appropriate teaching major and minor earned at a regionally accredited institution. Undergraduate course work should reflect a minimal 2.5 h.p.a. and the student must successfully complete the State Basic Skills Test. For a complete statement of curriculum requirements, see page 93.

Education Specialist Certificate

The Education Specialist certificate program is a thirty credit minimum curriculum beyond the master's degree. It is a self-contained concentration, separate from other existing programs, with a distinct form of recognition at its completion. This is a planned program, not merely recognition for thirty credits of graduate study accrued beyond the master's degree.

The Education Specialist Certificate is offered in various curricular areas administered by the following academic divisions: Administrative and Organizational Studies, Teacher Education, and Theoretical and Behavioral Foundations. Specific requirements associated with individual majors and areas of concentration are presented in the Divisional sections (see pages 78-114); generic certificate requirements applicable to all Divisions are cited below:

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Minimum entrance requirements established by the College of Education are:

- A. A master's degree from an accredited institution.
- B. Applicants must present an honor point average of 2.6 or above for upper division undergraduate work. Applicants with an undergraduate honor point average below 2.6 must have an honor point average of 3.4 or above on their master's degree work.
- C. Fulfillment of the special requirements of the area of concentration in which the student wishes to work.
- D. All major areas with the exception of educational sociology, instructional technology, and school and community psychology

require a minimum of three years of teaching experience or equivalent.

Students who have not been previously admitted to the Graduate School file the *Application for Graduate Admission* with the University Admissions Office, 3 East, Helen Newberry Joy Student Services Building.

Students who hold master's degrees from Wayne State University file applications in 489 Education Building. An application fee is not required from these students.

Forms and directions regarding fulfillment of the other College and/or departmental requirements will be forwarded to the student on receipt of the application by the Education Graduate Office. When these requirements have been satisfied, the applicant will be invited to meet with a committee from his/her chosen area of concentration. Following the interview, the student will be notified of the admission decision by the Education Graduate Office.

CERTIFICATE REQUIREMENTS:

The Education Specialist Certificate program requires a minimum of thirty credits beyond the master's degree. The purpose of the Certificate program is to strengthen the liberal education of teachers and administrators and to contribute to more effective productivity of professional workers in the field of education. The specific content of each major is dependent upon the individual student's needs and interests.

Plans of Work are adapted to the professional needs of students and each one is developed by the individual student with the help of his/her adviser. A *Plan of Work* must be approved by the adviser and filed with the Education Graduate Office, 489 Education Building, before six credits have been completed following acceptance into the program. Failure to file a *Plan of Work* at the appropriate time will preclude further registration for courses.

Research studies, projects, or field studies may be accepted in partial fulfillment of requirements for the Certificate. Such projects will be in the nature of culminating experiences and arranged with the individual student's adviser.

Time Limitations: Requirements for the Education Specialist Certificate must be completed within six years after admission to the program. Credit earned beyond the master's degree which is over six years old *at the time of admission* may not be applied toward meeting requirements of the certificate. Credit earned after acceptance as a certificate applicant may not be over six years old at the time the certificate is granted.

Transfer Credits: A maximum of ten semester credits of graduate post-master's degree work earned at another accredited university, or at Wayne State University *prior* to admission to the Education Specialist program, may be applied to the certificate provided the courses are approved by the adviser as appropriate to the program plan.

A maximum of six semester credits of graduate post-master's degree work earned at another accredited university *after admission* to the Education Specialist program may be transferred and applied to the program provided no prior transfer credit from another university has been included in the program.

DOCTORAL DEGREES

The doctoral programs of the College of Education at Wayne State are designed to afford opportunity for advanced study and research to persons who have demonstrated: (1) superior scholarship; (2) leadership in education; (3) promise in the field of research; and (4) potential for professional leadership.

Advanced graduate degrees are conferred not merely upon the completion of a prescribed number of courses, nor necessarily after a given period of residence; but, rather, in recognition of outstanding ability and high attainment in course work, examinations, research, scholarly writing, and personal fitness for education as a profession.

Doctoral degree programs are administered by the following academic divisions of the College: Administrative and Organizational Studies, Teacher Education, and Theoretical and Behavioral Founda-

tions. Specific requirements associated with individual majors and areas of concentration can be found in the Divisional sections of this Bulletin (see pages 74-112); generic degree requirements applicable to all Divisions are stated below.

Admission

Admission to these programs is contingent upon admission to the Graduate School; for requirements, see page 16. In addition, applicants to doctoral programs in the College of Education are expected to meet the following minimal criteria:

1. Undergraduate honor point average of 3.0. Applicants with honor point averages of less than 3.0 for the baccalaureate degree must present an honor point average of 3.5 or above in their master's degree work before being considered for acceptance as doctoral applicants.
2. A master's degree from an accredited graduate school.
3. Some fields of concentration require a minimum of three years teaching experience or equivalent.
4. Successful completion of a written examination evaluated on writing ability and when deemed appropriate by the program area, knowledge of the field.
5. Recommendation for admission from an interview committee.

Application: Students who have not been formally admitted to the Graduate School file initial applications, with the \$20.00 application fee, with the University Admissions Office, 3 East, Helen Newberry Joy Student Services Building. Students who hold master's degrees from Wayne State University file doctoral applications in 489 Education Building. An application fee is not required from these students. Applicants must meet with a counselor in Room 489 Education Building before filing a doctoral application.

Official transcripts of all college-level work, undergraduate and graduate, are to be mailed to the appropriate University office by the institution where the work was completed. Forms and directions detailing prescribed college admission requirements including required College and Departmental writing tests, and personal interview information, will be forwarded by the Education Graduate Office, 489 Education Building, upon or after receipt of doctoral applications. When all transcripts, test results, recommendations and other credentials, including the autobiographical statement, have been received and prerequisites satisfied, the applicant will be invited to meet with a committee from his/her chosen area of concentration. Following the interview, the student will be notified of the admission decision by the graduate officer.

Doctor of Education Requirements

Credit Requirements: The minimum credit requirement for the Ed.D. degree is 100 credits in graduate work beyond the baccalaureate degree. All course work must be completed in accordance with the academic requirements of the College and the Graduate School; see pages 73 and 16-30, respectively.

Residence: At least one full year of course work, i.e., thirty credits of course work beyond the master's degree, must be taken in residence at Wayne State University. This may include work in research techniques, unless taken by examination, but *does not include dissertation research credit*.

The Ed.D. program requires the completion of six graduate credits in regular course work in each of two successive semesters after admission as an Ed.D. applicant. The residence requirement must be completed following admission to the Ed.D. program.

All degree requirements must be completed within seven years from the time of admission as a doctoral applicant.

Doctoral Seminars: Students must elect two doctoral seminars from the following foundation areas: educational administration, educational psychology, educational sociology, history and philosophy of education, and curriculum and instruction. These seminars are open only to doctoral students.

Research Methods: A minimum of eleven credits is required in course work aimed at developing competence in statistics and research methodologies. At least six credits of the minimum requirement will consist of a comprehensive course in evaluation and statistics and an advanced course in research methodology and experimental designs. The other five credits will include research electives appropriate to the needs of the student, department research seminars, internships in research, or any combination thereof.

Concentrations: A minimum of thirty credits is required in the student's area of concentration. The courses constituting the major will be specified by the department in which the student selects the concentration. Course work in the field of concentration is not restricted to courses offered by the College of Education.

Cognates: A cognate in professional education or in a single field consisting of a minimum of twelve credits, is required. Courses included in the cognate will be selected by the student and adviser in conjunction with the cognate field committee member.

Dissertations: The doctoral student is required to submit a dissertation on a topic satisfactory to the doctoral committee. Twenty credits are required in dissertation research (ED 9999).

Electives may be chosen from the foundations of education, non-dissertation research techniques, or any course work the applicant and adviser consider appropriate to the student's individual program.

A Plan of Work must be filed and approved by the adviser and graduate officer during the semester in which the student is completing eighteen credits of work under advisement. Failure to file a *Plan of Work* will preclude further registration.

Final written and oral examinations in the major field of concentration and the cognate in professional education or a subject field will be required. The exact time of these examinations will be determined by the adviser and the student but should not be delayed beyond the semester in which all course work is completed. When performance on a final examination is unsatisfactory, the student may request a re-examination which must be taken within one year of the date of the first examination. The second examination shall be considered final.

A final oral examination on the dissertation is conducted by the student's doctoral committee under the auspices of the Education Graduate Office.

Selection of Adviser and Advisory Committee: For the first semester of enrollment, the student may be advised by the Graduate Officer. All admitted students must have an adviser assigned at the time of admission.

The adviser acts as the chairperson of the student's doctoral committee, which will consist of a minimum of three members; specifically, the adviser, one member representing the area of the cognate, and one member representing the field(s) outside of the major area division or the College of Education. The committee must be fully constituted not later than the time the student begins active work on dissertation research or project, or is ready to take the final qualifying examination, whichever comes first. The main function of the doctoral committee is to advise the student in research activities and to administer all final examinations. A moderator will be selected for final oral defense of the dissertation. The moderator must be outside of the division of the student's major area.

Doctor of Philosophy Requirements

The Doctor of Philosophy embraces the same fields of concentration as the Doctor of Education, except that the Ph.D. degree is not available in the areas of Reading and Curriculum and Instruction: Bilingual-Bicultural Education.

Of the minimum one hundred credits required beyond the bachelor's degree, a minimum of thirty credits in course work must be completed in the major field, including at least twenty-four credits in the area of concentration. Thirty credits in dissertation research are required in the Ph.D. program. The remaining credits will be assigned to research or course work in accordance with the needs of the students and the requirements in the field of concentration. At least one

cognate is required. Fifteen credits in research are required beyond the minimum Ph.D. program requirements.

A plan of work, qualifying examinations, and a Final Public Lecture-Presentation are required. Satisfactory completion of the full-time residency requirement must be certified by the adviser and the College graduate officer. Ph.D. applicants should consult the procedures of the Graduate School beginning on page 16 for additional information. Also, please consult the College of Education *Doctoral Policies and Procedures* bulletin, available in Room 489, Education Building, for further specific Ph.D. requirements.

FINANCIAL AID

For general sources of graduate financial aid, see the section on Graduate Financial Assistance, beginning on page 30. Information pertinent to this College appears below. See also individual departmental sections.

NOTE: Scholarships in the College of Education are limited to students enrolled in the College of Education whose cumulative honor point average is at least 3.0, unless stated otherwise. The awards are presented annually to undergraduate and graduate students who demonstrate high academic achievement and leadership potential in the field of education. The application deadline is mid-February of each year. Contact the Office of the Dean, 441 Education.

Margaret Ashworth Scholarship: An award of \$500 open to minority undergraduates with junior or senior standing who are pursuing teacher certification or graduate studies (M.A.T.). Eligible students should be dedicated to teaching in economically-depressed areas.

C.C. Barnes Memorial Scholarship: Up to five years paid membership in the National Association of Teachers (NAT)—Council for Social Studies, open to any student majoring in social studies education.

Augustus Calloway Scholarship: An award of \$500 open to full-time undergraduates and full- or part-time graduate students (Master's level in fields of education) who demonstrate financial need. Minority students are encouraged to apply.

College of Education Memorial Scholarship: An award of \$500 open to full-time undergraduate and part- or full-time graduate students enrolled in a master's-level program in the College. Students must demonstrate financial need and maintain at least a 3.5 h.p.a.

Dean's Scholarship Award: An award of \$500 open to full-time or part-time undergraduate or graduate students who exhibit an interest in urban education. Graduate students must have a minimum 3.75 h.p.a.

Faculty Leadership Award: An award of \$500 in honor of a College faculty member, limited to full- and part-time undergraduate and graduate students who show evidence of leadership and potential for becoming outstanding educators, and have a strong commitment to the field of education. Graduate students must have a minimum 3.75 h.p.a.

Evelyn Reed Havens Scholarship: An award of \$100 per semester offered to a full-time art education major who demonstrates financial need.

Health, Physical Education and Recreation Scholarship: Award of \$500 offered to a full- or part-time undergraduate or graduate student in health, physical education and recreation, who plans to work in an urban setting, has earned at least twelve credits in professional course work, and has a minimum 3.5 h.p.a.. Minority students are encouraged to apply.

James E. House Scholarship for Educational Leadership: An award of \$500 open to full- or part-time graduate students enrolled in the education leadership program who have a minimum 3.5 h.p.a. and demonstrate evidence of leadership potential and intellectual maturity.

Mary Jane Kruse Scholarship: An award of \$500 offered to full- or part-time mature women students, continuing their education in the College, on the basis of scholastic achievement, desirable qualities of character and leadership, and financial need.

George Leonard Memorial Scholarship: An award of \$500 open to graduate students interested in counselor education; applicants must submit an essay of 500-600 words.

Otis W. Morris Memorial Scholarship: An award of \$500 offered to full-time or part-time undergraduate or master's-level graduate students majoring in English education.

Sally Patterson Memorial Scholarship: An award of \$500 open to any physically-handicapped undergraduate or graduate student demonstrating financial need.

Phi Delta Kappa Scholarship: An award of \$500 offered to full-time undergraduate and full- or part-time graduate students in a M.A.T. or M.Ed. program, who demonstrate financial need.

Sweeney-Comfort Scholarship: An award of \$500 offered to a full-time senior undergraduate student, or a full- or part-time master's-level graduate student, who aspires to be a teacher and demonstrates financial need. Former graduates pursuing certification are encouraged to apply.

Normal Program Load

A full-time graduate student load is eight credits per semester and is limited without exception to a sixteen credit maximum by the Graduate School. If a significant portion of a student's time is spent in outside work, corresponding adjustments must be made in the college schedule. A graduate student working full-time who desires to carry more than eight credits must secure permission from the Assistant Dean for Academic Services, who serves as Graduate Officer.

Attendance

Regularity in attendance and performance is necessary for success in college work. Although there are no officially excused absences as defined by College policy, the conscientious student is expected to explain absences to the instructor. Such absences may be due to illness; to participation in inter-college activities, certified by the sponsoring faculty member; or other similar types of absence for which the student can present to the instructor evidence that he/she was engaged in authorized University activities. Each instructor, at the beginning of the course, will announce his/her attendance requirements.

Probation and Withdrawal

If, at any time, a graduate student's scholastic honor point average falls below 3.0, the student is automatically placed on probation. A student on probation must secure the approval of the Assistant Dean for Academic Services before registering for subsequent work in the College. The College reserves the right to ask a student to withdraw at any time from specific courses or from the College entirely, if progress does not warrant continuance.

Readmission

Graduate students who are returning to work on graduate programs following an interruption in residence of three years or more should report to the Central Records Office, Helen Newberry Joy Service Center, before attempting to register.

Graduate students who have received a master's degree from Wayne State University and have not registered since the degree was conferred, and who desire to pursue further graduate work in the College of Education, must complete, in person, a post-master's readmission form available in Central Records, 1 West, Helen Newberry Joy Student Services Building.

Revalidation of Credit —Master's Degree

Upon recommendation of the adviser and approval of the graduate officer, a master's degree student may revalidate over-age credits which are between six and ten years old, and that represent courses completed at Wayne State University with grades of 'B' or better. *Students are not permitted to revalidate credits earned at other institutions.* The adviser and student must set a terminal date for completion of all degree requirements, including such additional

requirements as may be indicated by the graduate officer to revalidate over-age credits.

Graduation

Applications for graduate degrees and the Education Specialist Certificate must be made not later than the last day of final registration for the semester in which degree or certificate requirements are to be completed.

Graduation deadline dates for the semester in which candidates are completing degree or education specialist certificate requirements are issued on receipt of the application by the Graduate Education Office.

Information concerning commencement announcements, caps and gowns, invitations, tickets, time and place, and other relevant items will be mailed to graduates prior to the event. Candidates for doctoral degrees are requested and expected to attend the commencement at which the University confers upon them the degree earned.

DIRECTORY OF THE COLLEGE

DEAN:

Paula C. Wood Room 441, Education Building; 577-1620

ASSOCIATE DEAN, CURRICULUM:

Room 441, Education Building; 577-1620

ASSOCIATE DEAN, RESEARCH:

Steven Ilmer Room 441, Education Building; 577-1620

ASSISTANT DEAN, ACADEMIC SERVICES:

Janice W. Green Room 489, Education Building; 577-1605

INTERIM ASST. DEAN, ADMIN. AND ORGANIZATIONAL STUDIES:

JoAnne Holbert Room 389, Education Building; 577-1729

ASSISTANT DEAN, TEACHER EDUCATION:

Sharon Elliott Room 241, Education Building; 577-0902

ASST. DEAN, THEORETICAL AND BEHAVIORAL FOUNDATIONS:

JoAnne Holbert Room 341, Education Building; 577-1721

ASST. DEAN, HEALTH, PHYSICAL ED. AND RECREATION:

Sarah Erbaugh Room 261, Matthaei Building; 577-6210

Mailing address for all offices:

Wayne State University, 5425 Gullen Mall, Detroit, Michigan 48202

ACADEMIC SERVICES

Office: 489 Education; 577-1605

Assistant Dean: Janice W. Green

Graduate Advising: Sheri Burrell, Stuart Itzkowitz

Undergraduate Advising: Stephanie McPhee, Sallie Smith-Brown, Rebecca Wright

Purposes

The Academic Services Division is responsible for admitting undergraduate and graduate students to programs of the College of Education. The Division is also responsible for maintaining all College of Education student files, processing and certifying graduation, and processing Administrative and Teaching Certificates. In addition, the Division provides a placement service for graduates seeking employment in the field of education.

The Division provides information and advice concerning programs, admission procedures, administrative and teaching certificates, and general University policy.

Other services provided include preparation of the *Schedule of Classes*, and evaluation of transcripts. The unit also maintains curriculum guides and community college equivalency tables, approves official *Plans of Work*, and monitors the College probation system.

Off-Campus Centers

The College offers graduate course work through the College of Lifelong Learning in off-campus centers throughout the Detroit metropolitan area. Courses given at these centers provide residence credit and are comparable to the offerings on the main campus.

Alumni Association

The College of Education Alumni Association (formerly Detroit Teachers College Alumni Association) was organized in 1893 in connection with the Detroit Normal Training School. In the years since its origin, its membership has continually increased.

The aims of the Association, as set forth in its constitution, are (a) to foster a spirit of loyalty to the College, (b) to raise the standards of the teaching profession, (c) to assist professionally and financially those who need help, (d) to keep alive the spirit of real fellowship, and (e) to encourage worthwhile contacts between the student body and the Alumni Association. In addition to being supportive of the University and meeting the needs of the membership through appropriate programs, the Association, in recent years, has addressed itself to ways in which it can be of service to the broader community, recognizing that only through this commitment can it be a viable force in an urban university setting.

The Alumni Association has been generous in its gifts to the College. A gift provided complete furnishings for two rooms in the College of Education building—the Alumni Conference Room and the Faculty Lounge. The Alumni Association provides scholarships for deserving students, sponsors the Golden Anniversary Tea in honor of fifty-year graduates of the College, joins with the faculty and administration of the College in an annual Alumni-Faculty Day Conference, honors both alumni and faculty with awards and recognition, and supports the work of the Dean in carrying forward many activities of mutual interest and concern.

In becoming active members of the Association, the graduates of the College have ample opportunity to uphold and develop the best movements and ideals set forth by educational leaders and to lead in professional friendliness among all teachers.

ADMINISTRATIVE and ORGANIZATIONAL STUDIES

Office: 389 Education Building; 577-1729

Interim Assistant Dean: JoAnne Holbert

Professors

Dale Brandenburg (Research), Roger A. DeMont, Joella H. Gipson-Simpson, Gary R. Morrison, Rita C. Richey, William Sosnowsky (Emeritus)

Associate Professors

Michael F. Addonizo, Burnis Hall

Assistant Professors

Richarde W. Donelan, Gary C. Powell, Iris Simpkins (Research)

Senior Lecturers

Alvin L. Edelson, Frances LaPlante - Sosnowsky

Lecturers

Lynn Miller - Wietcha, Lee S. Randall

Graduate Degrees

MASTER OF EDUCATION with majors in *Educational Leadership and Instructional Technology*

EDUCATION SPECIALIST CERTIFICATE Programs with majors in *General Administration and Supervision, and Instructional Technology*

DOCTOR OF EDUCATION with majors in *General Administration and Supervision, Higher Education¹, and Instructional Technology*

DOCTOR OF PHILOSOPHY with majors in *General Administration and Supervision, Higher Education¹, and Instructional Technology*

The Division of Administrative and Organizational Studies has as its primary goal the development and enhancement of leadership and technology in educational systems, organizations, and institutions.

It is within the scope of this division to study emergent trends and educational innovations; to develop rationales for supporting educational change; and to present viable programs of study for advanced students in education which will enable them to function skillfully as educational leaders in facilitating change, and in developing and conducting on-going programs. Three program areas, General Administration and Supervision, Higher Education, and Instructional Technology, are under the guidance of this division. Applicants are advised to obtain program materials from the Division and discuss them with an adviser prior to making application.

EDUCATION ADMINISTRATION

In this area the College offers the Master of Education in Educational Leadership, Specialist Certificates and doctoral degrees with a major in General Administration and Supervision.

The master's degree program is designed to assist teachers in improving their competence in leadership roles in schools and the community. It is a basic, entry-level stage in this discipline.

Individuals aspiring to positions such as assistant principal, principal, director, federal coordinator, assistant superintendent and superintendent should undertake study at the specialist and doctoral levels in general administration and supervision. Within the general administration and supervision specialist and doctoral programs additional areas of emphasis are available, including elementary administration and supervision, secondary administration and supervision, and special education administration. This latter emphasis prepares persons for positions as special education administrators, directors, supervisors and curriculum resource consultants and specialists. Programs for state certification in administration are available in the following areas: elementary, secondary, central office administration, superintendency, and school business official.

The education administration program area is responsible for recommending to the Michigan Department of Education non-classroom professional personnel for approval to function in state-reimbursed special education programs. Applicants for the area of special education administration should possess full approval in a categorical or ancillary area of special education.

Master of Education with a major in Educational Leadership

Admission: see page 73.

DEGREE REQUIREMENTS: General requirements for the Master of Education degree may be found on page 73. This major in educational leadership is offered only as *Plan B or C* options as defined on page 73; specific requirements are as follows:

The required thirty-five credits must include EDA 7620, 7660, 7670, 7690, 8650, 8990; ED 7999, and one course selected from: EDA 7640 or 7650.

EDA 7600 is required as part of the six-credit general professional (core) area. The remaining four credits may be selected from the list of General Professional (Core) courses on page 73 of this Bulletin.

Students interested in emphasizing special education administration at the master's level should consult with the adviser in that area to select courses.

Education Specialist Certificate with a major in General Administration and Supervision

Admission: see page 73.

CERTIFICATE REQUIREMENTS: A minimum of thirty credits is required for this certificate. Basic requirements are shown on page 73. Since this program is specifically designed to strengthen the individual background of teachers and administrators, all *Plans of Work* are developed in consultation with the appropriate adviser.

Doctor of Education with a major in General Administration and Supervision

Admission: see page 75.

DEGREE REQUIREMENTS: The general requirements for this degree are stated on page 75. The Miller Analogies Test and a Departmental Written Examination, as well as leadership experience with adults, are required for admission. Specific degree requirements are as follows:

Requirements for this major are determined in consultation with the assigned adviser. A minimum of six credits is required in Foundations of Education (Doctoral Seminars). Two courses are to be selected from EHP 9600, EDP 9310, EDS 9620, and TED 9130. Students must also complete at least eleven credits in research techniques including EER 7630, EDA 8180, an advanced course, as well as research electives appropriate to their needs.

1. An admission moratorium is in effect for this program.

Doctor of Philosophy with a major in General Administration and Supervision

Admission: The criteria for admission to the Ph.D. program are essentially the same as those for the Ed.D. and are stated on page 75 of this bulletin. The Miller Analogies Test, a departmental written examination and evidence of past research efforts and interests are required for admission.

DEGREE REQUIREMENTS: The general requirements for this degree are stated on page 75; specific requirements are as follows:

Of the minimum thirty credits required for the major, twenty-four must be in education administration courses with at least twenty credits in regular course work. Six credits are required in Foundations of Education (Doctoral Seminars), and two courses are to be selected from EHP 9600, EDP 9310, EDS 9620, and TED 9130. A minimum of ten credits is required in a single subject field to constitute the cognate, and a minimum of fifteen credits is required in research course work.

HIGHER EDUCATION¹

Programs leading to the Ed.D. or Ph.D. degrees for those who seek careers in higher education or education-related positions in business, industry, government, social agencies, and health agencies are offered in this area.

Doctoral Degrees with a major in Higher Education

Admission: see page 75. Admission to the Ph.D. program in higher education requires completion of the Miller Analogies Test and a departmental written examination.

DEGREE REQUIREMENTS: The general requirements for the Ed.D. and Ph.D. degrees are stated on page 75; specific requirements are as follows:

The Ed.D. program requires a cognate of twelve credits in professional education, while the Ph.D. program requires a cognate of ten credits in a subject field. The research requirements for the Ed.D. consist of EER 7630, HED 8590, and two courses selected from EER 7640, 7650, 8800, or 8992.

The research requirements for the Ph.D. consist of EER 7630, 7650, 8800, 8820, and HED 8590.

INSTRUCTIONAL TECHNOLOGY

Each degree and certificate program in instructional technology is designed to prepare persons for positions in educational institutions, business and industrial organizations, and health care and other human services agencies. The newest technologies are incorporated into these programs, enabling the graduate to function in the ever-changing roles of this profession, including: instructional designer, developer, or researcher; computer and video applications specialist; media or learning resources consultant or manager; teacher or curriculum specialist; and performance technologist, trainer, training manager, or consultant. Students can achieve advanced skills in specialty areas such as:

1. Instructional design and evaluation;
2. Performance improvement, training and organizational development;
3. Interactive technologies design and development;
4. Technology applications in the schools;
5. Instructional media design and production;
6. Research and publication in the field; and
7. Other emerging applications of instructional technology.

Further information can be found on the Instructional Technology Webpage at the following address: <http://www.coe.wayne.edu/instructional-technology>

Master of Education with a major in Instructional Technology

Admission: see page 73. The Graduate Record Examination is required for those students with undergraduate honor point averages below 2.40, and may be required for those with undergraduate h.p.a.s between 2.40 and 2.80. Contact the program area for further information.

DEGREE REQUIREMENTS: There are three program emphases at the Master's level: 1) Performance Improvement and Training; 2) Interactive Technologies; and 3) K-12 Educational Technology. Each emphasis is directed toward different career opportunities and requires a minimum of thirty-six credits. General requirements for the Master of Education may be found on page 73. This degree in instructional technology is offered only as a Plan C option, as defined on page 73. Courses required for Emphasis 1 include: I T 6110, 7100 or 8100, 7110, 7150, 7320, eight credits in I T specialty courses, and ED 7999. Courses required for Emphasis 2 include: I T 6110, 7100, 7140, 7150, 7220, 7230, six credits in I T specialty courses, and ED 7999. Courses required for Emphasis 3 include: I T 5110, 6110, 7100, 7130, 7150, eleven credits in I T specialty courses, and ED 7999. Requirements for the credits in General Professional Core courses vary in terms of the program emphasis.

Educational Specialist Certificate with a major in Instructional Technology

Admission: see page 74.

CERTIFICATE REQUIREMENTS: A minimum of thirty-six credits is required for this certificate. Basic requirements are shown on page 74. The specific courses required to develop an area of concentration include I T 6110, 7100, 7110, 7150, 8100, 8110, and 8150. General emphases can be directed toward applications in performance improvement and training, technology in the K-12 setting, or interactive technologies.

Doctoral Degrees with a major in Instructional Technology

Admission: see page 75. Admission to the Ph.D. and Ed.D. programs in instructional technology require completion of the Miller Analogies Test and the general aptitude sections of the Graduate Record Examination.

DEGREE REQUIREMENTS: The general requirements for these degrees are stated on page 75. Core requirements in the major include I T 6110, 7100, 7110, 7150, 8100, 8110 and 8150. In addition, Ph.D. students are required to complete twelve credits in I T theory and ten credits in I T specialty area course work; Ed.D. students are required to complete eight credits in I T theory course work and twenty credits in I T specialty area course work. A minimum of six credits is required in Foundations of Education (Doctoral Seminars). Two courses are to be selected from EHP 9600, EDP 9310, EDS 9620, TED 9130, and EDA 9790. Fifteen credits in research courses are required in this program for Ph.D. students, including EER 7630, 8800, 8820 or 8700 and a coordinate computer laboratory experience for each; and I T 9110. Thirteen credits in research are required for Ed.D. students, including EER 7610 or 8720, 7630, 8800 or 8700 and a coordinate computer laboratory experience for each; and I T 9110. Additional coursework is required in a cognate area and in dissertation research requirements.

A minimum of 112 credits are required for a doctoral degree in instructional technology. All doctoral committees must include a minimum of two faculty members from Instructional Technology; three faculty members from this field are preferable.

1. An admission moratorium is in effect for this program.

GRADUATE COURSES

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

EDUCATION ADMINISTRATION (EDA)

7600 The Structure of American Education. Cr. 2

Major organizational, financial, administrative, legal and extra-legal problems affecting public education in the United States. Role of the educator in effecting change. (T)

7620 Introduction to Administration. Cr. 4

Conceptual framework of the administrative process; interrelationships between the person, the job, and the organizational setting; the way formal organizations, and political, social and economic factors influence administrative decision making. (T)

7640 The Elementary School Principalship. Cr. 4

Prereq: teaching experience. For experienced teachers and administrators entering the field of elementary school administration. Research findings and sources of information in the field. The principal's role in instructional leadership. A concurrent field experience is required with the lecture component of this course; specifications are provided in the course syllabus. (W,S)

7650 Secondary School Administration. Cr. 4

Prereq: teaching experience. Organization and administration of middle, junior and senior high schools. Analysis of administrative problems relating to curriculum improvement, staff personnel, guidance, instruction, school-community relations, and student activities. A concurrent field experience is required with the lecture component of this course; specifications are provided in the course syllabus. (F,S)

7660 Administrative Leadership in School-Community Relations, Public Relations, and Adult Education. Cr. 4

Relationships between the school and the community; special reference to social change, community needs and the total school program; demographic and public relations techniques for school improvement, program development in special area, and millage campaigns in the context of the structure, function, and organization of the total educational system in a multicultural and pluralistic society. (T)

7670 Economic Issues in Education. Cr. 3

Economic issues in education at the local, intermediate, state, and federal levels. (W,S)

7690 Introduction to Michigan School Law and School Finance. Cr. 4

Constitutional, legal, and fiscal factors affecting Michigan public education. (T)

7800 Administration and Supervision of Special Education. Cr. 4

Professional problems; standards and procedures; references to history, development, philosophy, legal provisions, rules and regulations; major developments and trends at federal, state and local levels; services of other organizations and agencies. (F)

7810 Michigan Special Education Law. Cr. 4

Implications of statutes and regulations undergirding the education of the handicapped; educator's role in implementing, monitoring and influencing state and federal mandates for special education. (W)

7820 Administration and Supervision of Special Education Resource Consultant Programs. Cr. 4

Offered for S and U grades only. Role and setting of the special education curriculum resource consultant. Administrative and supervisory requirements and competencies for the program. (T)

7830 Practicum in Special Education Administration and Supervision. Cr. 2-8

Offered for S and U grades only. Supervised field-based experiences or individualized and contracted plan of supervised field study for special education administrators, curriculum resource consultants, supervisors, administrative consultants, and project directors. Multi-level practicum sites arranged. (T)

8180 Research Seminar. (HED 8590) Cr. 2-6 (Max. 8)

Prereq: admission to doctoral program. Students develop research proposals, evaluate each other's research designs, and conduct any necessary pilot studies. (F)

8610 Management Planning Techniques. Cr. 4

Selected management planning techniques emphasizing effective utilization of resources in education. (W)

8620 School Personnel Administration. Cr. 4

Analysis of the personnel function in educational administration. (F,S)

8630 Supervision. Cr. 4

Basic issues in motivation, job satisfaction, and goal attainment in educational and human service organizations. Establishing productive supervisor/staff relations. Monitoring employee performance. (F,S)

8640 Organizational Development: Leadership in Directing Organizational Change. Cr. 3

Theories of self-renewal and self-correction and coping with change within personnel systems in organizational structures. Application of methods and techniques as applied to educational institutions. (I)

8650 Staff Development and School Improvement. Cr. 2-6 (Max. 6)

Offered for S and U grades only. A clinical experience in planning, design, and implementation of in-service and of staff development programs. (T)

8670 Collective Negotiations. Cr. 4

Development of negotiation in education; features of applicable laws; strategy; analyses of existing contracts; composition of management negotiating team. (I)

8680 Seminar in Administrative and Organizational Behavior. Cr. 4

Research and literature related to formal organizations; administrative activity which guides behavior of people in organizations; organizational theory as it relates to group interaction. (F)

8710 Readings in General Administration. (HED 8510) Cr. 4

Prereq: admission to doctoral program. Directed readings in the principles underlying administration in education, government, business and social agencies and other major areas. (W)

8750 Planning and Improving School Facilities. Cr. 3

Writing educational specifications, developing long range building and curriculum programs, improving and modifying existing buildings; planning for declining enrollments and special education. (I)

8880 Workshop in Administrative and Organizational Studies. Cr. 1-10 (Max. 10)

Offered for S and U grades only. Practicum in the study of current problems affecting administrative and organizational studies. (Y)

8990 Internship in Administration. Cr. 2-8 (Max. 8)

Prereq: consent of adviser. Offered for S and U grades only. Supervised experience in administration of public education, government, business, and social agencies. Internship in cooperating school system. Includes seminar. (T)

9600 Seminar in Research and Theory of Administration. Cr. 3

Prereq: EDA 7620. Research and theory relating to administration. Examination of textbooks, journals, and associations which promote educational administration research; review of the focus of inquiry and methodology for research in educational administration. (W)

9790 Doctoral Seminar in Educational Administration. Cr. 3

Prereq: admission to a doctoral program in education; for doctoral majors in other areas of concentration. Seminar, lecture, discussion, field trips. Purposes of education as defined in federal and state constitutions, statutes and administrative rules; interpretation of policy statements of organizations and commissions. Role of the education leader in our society. (T)

HIGHER EDUCATION (HED)

8500 The American College. Cr. 4

Survey of higher education in the United States today. Examination, through extensive reading, lecture and discussion, of the types of institutions, purposes, programs, organization, governance and control, planning, institutional life, role of faculty and administration, financing, and current trends. (F)

8510 (EDA 8710) Readings in General Administration. (HED 8510) Cr. 4

Directed readings in the principles underlying administration in education, government, business, and social agencies and other major areas. (W)

8530 Seminar in the History and Philosophy of Higher Education. (EHP 7670) (HIS 8110) Cr. 4

The growth and development of American higher education including events, circumstances, and influential ideas. Comparison of systems of higher education in selected other countries. Emphasis on the relationship between social, political, and economic change and the evolution of higher education. (F,W)

8540 The Community College. Cr. 4

Overview of characteristics of community colleges: origins, missions, functions, program offerings, faculty, staffs, students, organization, governance, finance, and special issues. (Y)

8550 Government and Higher Education. Cr. 4

Examination of the role of government and politics in effecting higher education policy, structure, governance, and finances. Exploration of planning and coordination arrangements, and the function of various governmental agencies. (S)

8560 Administration in Higher Education. Cr. 4

Examination of alternative theories of organizational and administrative behavior as these relate to colleges and universities. Consideration of the issues of academic governance and college bargaining as they impact on the role of the administrator. Special projects according to positions held and particular interests of students. (F,W)

8570 Contemporary Issues in Higher Education. Cr. 4

Seminar for advanced doctoral students. Intensive exploration of major issues and problems confronting higher education. (W)

8590 (EDA 8180) Research Seminar. Cr. 2-6 (Max. 8)

Students develop research proposals, evaluate each other's research designs, and conduct any necessary pilot studies. (F)

INSTRUCTIONAL TECHNOLOGY (I T)

5110 Technology Applications in Education and Training. (LIS 6360) Cr. 3

Technological applications to education, training, and instruction within educational, industrial, and human services settings. Students examine, develop, and/or evaluate unique instructional programs. For educators and non-educators interested in exploring technological applications in education. (F,W)

5120 Producing Technology-Based Instructional Materials. (LIS 6370) Cr. 2-3

Design and development of instructional media and materials for use in educational, industrial, and/or human services programs; development of computer-generated instructional materials. (S)

5130 Computer-Programmed Multi-Screen/Multi-Image Presentations. (AED 5200) Cr. 3

Examination of methods and procedures for producing multi-screen/multi-image presentations including the use of micro-processing computers. Students plan and produce a multi-screen or multi-image presentation. Material fee as indicated in the Schedule of Classes. (W)

5190 (AED 5190) Light, Sound, Space, and Motion. Cr. 3

Required for certification in Art Education. Laboratory experiences in planning and producing animated films, instructional video, and slide/sound presentations. Students prepare storyboards, write scripts, prepare titles and credits, mark on film and slides, produce Super-8 animation, use 35mm camera with copy stand, edit, splice film, record and synchronize sound tracks, and produce single camera instructional video. Methods and materials for teaching film and video in schools, producing visual aids, or producing film/slides/video for artistic expression. Material fee as indicated in the Schedule of Classes. (F)

6060 Scriptwriting for Instructional Video. Cr. 3

Techniques of writing scripts for instructional video productions for use in educational training or human services programs, from program concept to production-ready script. (F)

6110 Foundations of Instructional Systems Design. Cr. 4

Alternative systems models of instructional design; basic design principles, methods and techniques of pre-design analysis; instructional strategy selection and sequencing. (T)

6150 (AED 6150) Instructional Applications of Computer Graphics. Cr. 3

Instruction and laboratory experiences in the design, production, and application of computer graphics in the classroom and other educational settings. Programming experiences in animation, charts and graphs, and simple drawing techniques. Material fee as indicated in the Schedule of Classes. (T)

7060 Developing Instructional Video for Education and Training. Cr. 4

Prereq: I T 6060, 6110 recommended. Techniques for developing video for instruction; program elements, graphics, small format video and applications of instructional design to video production. (W)

7100 Introductory Graduate Seminar in Instructional Technology. Cr. 2

Introduction to the field of instructional technology: careers, job roles, organizations, scholarly literature, requisite technology skills; introduction to course content and initial planning for student's programs. (T)

7110 Advanced Instructional Design Tools and Techniques. (H E 7540) (LIS 7350) Cr. 4

Prereq: I T 6110. Exploration and application of those techniques, tools and competencies characteristic of expert designers. Topics include: use of design software, program design, advanced analysis techniques, motivation design, rapid prototyping, reducing design cycle time, designing instruction for diverse learner populations. (W)

7120 Project Management. Cr. 4

Principles and techniques of project management. Topics include: tools used to manage instructional projects, components of management plans, software used to create management plans. (S)

7130 Delivering Professional Presentations. Cr. 1-9

Principles and techniques for making professional presentations to a variety of audiences. Practice in delivering extemporaneous and manuscript types of presentations for informative and persuasive purposes. Types of visual support, including presentation software. (S)

7140 Interactive Courseware Design. (SPR 8570) Cr. 4

Prereq: I T 6110; Windows literacy recommended. Design, development, production of interactive courseware. Demonstration of Authorware Professional authoring software; production tools and techniques; instructional systems design procedures in development and evaluation of 30-45 minute instructional module. (F,W)

7150 Educational Product and Program Evaluation. (H E 7550) Cr. 4

Prereq: I T 6110. Techniques and criteria for evaluation of commercial products; models of instructional evaluation; methods of large-scale curriculum evaluation; summative evaluation; formative evaluation for review of instructional design. (F,W)

7170 Media Literacy. Cr. 3

Developing an informed and critical understanding of the nature of the mass media and their techniques; impact of these techniques. How the media are organized and operate, how they produce meaning and construct reality. Producing media products. (Y)

7180 Message Design and Display. Cr. 4

Analysis of principles of message design, foundational research, application in publication of print and electronic materials. Techniques of preparing instructional, informational, and marketing messages using alternative layouts and graphics. Laboratory work using advanced computer configurations. (F)

7210 Distance Learning. Cr. 4

Exploration and demonstration of techniques of designing and delivering instruction and two-way interactive video and audio technologies. Analysis of the theoretical foundations and principles of designing and delivering instruction over distance. (W)

7220 Multimedia Design and Development. Cr. 4

Prereq: I T 6110 recommended; Windows literacy recommended. Design, development and production of interactive multimedia programs. Demonstration of Multimedia Toolbook software, essential multimedia production tools and techniques in the development of an interactive presentation. Students work in instructor-assembled development teams. (F,W)

7230 Advanced Multimedia Design and Development. Cr. 4

Prereq: I T 7220 or consent of instructor; Windows literacy recommended. Advanced multimedia production and authoring techniques. Exploration of programming theory and mastery of Multimedia Toolbook's OpenScript language. Individual development of variety of limited exercises and one small multimedia program. Analysis of business concerns of a multimedia producer. (S)

7240 Application of New Technologies. Cr. 2-12.

Analysis and application of principles of designing instruction and instructional facilities that utilize emerging technologies in a variety of educational and training settings. Variable offerings address topics such as delivering education, training, and multimedia on the Internet, and technology facilities design. (T)

7250 Designing Instruction for Older Adult Learners. Cr. 4

Examination and synthesis of research about persons 55 and older as they engage in learning events. Literature of psychology, sociology, anthropology, gerontology, education, medicine and related fields and their influences on educational gerontology. For students in instructional technology and other areas of education, and for those completing certificates in gerontology. (S)

7320 Human Performance Technology. Cr. 4

Fundamentals of human performance technology, performances, standards, tools and techniques for the performance improvement consultant; analyzing jobs and tasks; improving individual performance; performance technology and instructional development strategies and tactics for performance improvement, performance support systems, organizational behavior; strategic planning and thinking; general processes; professional practices; human performances interventions of an instructional and non-instructional nature. (W,S)

8100 Background, Issues and Trends in Instructional Technology. Cr. 4

History of instructional technology practice and intellectual foundations; implication for current issues and trends. Factors likely to affect the future of the field, including contributions of key leaders. Electronic communication techniques used to explore issues with others in the field. (F)

8110 Advanced Instructional Design Theory and Research. Cr. 4

Prereq: I T 6110, 7110. Analysis of theoretical foundations of instructional design and their application in design practice. Current design research and theory, future directions in design theory and practice. (F)

8120 Practicum in Instructional Technology. Cr. 1-9 (Max.9)

Prereq: I T 6110. Offered for S and U grades only. Students design, develop, use, and evaluate instructional systems and subsystems in an educational, business, industrial, or human services setting. (T)

8130 Individual Projects in Instructional Technology. Cr. 1-6 (Max. 6)

Prereq: consent of instructor. Students develop instructional technology material packages and devices through individual design and production. (T)

8150 Needs Assessment and Program Validity. Cr. 3

Needs assessment models, procedures and approaches. Bases for designing programs, validating programs, and assessing continuing validity of ongoing programs. Students undertake a needs assessment validation study to confirm the validity of the intents of a new or existing program. (W,S)

8180 Readings in Instructional Technology. Cr. 1-6 (Max. 6)

Prereq: nine credits in instructional technology. Individually-paced course: investigation of recent research studies and theoretical essays in the field. (T)

8320 Performance Consulting. Cr. 4

Prereq: I T 7320. Practical application of principles of performance consulting to solve problems in large and small organizations. Topics include: role of performance consultant, identifying business needs, assessing performance, contracting techniques, managing the performance improvement process. (F)

9110 Advanced Research Seminar and Practicum. Cr. 3

Prereq: doctoral student near completion of content major and research methods courses. Major types of research and their roles in instructional technology; includes qualitative, quantitative and developmental methodologies. Analysis of key issues and concerns. Students draft a dissertation research proposal, application for human subjects review, and timeline for degree completion. (W)

HEALTH, PHYSICAL EDUCATION and RECREATION

Office: 261 Matthaehi Building; 577-6210
Assistant Dean: Sarah J. Erbaugh

Associate Professors

David B. Blievernicht, Hermann Engels, Sarah J. Erbaugh, Robert Kohl, Jeffrey Martin, Diane Pick, Weimo Zhu

Assistant Professors

Mariane Fahlman, Avanelle Kidwell, Pam Kulinna, Peter A. Roberts, William W. Sloan, John C. Wirth

Lecturers

Roy Allen, Judy Bowen, Timothy Domke, Mary Jane Heaney, Steve Singleton, Delano Tucker

Graduate Degrees

MASTER OF EDUCATION with majors in Health Education and Physical Education

MASTER OF ARTS with a major in Recreation and Park Services

MASTER OF ARTS with a major in Sports Administration

Health, physical education, and recreation, as integral parts of a general education, focus attention upon the vital needs of the human being to acquire attitudes, knowledge and skills necessary for regular participation in healthful living and physical and leisure-time activities. Accordingly, this division provides courses of instruction both to promote physical well being through athletic and exercise programs, and to prepare teachers and practitioners to promote such health in others. The decreased demands for physical vigor, as well as the increased tensions caused by the technological progress of the modern society, demand a scientific approach to these vital phases of well-being.

The Division of Health, Physical Education and Recreation provides courses of instruction in health education, physical education, sports administration, and recreation and park services for the general student body; a program in driver education is also offered. In addition, it provides professional curricula at the undergraduate and graduate levels for those students seeking careers in these areas. Courses in these areas may be used to meet degree and curricular requirements of the various schools and colleges of the University.

Advisers: Each student admitted to the College at the graduate level and seeking a degree is assigned to a faculty member who acts as the adviser. The adviser guides the student in the selection of courses and counsels the student in solving academic problems.

Assistantships, Scholarships and Financial Aid

A number of assistantships are available in the area of Physical Education. Application should be made to the Office of the Assistant Dean, 261 Matthaehi Building. Scholarships, loans, work-study, and other types of financial aid are available through Wayne State University; contact the University Office of Scholarships and Financial Aid; 577-3378.

Admission

Admission to graduate programs in the Division of Health, Physical Education, and Recreation is contingent upon admission to the Graduate School; for requirements, see page 16. In addition, applicants to any program in the Division must meet the following criteria, as applicable:

1. Applicants must submit scores from the Graduate Record Examination (GRE) (General Test Package 1). A desirable composite score on the GRE is 1500 (out of 2400 maximum); however, the composite GRE score is only one of a number of factors (also including honor point average, professional experience, and performance in previous graduate course work) that are evaluated in the admissions process.

2. *Regular Admission:* Applicants must have an undergraduate honor point average of 3.0 or above, and an undergraduate degree directly relating to the field of specialization being applied for, or an undergraduate degree accompanied by extensive educational background in a closely-related field.

3. *Regular Admission, Provisional:* Applicants whose undergraduate honor point average is between 2.6 and 3.0, and who otherwise meet the criteria for regular admission, will be admitted on this basis but will be required to successfully complete additional course work and/or other requirements as stipulated by the Division Graduate Officer.

4. *Qualified Admission:* Applicants whose undergraduate honor point average is between 2.25 and 2.6, and who otherwise meet the criteria for regular admission, will be admitted on this basis but will be required to successfully complete additional course work and/or other requirements as stipulated by the Division Graduate Officer.

5. *Non-Degree Admission (Pre- or Post-Master's):* Applicants must have an undergraduate honor point average of 2.25 or above, and an undergraduate degree in any field. Only one semester of full-time graduate study, part-time registrations not to exceed nine credits, are normally permitted in this classification. Based on the approval of the College of Education Graduate Officer, no more than nine credits taken in graduate non-degree admission status may later be applied to graduate degree program requirements. (See 'Graduate Non-Degree Admission,' page 16.)

6. *Post-Bachelor Admission:* Applicants must have an undergraduate honor point average of 2.25 or above, and an undergraduate degree in any field. Post-Bachelor status allows students to elect courses through the 600 level, for undergraduate credit only. (See 'Post-Bachelor Admission,' page 17.)

7. *Special Admission (Non-Degree or Post-Bachelor):* Upon recommendation of an adviser and the Division Graduate Officer, an applicant whose undergraduate honor point average is below 2.25 may be admitted on Non-Degree or Post-Bachelor status (see items 4 and 5, above), if the applicant demonstrates substantial evidence of meritorious academic achievement subsequent to the conferral of his/her undergraduate degree.

Master of Education with a Major in Health Education

Health Education is a professional field that is expanding rapidly, primarily because of recent Federal legislation that has emphasized health promotion and disease prevention as major priorities of national health and social policy. The goal of health education is to facilitate voluntary health-related behavioral and social change through application of the principles of the behavioral and social sciences. As such, health education is concerned with helping individuals and groups to assume responsibility for their health by learning and adopting behaviors, and by supporting social policies that can promote and maintain health. To this end, those earning a Master of Education with a major in health education develop competencies in: assessing individual and group needs for health education; planning, implementing, and evaluating effective health education programs; coordinating provisions for health education; acting as resource persons in health education; and communicating health and health education needs, concerns and resources.

DEGREE REQUIREMENTS: The Master of Education with a major in health education degree is offered under the following options:

Plan A: *Thirty-six credits including an eight-credit thesis*

Plan B: *Thirty-six credits including a three credit project*

Requirements for this degree include: general professional education courses; specialization courses and elective courses. Professional education courses and electives should be chosen in consultation with an adviser. A minimum h.p.a. of 3.0 is required for graduation. All course work must be completed in accordance with the regulations of the Graduate School and the College of Education governing graduate scholarship and degrees; see pages 16-30 and 73-77, respectively.

General Professional Courses: Students must select EER 7630 and one other course from the following general professional education courses.

	<i>Credits</i>
EDP 5450 — Child Psychology	3
EDP 5480 — Adolescent Psychology	3
EDP 7350 — The Learning Process	3
EDS 7630 — Educational Sociology	3
EER 7610 — Evaluation and Measurement	3
EER 7630 — Fundamentals of Statistics (required course)	3
H E 7550 — Educational Product Evaluation	4
	Minimum: 6

Required Specialization Courses

H E 6350 — Health Education and the Nation's Health	3
H E 6420 — Introduction to Health Education Program Design	3
H E 6530 — Principles & Practice of Health Education	3
H E 6550 — Teaching Methods in Health Education	3
HPR 6540 — Workshop in HPR (approved topic)	3
HPR 7500 — Research Methods	4
HPR 8540 — Theories of Health Behavior	3
HPR 7999 or 8999 — Master's Project, or Thesis	3-8
	Minimum: 25

Electives: Additional courses from a list approved by the adviser, to complete the thirty-six credits required for graduation.

**Master of Education
with a Major in Physical Education**

The Master of Education with a Major in Physical Education is offered under two specializations: physical education pedagogy, and exercise and sport science. Completion of this degree requires satisfaction of one of these specializations as outlined below.

Admission to this program is contingent upon admission to the Graduate School and the Division of Health, Physical Education, and Recreation; for requirements, see page 16, and the section above on 'Admission.'

— Physical Education Pedagogy

This specialization is designed to prepare students for academic or professional careers in physical education pedagogy. It involves the study of concepts related to conducting physical activity programs, with an emphasis on those relating to school and sport contexts.

DEGREE REQUIREMENTS: This Master of Education degree is offered under the following options:

Plan A: *Thirty-four credits including an eight credit thesis*

Plan B: *Thirty-four credits including a three credit project*

Requirements for this degree include: general professional education courses; specialization courses and elective courses. Professional education courses and electives should be chosen in consultation with an adviser. A minimum h.p.a. of 3.0 is required for graduation. All course work must be completed in accordance with the regulations of the Graduate School and the College of Education governing graduate scholarship and degrees; see pages 16-30 and 73-77, respectively.

General Professional Courses: Students must elect a minimum of six credits from the following courses:

CED 6700 — Role of the Teacher in Guidance	.2
EDA 7600 — Structure of American Education	.2
EER 7610 — Evaluation and Measurement	2-3
EDS 7630 — Educational Sociology	2-3
EHP 7600 — Philosophy of Education	2-3
EDP 5450 — Child Psychology	2-3
EDP 5480 — Adolescent Psychology	2-3
EDP 7350 — The Learning Process	2-3
RDG 6120 — Reading in the Content Areas	.3
SED 7050 — Mainstreaming Handicapped Students	.2
	Minimum: 6

Specialization Courses

HPR 7500 — Research Methods	.4
P E 7520 — Alternative Styles of Teaching in Physical Education	.3
P E 7550 — Curriculum Development in Physical Education	.3
HPR 7999/8999 — Master's Project, Essay, or Thesis	3-8
And four courses from the following (one <i>must</i> be P E 8530 or P E 8540):	
P E 6310 — Physiology of Exercise	.3
P E 6320 — Fitness Assessment and Prescription	.3
P E 7510 — Physical Education: History and Philosophy	.3
P E 7570 — Psychosocial Physical Education	.3
P E 7580 — Biomechanical Analysis of Motor Activity	.3
P E 8530 — Motor Learning	.3
P E 8540 — Theories of Motor Development	.3
	Minimum: 25

Electives: Additional courses from a list approved by the adviser to complete the thirty-four credits required for graduation.

— Exercise and Sport Science

This specialization is designed to prepare students for careers in areas such as exercise physiology, cardiac rehabilitation, sport psychology, and motor control/development/learning, and measurement and evaluation.

DEGREE REQUIREMENTS: This specialization is offered only as a Plan A option (see page 73); thirty-four credits are required, including eight credits for the master's thesis. Students selecting this program will concentrate in one of five areas: biomechanics, exercise physiology, measurement and evaluation, motor control/development/learning, or sports psychology.

General Professional Courses

EER 7630 — Fundamentals of Statistics	.3
and	
EER 8800 — Variance and Covariance Analysis	.3
or	
EER 8820 — Multivariate Analysis	.3
	Minimum: 6

Specialization Courses

REQUIRED:

HPR 6540 — Workshop: Principles of Exercise Science	.2
HPR 7500 — Research Methods	.4
HPR 8999 — Master's Thesis Direction	.8

Plus a minimum of nine credits (with adviser's approval) from:

HPR 6540 — Workshop	1-3 (Max. 6)
HPR 7900 — Special Problems	1-3 (Max. 6)
HPR 8750 — Internship	.3
P E 5500 — Evaluation and Measurement in Health & P.E.	.3
P E 6310 — Physiology of Exercise	.3
P E 6320 — Fitness Assessment & Prescription	.3
P E 7570 — Psycho-Social Aspects of Physical Education	.3
P E 7580 — Biomechanical Analysis of Motor Activity	.3
P E 8530 — Motor Learning	.3
P E 8540 — Theories in Motor Development	.3
P E 8560 — Exercise Physiology	.3
	Minimum: 21

Electives: Additional courses from a list approved by the adviser to complete the thirty-four credits required for graduation.

— Wellness Clinician/Research

This specialization is designed for students interested in pursuing a career in the field of health and fitness promotion.

DEGREE REQUIREMENTS: This Master of Education degree is offered under the following options:

Plan A: Thirty-four credits including an eight credit thesis

Plan B: Thirty-four credits including a three credit project and a three-credit internship

General Professional Courses	Credits
EER 7630 — Fundamentals of Statistics	3
Specialization Courses	
HPR 7500 — Research Methods	4
HPR 7560 — Lifestyle Modification Principles	3
P E 6310 — Exercise Physiology	3
P E 6320 — Fitness Assessment and Prescription	3
H E 6420 — Introduction to Health Education Program Design	3
HPR 8999 — Master's Thesis Direction	8
or	
HPR 7999 — Master's Project Direction	3
and	
HPR 6540 — Workshop	2
and	
HPR 8750 — Graduate Internship	3
Minimum: 24	

Electives: Additional courses from a list approved by the adviser, to complete the thirty-four credits required for graduation.

Master of Arts with a Major in Sports Administration

This program is designed to prepare students for a career within the broad spectrum of sports programs, agencies, and related organizations. Students may specialize in one of four areas of concentration: interscholastic athletic administration, intercollegiate athletic administration, commercial sports administration, or professional sports administration. Students may custom-design their curriculum to suit individual educational and employment objectives through elective coursework.

Admission to this program is contingent upon admission to the Graduate School and the Division; for requirements, see pages 16 and 83.

DEGREE REQUIREMENTS: This Master of Arts degree is offered only as a Plan C option, requiring thirty-four credits in course work including eleven credits in required courses, with the remaining credits from courses to be selected in consultation with an adviser. All course work must be completed in accordance with the regulations of the Graduate School and the College of Education governing graduate scholarship and degrees; see pages 16-30 and 73-77, respectively.

Required Courses	Credits
HPR 7500 — Research Methods	4
P E 6410 — Introduction to Sports Administration	3
HPR 8750 — Internship in HPR	4
Minimum: 11	

Electives: Additional courses from a list approved by the adviser to complete the thirty-four credits required for graduation. A minimum of twenty-four of these thirty-four credits required for graduation must be earned in courses within the Division of Health, Physical Education, and Recreation.

Endorsement in Teaching Physical Education for the Handicapped

This program leads to state endorsement in the teaching of physical education for the handicapped. The program requires eleven credits in approved special education courses and thirteen to fifteen credits in adapted physical education courses.

Admission to this program is contingent upon admission to the Graduate School and the Division; for requirements, see pages 16 and 83. Additionally, applicants must possess a valid Michigan teaching certificate in physical education or any area of special education.

ENDORSEMENT REQUIREMENTS	Credits
P E 5400 — Intro. to Phys. Ed. for Exceptional Children	3
P E 5410 — Physical Education for the Exceptional Student	3
P E 5420 — Sports and Recreation for Exceptional Children	3
P E 5430 — Practicum in Phys. Ed. for the Exceptional Student	2-6
SED 5030 — Education of Exceptional Children	3
SED 5110 — Mental Retardation and the Cognitive Process	3
SED 5260 — Ed. of Children with Physical Impairments	4
SED 5600 — Ed. of Hearing- and Visually-Impaired Children	3
Total: 24-28	

Master of Arts with a Major in Recreation and Park Services

The Master of Arts offered in this program area prepares students for careers in city/county recreation departments, youth agencies, military recreation, outdoor education centers, hospitals, substance abuse programs, and long-term care facilities. All students majoring in recreation and park services are automatically enrolled as members of the Student Recreation and Park Association. Professional development seminars are offered to students and professionals in the area each year.

Admission to this program is contingent upon admission to the Graduate School and the Division; for requirements, see pages 16 and 83. When applying for admission, applicants should specify a major in Recreation and Park Services within the College of Education. All students must make arrangements for a personal interview with an adviser in the program area prior to final approval for admission. An undergraduate major or concentration in recreation is required for regular admission. Students lacking this background must take nine credits of course work in recreation and a field experience as prerequisite work before being admitted to the graduate program, or concurrently with courses taken prior to filing a *Plan of Work*. In cases where a student is employed full time in this discipline, the field experience may be waived. In no case will prerequisite course work apply to the graduate degree. Students with an undergraduate honor point average of 3.0 or above will receive regular admission status. Those with an h.p.a. between 2.6 and 2.99 will be admitted on a provisional basis for the first nine credits. If a 'B' (3.0) average is maintained, provisional status will be removed. Students with an average below 2.6 must enroll in nine credits of post-degree work in recreation, and must receive 'A' or 'B' grades in all course work, prior to being admitted to the graduate program. Students with questions regarding admission to this program are urged to call an adviser at 577-6212 or 577-6213.

DEGREE REQUIREMENTS: The Master of Arts degree is offered under the following options:

Plan A: Thirty-four credits including an eight-credit thesis

Plan B: Thirty-four credits including a three-credit essay or project

The thirty-four credits must include the Recreation and Park Services Core courses cited below, electives in the student's area of interest, and three to six credits in courses outside of this area. Students may specialize in either Recreation Administration or Therapeutic Recreation. A *Plan of Work* must be filed prior to completing sixteen credits toward the degree and is developed in consultation with the student's adviser.

All course work must be completed in accordance with the regulations of the Graduate School and the College of Education governing

graduate scholarship and degrees; see pages 16-30 and 73-77, respectively. No more than two grades of 'C' may be received by a student, and any 'C' grades must be offset by a corresponding number of 'A' grades restoring the student's overall honor point average to 3.0. All work toward the Master of Arts degree must be completed within a period of six years.

Required Core Courses	Credits
HPR 7500—Research Methods	4
R P 7610—Foundations of Recreation and Leisure Services	3
R P 7680 or R P 7640	
— Resources Development and Management	3
— Administration of Therapeutic Recreation Programs	3
HPR 7999/8999—Master's Essay, Project, or Thesis	3-8
Minimum: 13	

Graduate Certificate in Gerontology

This certificate may be earned concurrently with the Master of Arts in Recreation and Park Services by those students with a special interest in working with the elderly. This certificate requires the completion of forty credits. Specific requirements for this certificate are determined by the Institute of Gerontology and may be found on page 38. Students interested in this option are encouraged to contact a Recreation and Park Services adviser at 577-6212 or 577-6213.

GRADUATE COURSES

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

DRIVER EDUCATION (D E)

5730 Teaching Driver Education and Traffic Safety. (TED 5994) Cr. 3

Prereq: valid Michigan driver's license. (F,W)

5740 Problems in Driver Education and Traffic Safety. (TED 5740) Cr. 3

Prereq: D E 5730. Issues and concerns in professional preparation to meet traffic safety needs of schools and communities. (F,S)

5750 Seminar in Driver Education and Traffic Safety. (TED 5750) Cr. 3

Prereq: D E 5740. Behavioral, administrative, and professional aspects of the teaching role in driver and traffic safety education. (W,S)

HEALTH EDUCATION (H E)

6350 Health Education and the Nation's Health. Cr. 3

Survey of national health status; factors aiding and deterring its improvement. Analysis of current and future plans in technology, finance, legislation and ethics of health care. History, philosophy and role of health education. (F)

6420 Introduction to Health Education Program Design. Cr. 3

Prereq: graduate major in Health Education. Overview of health education program process in all practice settings. Introduction to needs assessment, objective writing, staff training, and evaluation in health education. (W)

6430 School Health Curriculum. Cr. 3

Prereq: graduate major in health education. Principles and application of comprehensive school health programming. Role of the school health educator in health services; emphasis on education and environment. (B)

6500 Comprehensive School Health Education. Cr. 3

Overview of comprehensive school health education. Study of major comprehensive health curricula with intensive training in the Michigan model. This class leads to certification to teach the Michigan Model in public schools. (Y)

6530 Principles and Practice of Health Education and Health Promotion. Cr. 3

Prereq: graduate standing and H E 6420 or consent of instructor. Principles and application of health education programs in the community or health care setting. Consultation skills, marketing and motivational strategies within the role of the health educator. (B)

6550 Teaching Methods and Techniques in Health Education. Cr. 3

Strategies employed in dissemination of health information; concepts and skills development. Integration of cognitive skills, classroom management, and student assistance programs, into teaching strategies. (W)

7540 (I T 7110) Advanced Instructional Design Tools and Techniques. (LIS 7350) Cr. 4

Prereq: I T 6110. Exploration and application of those techniques, tools and competencies characteristic of expert designers. Topics include: use of design software, program design, advanced analysis techniques, motivation design, rapid prototyping, reducing design cycle time, designing instruction for diverse learner populations. (F,W)

7550 (I T 7150) Educational Product and Program Evaluation. Cr. 4

Prereq: I T 6110. Techniques and criteria for evaluation of commercial products; models of instructional evaluation; methods of large-scale curriculum evaluation; summative evaluation; formative evaluation for review of instructional design. (F,W)

HEALTH, PHYSICAL EDUCATION, and RECREATION (HPR)

5740 Facility Planning, Design and Construction. Cr. 3

Process of planning, design and construction from dream of a new facility through its completion and opening for business. Methods of working with architects, consultants, engineers and contractors to design and build sports and recreation facilities that optimally support the programs that will use them. Overview of latest concepts, trends, and innovations in activity-related facilities. (F)

6540 Workshop in Health, Physical Education, and Recreation. Cr. 1-3 (Max. 6)

Future and current professionals explore topics of current interest, or work cooperatively on current problems in the field. (T)

6550 Publicity, Promotion and Public Relations. Cr. 2

Practical marketing methods and procedures used in promotion of athletics and HPR-related fields. Development of proposals, workshops, public relations policies. (F)

6560 Media Design and Communication. Cr. 2

Prereq: basic computer/word processing skills. Fundamentals of graphic design and layout for publication; use of computers in promoting, marketing, and managing health, physical education, recreation, and sports programs. (W)

6570 Sports Marketing. Cr. 3

Concepts and principles of marketing as applied to sports. Topics include: structure of sports industry, sports markets and products, market research, and sports sponsorships. (F)

6600 Role of the Health Professional in Substance Abuse. Cr. 3

Health professional's role in identification, treatment and prevention of substance abuse. Basic drug terminology, theoretical perspectives in substance abuse; community and school environments. (W)

6640 Legal Issues in Health, Physical Education, and Recreation. Cr. 3

Identification and analysis of legal issues in the health, physical education, and recreation profession. Review of relevant litigation patterns. (Y)

6650 Health and Recreation Services for the Aged. Cr. 3

Physical, social and emotional aspects of aging. Emphasis on health maintenance and the leisure needs and opportunities of the elderly. (B)

6660 Risk Management in Physical Education and Sports. Cr. 2

Fundamentals of safety and liability and the risks involved in managing activity-related programs. Development of knowledge and skills to recognize and eliminate dangerous situations. (F)

6750 Fieldwork in Health, Physical Education, and Recreation. Cr. 1-4

Prereq: consent of adviser. Professional experience in public or private institutions relevant to student's specialization. Supervision by professional supervisor and university faculty. Can be taken at any time during student's program. (F,W)

7300 Interscholastic Athletic Directing. Cr. 3

Michigan and national interscholastic athletic directing organizations; issues and skills to direct athletic programs in middle and secondary education. Philosophy, personnel, financial and general athletic policies and guidelines. (Y)

7310 Collegiate Athletic Administration. Cr. 3

NCAA and NAIA as governing bodies. Difference in divisions and compliance rules for each division. Current collegiate athletic occupations; current issues and future trends in collegiate athletics. (Y)

7500 Research Methods in HPR. Cr. 4

Student computer account required. Research proposal preparation, including literature review, hypothesis construction, experimental design, and computer-aided data analysis. Application of skills to critical reading of primary sources. (F,W)

7530 Computer Applications in HPR. Cr. 3

Use of microcomputers in physical education: word processing, database management; specific applications such as fitness testing, game statistics. (B)

7540 Concepts of Management in Health, Physical Education, and Recreation. Cr. 3

Responsibilities and concerns of administrators of health, physical education and recreation programs. Basic administrative procedures, policy-making and evaluation; establishment of program goals; alternative management styles; leadership principles. (W)

7560 Lifestyle Modification Principles. Cr. 3

Principles of behavior modification relative to health promotion/wellness field. Methods of changing lifestyle behaviors, including stress management, substance abuse and smoking cessation, to improve quality of life. (B)

7580 Entrepreneurship and Fund Raising in HPR. Cr. 2

Entrepreneurial opportunities created by changing trends and developments in athletics and HPR; development and study of current fundraising concepts and ideas. (W)

7990 Special Problems in HPR. Cr. 1-3 (Max. 6)

Prereq: written consent of supervising faculty. (F,W)

7999 Master's Essay and Project Direction. Cr. 3

Prereq: written consent of supervising faculty. Offered for S and U grades only. Development and review of essay or project. (F,W)

8410 Current Issues in HPR. Cr. 2-4 (Max. 4)

Examination of contemporary problematic issues in health, physical education, and recreation. Systematic approaches to problem-solving and resolution of controversial situations. (F,W)

8540 Theories of Health Behavior. Cr. 3

Prereq: HPR 7560, H E 6530 or C M 7760, HPR 7500 or consent of instructor. Selected theories from behavior sciences developed to apply to people's health actions. (B)

8750 Internship in HPR. Cr. 1-4 (Max. 4)

Prereq: successful completion of two-thirds of master's coursework; written consent of adviser. Professional experience in public or private institutions relevant to student's field of specialization. Initial plan of involvement and final evaluation. (F,W)

8999 Master's Thesis Direction. Cr. 1-8 (8 req.)

Prereq: written consent of supervising faculty. (F,W)

PHYSICAL EDUCATION (P E)

5330 Principles of Athletic Training. Cr. 3

Prereq: BIO 2870 or equiv. Philosophy of athletic training and basic training room protocol. Theory of evaluation techniques, nutrition, emergency techniques. (B)

5340 Prevention, Care and Evaluation of Athletic Injuries. Cr. 3

Prereq: BIO 2870 or equiv. The training room: its purpose, equipment and management. Principles and techniques of treating sprains, strains, and other injuries of the locomotor system and of the skin; evaluation techniques for these injuries. Application of heat, water, massage, electrical stimulation, ultrasound, and special exercises. Basic first aid procedures; training table; observation and directed experiences. Material fee as indicated in the Schedule of Classes. (B)

5350 Exercise Science Internship. Cr. 2-4 (Max. 8)

Prereq: P E 6320, HEA 2330. Supervised experience in health and exercise programs with various populations at approved sites. (F,W)

5400 Introduction to Physical Education for Exceptional Children and Adolescents. Cr. 3

Prereq: EDP 3310 or equiv. Motor characteristics, behavior and developmental sequences associated with handicapping conditions, including traits of gifted and talented individuals. Anatomy and kinesiology of abnormal motor patterns and assessment of physical education skills. Review of adaptive physical education and special education terminology; legislation and student placement models. (F)

5410 Physical Education for the Exceptional Student: Methods and Materials. Cr. 3

Prereq: EDP 3310 or equiv. Writing behavioral objectives for exceptional students, including the gifted and talented, and the handicapped, in physical education. Adaptation of teaching methods and materials to meet the needs of handicapped and gifted students in

physical fitness, fundamental motor skills, individual and group games, and lifetime sports skills. (F,W)

5420 Sports and Recreation for Exceptional Children and Adolescents. Cr.3

Prereq: EDP 3310 or equiv. Implementation of appropriate physical education curriculum for exceptional individuals, the gifted and handicapped. Coaching and training techniques for handicapping conditions in school, recreational, and competitive sports situations. (F,W)

5430 Practicum in Physical Education for the Exceptional Student. Cr.2-6

Prereq: P E 5400, 5410, 5420, consent of chairperson. Offered for S and U grades only. Directed fieldwork placement in teaching physical education to handicapped or gifted individuals in school, camp, or recreational setting. Required for State of Michigan Approval in Teacher of Physical Education for the Handicapped. (F,W)

5500 Evaluation and Measurement in Health and Physical Education. Cr.3

Prereq: senior standing. Student computer account required. Elementary statistical methods and evaluative techniques applied to health, physical education, and recreation. Test construction and standard measurement approaches. (W)

5510 Coaching Principles and Certification. Cr.3

Specific topics on the coach and the athlete in areas of administration, motor learning, physical growth, motor skill acquisition, philosophy, psychology and sociology. (F,W)

6310 (PSL 6010) Physiology of Exercise. Cr.3

Prereq: P E 3570 or equiv. Muscular, metabolic, cardiovascular, and respiratory adjustments to acute and chronic exercise in health and disease, including body composition and weight control, nutritional consideration, and the effects of different environments on exercise performance. (F)

6320 Fitness Assessment and Prescription. Cr.3

Prereq: P E 6310. Physiological and anatomical principles of physical fitness. Optimum nutrition for health, weight control and performance. Construction of fitness programs and evaluation of fitness levels. Material fee as indicated in the Schedule of Classes. (W)

6410 Introduction to Sports Administration. Cr.3

Current categories of competitive sports and athletics identified and analyzed to determine potential administrative positions in their structures and the qualifications necessary for each position. (F,W)

7510 History and Philosophy of Physical Education. Cr.3

Two-part study: historical evolution of sport and the profession of physical education; philosophical problems that arise in the context of sport and physical education. (F)

7520 Alternative Styles of Teaching in Physical Education. Cr.3

Knowledge and application of several styles of teaching; different interactions between teacher and learner. Array of styles from command to discovery, utilized in practice. (F)

7550 Curriculum Development in Physical Education. Cr.3

Basic curriculum theory applied to programs of physical education: designing the curriculum, selection of content and evaluation of outcome based on knowledge of growth and development, how learning occurs, and knowledge of current social aims, forces and problems. (W)

7570 Psycho-Social Aspects of Physical Education. Cr.3

Prereq: introductory psychology course. Examination of the psychological, social, and social-psychological aspects of sport and physical education. The contemporary status of sport and physical education in American society. (W)

7580 Biomechanical Analysis of Motor Activity. Cr.3

Prereq: basic course in biomechanics/kinesiology. Principles and practice in the analysis of human movement. Selected methods of analysis are used in demonstrations and lab experiences. Students

complete a biomechanical analysis project on an appropriate human motor skill. Material fee as indicated in the Schedule of Classes. (B)

8530 Motor Learning. Cr.3

Prereq: P E 7500. Examination of research in motor learning and performance. Relation of the nervous system and other physiological mechanisms to motor behavior and other conditions which affect the acquisition of motor skill: perception, motivation, psychology of motor behavior. (B)

8540 Theories in Motor Development. Cr.3

Theoretical base for understanding motor development across the lifespan. Contributions from theories of child development psychology and learning. Current research. (B)

8560 Exercise Physiology. Cr.3

Prereq: P E 6320, HPR 7500. Response of human physiologic processes to various factors. Physiologic mechanisms underlying these responses. Methods of measuring responses; aerobic and anaerobic capacity, muscle strength and endurance, and body composition. Techniques of research. Material fee as indicated in the Schedule of Classes. (B)

RECREATION AND PARK SERVICES (R P)

5620 Advanced Field Work. Cr.3-6 (Max. 12)

Leadership/management in an approved recreation/park setting under professional supervision. Arrangements must be made with Departmental supervisor two months prior to registration to arrange placement. (F,W)

5630 TR: Program Development. Cr.3

Prereq: R P 3670 or equivalent experience. Development of therapeutic recreation programs for persons with disabilities: planning, objectives, facilitation techniques, resources and evaluation. Knowledge of health care system, laws and regulations, inter-agency procedures. (B)

5660 Independent Study. Cr.1-2 (Max. 6)

Supervised research, applied or action, in the student's area of concentration or interest. (F,W)

5760 Readings in Recreation and Park Services. Cr.1 (Max. 4)

Supervised, independent readings in the field of recreation and/or parks designed to expand the student's knowledge of the field or a specific part of the field. (F,W)

5780 TR: Mental Health. Cr.3

Relationships of mental health and leisure; roles of recreation and the leisure services as preventative and rehabilitation approaches; terminology and techniques for client-patient management discussed and analyzed. (B)

6600 Outdoor and Environmental Education. Cr.3

Philosophical and historical background, facilities, programming, and administration of outdoor education experiences. Emphasis on outdoor interpretation activities for all age levels. (B)

6630 TR: Program Implementation. Cr.3

Prereq: R P 3670 or equivalent experience. Principles and techniques of analysis, modification, assistance, assessment, and interpretation of results of therapeutic leisure activities for special populations. Theory and techniques of therapeutic interventions and medical record charting. (B)

6670 Outdoor Recreation and Tourism. Cr.3

Meaning, significance, historical background; facilities, agencies and programs at the federal, state and local levels; organizations and future projections. (B)

6730 TR: Physical Disabilities. Cr.3

Examination of various congenital and traumatic disabilities; sports for the disabled; resources; activities of daily living from therapist's point of view; equipment for mobility. (B:W)

6780 Leisure Education. Cr. 3

Theory and techniques of leisure counseling and leisure education; implications for program development in public, commercial, industrial and other leisure-time settings. (B)

7610 Foundations of Recreation and Leisure Services. Cr. 3

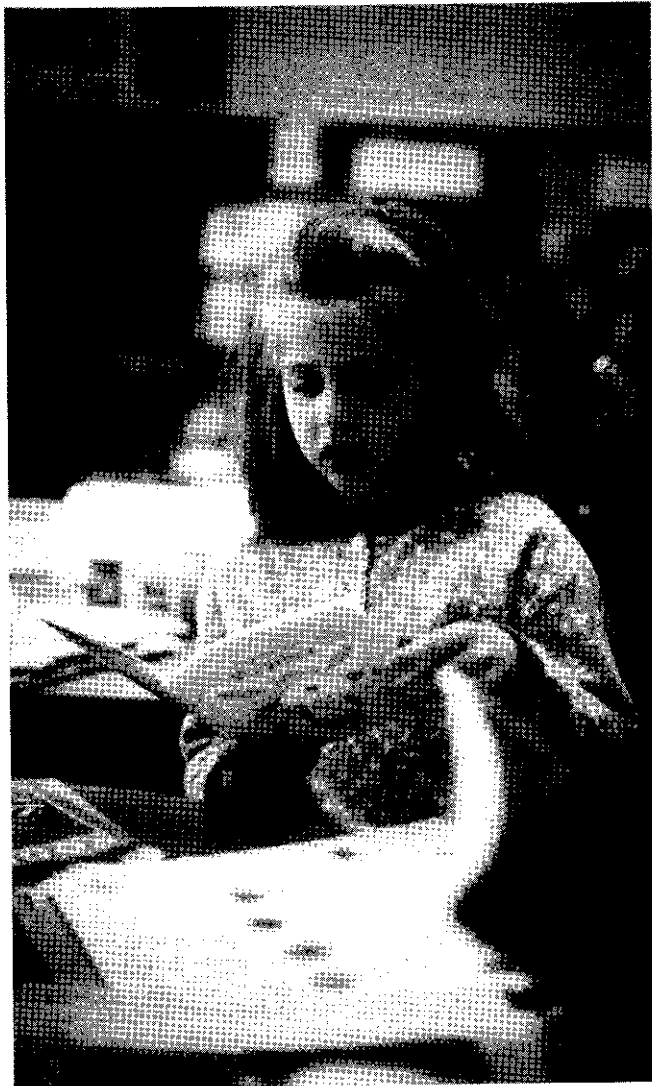
Basis for community recreation and leisure services; study of related services and programs; professional growth and development exercises. (B)

7640 Administration of Therapeutic Recreation Programs. Cr. 3

Prereq: R P 5630 and 6630 or equivalent experience. Therapeutic recreation issues in a variety of settings, both clinical and community; credentialing bodies and surveys; quality assurance and outcome measures; third party reimbursement; budget/fiscal planning; personnel management. (B)

7680 Resources Development and Management. Cr. 3

Administrative and management aspects of recreation and leisure services; developing human, fiscal and physical resources for delivery systems; project and grant writing techniques. (B)



TEACHER EDUCATION

Assistant Dean: Sharon Elliott

Office: 241 Education Building; 577-0902

Art Education Advising Office: 163 Community Arts Building

Professors

Asa J. Brown, Janice Hale, Leonard Kaplan, Gary R. Smith

Associate Professors

Rudi Alec, Navaz Bhavnagri, John S. Camp, Sharon W. Elliott, Karen Feathers, Rodolfo Martinez, John T. Norman, Jr., Gerald Oglan, Arthur R. Park, R. Craig Roney, Joseph Sales, Sr., Jacqueline Tilles, Paula Wood, Anga Youssef

Assistant Professors

James H. Blake, Thomas Edwards, Maria Ferreira, Richard Gibson, Randy Latimore, Mark Larson, Manuel Mazon, Sally Roberts, Lorraine Ross, Julie Sarama, Jo-Ann Snyder, Mary Stein, GERALYN STEPHENS, Kathi Tarrant, Marshall Zumberg

Lecturers

Hal Dittenber, Holly Feen-Calligan, Carole Hamilton, Robert Pettapiece, Marc Rosa, Anne Williamson-Blake

Graduate Degrees and Certificates and Post-Bachelor's Certificates

MASTER OF ARTS IN TEACHING

with majors in:

Elementary Education—with concentrations in:

Bilingual-Bicultural Education

Early Childhood Education

Mathematics Education

Science Education

Social Studies Education

Secondary Education—with concentrations in

Career and Technical Education

Bilingual-Bicultural Education

English Education

Foreign Language Education

Mathematics Education

Science Education

Social Studies Education

MASTER OF EDUCATION

with majors in

Adult and Continuing Education¹

Art Education—with concentrations in

Art Education

Art Therapy

Career and Technical Education

Bilingual-Bicultural Education

Early Childhood Education

Elementary Education—with concentrations in

Children's Literature

Early Childhood Education

1. An admission moratorium is in effect for this program.

General Elementary Education
Language Arts and Reading
Mathematics Education
Science Education
Social Studies Education
English Education: Secondary — with concentration in
Teaching English as a Second Language
Mathematics Education
Reading
Science Education
Social Studies Education: Secondary
Special Education—with concentrations in
Emotionally Impaired
Learning Disabilities
Mentally Impaired Transition

EDUCATION SPECIALIST CERTIFICATE

with majors in:

Curriculum and Instruction—with concentrations in
Career and Technical Education
Early Childhood Education
Elementary Education
English Education
Mathematics Education
Science Education
Secondary Education
Social Studies Education
Reading
Special Education

DOCTOR OF EDUCATION

and DOCTOR OF PHILOSOPHY — with majors in

Curriculum and Instruction—with concentrations in
Art Education
Bilingual-Bicultural Education (Ed.D. only)
Career and Technical Education
Early Childhood Education
General Elementary Education
English Education—Secondary
Foreign Language Education—Secondary
K-12 Curriculum
Mathematics Education
Science Education
Secondary Education
Social Studies Education: Secondary
Reading (Ed.D. only)
Special Education

POST-BACHELOR'S TEACHER CERTIFICATES

with majors and minors in:

Elementary Education — with concentrations in:
Bilingual-Bicultural Education
Early Childhood Education
General Elementary Education
Science Education
Secondary Education — with concentrations in:
Art Education
Bilingual-Bicultural Education
Career and Technical Education
Dance

English Education
Foreign Language Education
Mathematics Education
Music — Instrumental K-12
Music — Vocal K-12
Physical Education K-12
Science Education
Social Studies Education
Speech

Graduate Teacher Education

The graduate unit of the Division of Teacher Education emphasizes the development of competence in instruction and the improvement of curriculum at all levels and in many kinds of educational institutions. The graduate programs in teacher education are designed to prepare educators who are:

- effective in schools and other educational settings;
- knowledgeable in content areas for which they are responsible;
- knowledgeable about growth and development of learners, teaching and learning styles, philosophical purposes of education and methodologies of education;
- committed to the continuous improvement of the processes of education;
- responsive to a rapidly-changing technology and cognizant of its implications for education;
- cognizant of the uniqueness of metropolitan areas;
- cognizant of the values and contributions of various racial, ethnic, and linguistic groups;
- capable of promoting an understanding of the dynamics of cultural and linguistic pluralism in our society;
- able to promote collaboration between teachers, schools, parents, community and students;
- capable of creative thought and able to stimulate and promote creative thought in their students;
- able to study educational issues through the design and implementation of a research project;
- able to identify and use the results of educational research;
- able to articulate their own ethical behavior;
- able to serve educational enterprises in local, national and international settings.

The Division offers degree programs for a wide range of advanced professional roles:

1. supervisory and resource teachers, coordinators, consultants, and curriculum specialists;
2. teachers and consultants in parent education in school and non-school settings;
3. college and university teachers and researchers in the field of teacher education.

MASTER OF ARTS IN TEACHING

The Master of Arts in Teaching (M.A.T.) degree is designed for students who have completed a bachelor's degree in a non-education program with appropriate teaching majors and minors, and who desire both a master's degree and Michigan Provisional Teaching Certification at either the elementary or secondary level. Teaching certification can be earned prior to completion of the master's degree requirements. Each of the M.A.T. programs consists of graduate level courses (several involving work with children in a school setting) and a student teaching experience for a minimum of one University semester.

Information regarding teaching certificate requirements can be found on page 92 of this bulletin.

Admission to the Master of Arts in Teaching is contingent upon admission to the Graduate School; for requirements, see page 16. Students without appropriate teaching majors and minors and other general education requirements will be required to complete the necessary course work as post-degree students before entering the M.A.T. program.

Applicants to M.A.T. programs must be admissible to the Graduate School and the College of Education Division of Teacher Education. In order to be eligible for admission, all M.A.T. applicants must pass the State Basic Skills Test and must present verification of participation in group work with children.

Persons interested in the elementary or secondary education M.A.T. should consult with an admissions counselor, Room 469 or 489 Education Building, about acceptable teaching majors and minors before filing an application.

General M.A.T. Degree Requirements

Credit requirements for the various M.A.T. programs range from a minimum of forty to a maximum of fifty-two credits, depending on the applicant's background in his/her teaching field at the undergraduate level and specialized requirements. This degree is offered under the following options:

Plan B: Forty to fifty-two credits including a three-credit essay.

Plan C: Forty to fifty-two credits including a three-credit project.

All course work must be completed in accordance with the academic procedures of the College of Education and the Graduate School governing graduate scholarship and degrees; see pages 73 and 16-30, respectively. Requirements for the Master of Arts in Teaching degree must be completed within six years after completion of the first course to be applied to the degree.

Course work for the degree must be distributed among four areas: the major, the general professional sequence (core courses), elective courses, and a professional field experience.

General Professional Requirements: All M.A.T. students are required to complete the following general professional sequence:

	credits
EDP 6210—Foundations of Educational Psychology	3
EHP 7600—Philosophy of Education	2
TED 5150 or TED 5160	
— Analysis of Elementary School Teaching	3-6
— Analysis of Middle and Secondary School Teaching	3
TED 5650—Pre-Student Teaching	3-5

Elective Courses, if needed for diversity in the program, are selected in consultation with an adviser at the time a *Plan of Work* is prepared.

Professional Field Experiences (pre-student teaching and student teaching) are integral parts of all M.A.T. programs, and must be completed during daytime school hours. Courses which involve field experiences are TED 5150, 5160, 5650, 5780, 5790 and BBE 6600. Information on the student teaching phases of the program is presented on page 93 of this bulletin.

Elementary Education Major

Major Requirements: Courses which must be completed prior to student teaching are EDP 6210; TED 5150; RDG 6120; ELE 6290, 6310, 6390, 6500, 6600, and 7220 or 7240. Courses required for the M.A.T. degree following completion of the certification phase of the program are BBE 5000, EHP 7600, SED 7050, and ED 7999. Students wishing additional specialized endorsement may elect to complete one of the following minor concentrations.

—Elementary Education Minor Concentrations

EARLY CHILDHOOD EDUCATION: In addition to the elementary education requirements stated above, students seeking an Early Childhood Endorsement (ZA) on their teaching certificate must have a minor in early childhood. Courses which must be completed prior to student teaching are EDP 6210; TED 5150; RDG 6120; ELE 6040,

6310, 6340, 6390, 6600, 7220. In addition to student teaching, other courses required for the early childhood endorsement and the M.A.T. degree are ELE 6020, 6070, 6080, 7020; EDP 5450; BBE 5000; SED 7050; EHP 7600; ED 7999. The plan for this minor must be done in consultation with their adviser.

BILINGUAL-BICULTURAL EDUCATION: In addition to the elementary education requirements stated above, students seeking an M.A.T. in elementary education with a bilingual-bicultural endorsement must complete BBE 5000, 5020, 5500, 5530, 656, 6600, 6700, 6850; TED 7000; and LED 6520.

Only two general professional core courses are required: TED 5150, and EDP 5450 as an alternate for EDP 6210.

All students in the bilingual-bicultural program must complete the language proficiency examinations in English and in the target language of his/her individual program before completing twelve credits toward the degree.

SCIENCE EDUCATION: In addition to the elementary education requirements stated above, students seeking elementary certification with a science major must complete TED 7000; twelve credits of science education course work including ELE 6500. Additional courses required for the M.A.T. degree are selected in consultation with an adviser.

Secondary Education Major Concentrations

BILINGUAL-BICULTURAL EDUCATION: Students in an M.A.T. program in secondary education with a bilingual-bicultural endorsement must complete BBE 5000, 5020, 5500, 5530, 6560, 6600, 6700, 6850; RDG 6120; TED 7000; and ED 7999. Six credits in methods courses in the major field are to be selected in consultation with the appropriate major adviser.

The required general professional core courses should include EDP 5480 as an alternate for EDP 6210.

All students in the bilingual-bicultural program must complete the language proficiency examinations in English and the cognate language of his/her individual program before completing twelve credits toward the degree.

ENGLISH EDUCATION: Requirements for this major include EED 5200, 6120, 6210, 6310, 6330; ED 7999; RDG 6120, plus elective courses chosen in consultation with an adviser.

FOREIGN LANGUAGE EDUCATION: Requirements for this major include TED 5780, 7000; LED 6520, 6530; RDG 6120; ED 7999 and specialty courses including the following: LED 6580, 7210 and ED 7990.

The required general professional core courses should include: TED 5160, EDP 6210, and EHP 7600.

The required cognate courses are chosen with the approval of the adviser.

MATHEMATICS EDUCATION: Requirements for this major include TED 7000; ED 7999; RDG 6120; MAE 5150; MAE 6050; and two courses selected from: MAE 6150, 8050, 8100, 8150. Additional courses are selected in consultation with an adviser.

SCIENCE EDUCATION: Requirements for this major include TED 5650, 6020, 7000; ED 7999; SCE 5060, 5070 or 6030 and two elective science courses; RDG 6120; and CHM 6740. Additional methods courses and electives are selected in consultation with an adviser.

SOCIAL STUDIES EDUCATION: Required courses in this major include SSE 6710, 6730, 7780, 8740; ED 7999; RDG 6120; EHP 7600, SED 7050, BBE 5000, and TED 6020.

CAREER and TECHNICAL EDUCATION: Required courses for this major include: CTE 5410, 6993; EDP 5480, EHP 7600, RDG 6120, TED 6020, ED 7999, SED 7050, and one elective. There is also a requirement of two years of recent and relevant work experience for this program.

A specific methods course is required for each of the above-mentioned fields and must be selected in consultation with an adviser.

Among the general professional core courses (see page 73) for secondary education, EDP 5480 should be substituted for EDP 6210.

The student teaching assignment (TED 5780) for this program requires a full-time assignment to a public school for a minimum of one *public school* semester.

Applicants should consult with the appropriate adviser prior to filing an admissions application in order to determine the appropriateness of various major and minor areas of study to the student's interest.

TEACHING CERTIFICATES

Present-day education is characterized by specialization at the secondary and elementary levels, related to both subject-matter fields and the age of school children. The Michigan Certification Code provides for specialization in either the elementary, middle, or secondary school areas by authorizing state certification for teaching on those levels. Thus, a person who has kindergarten through grade eight endorsement is not legally qualified to teach in the secondary schools above grade eight, and a person with grades seven through twelve endorsement is not legally qualified to teach below grade seven. An exception is made in certain fields such as art, physical education, dance and music education, where the holder of a provisional certificate is qualified to teach his/her major subject in all grades, and, if indicated by his/her certificate, other subjects in other grades.

The certification code recognizes subject-matter specialization by requiring that the candidate for a teacher's certificate present concentrations of credits called majors and minors. The secondary school teacher must have a major and minor teaching field, and the elementary school teacher must have either a major and a minor or three minor teaching fields. All majors and minors must be in subject-matter fields appropriate to teaching at the level for which certification is to be recommended. Individuals must pass state examinations in their major and minor fields before they begin student teaching.

Certification Requirements

Michigan State Teacher's Certificates are granted by the Michigan State Board of Education upon the recommendation of the College of Education. Initial certificates are provisional for a six-year period and may become a five year professional certificate after three years of successful teaching experience and the completion of additional college course work. Both the teaching experience and the additional credits must be completed after the issue date of the provisional certificate. Five year professional certificates must be renewed every five years by successful completion of six semester credits or eighteen continuing education units. Certificates will indicate in what grades and subjects the holder is eligible to teach. In certain specified nonacademic fields, however, the holder of a provisional certificate is eligible to teach his/her major subject in all grades from the kindergarten through the twelfth. The qualifications which the College requires for recommendation for the certificate are summarized below.

State Basic Skills Test: All students seeking admission to an M.A.T. or post-bachelor teacher certification program are required to pass the State Basic Skills Test prior to admission to the College of Education.

Provisional Certificates

Teaching certificates as listed below are granted upon the completion of the professional education sequence of the M.A.T. program.

Elementary Provisional Certificate—for Kindergarten through Grade Five, and Grades Six through Eight in subjects corresponding to majors and minors

Secondary Provisional Certificate—for Grades Seven through Twelve

1. The candidate must have graduated with a bachelor's degree from an approved or accredited institution.
2. The academic background must include one major (this may be a group major) and one minor (or three minors, for elementary candi-

dates). A single subject major is defined as a minimum of thirty credits and a group major as a minimum of thirty-six credits. A single subject minor is a minimum of twenty credits, and a group minor is a minimum of twenty-four credits. Majors and minors must correspond to disciplines listed on the State of Michigan Approved List of Majors and Minors.

3. Completion of the professional education sequence is required.

Certificate Endorsement

Holders of one level of certificate who wish to add another level (i.e., elementary to secondary or vice versa) must consult a counselor in the Division of Academic Services, 468 or 489 Education Building.

Five - Year Professional Certificate

This certification is available to holders of provisional certificates who have taught successfully for three years after the issue date of their provisional certificate and have completed eighteen credits in a planned course of study after the issue date of their provisional certificate or have a master's degree. The following requirements apply to specific teaching classifications as indicated:

Teachers of K-12 subjects: art, dance, music, and physical education, may present experience at any grade level from kindergarten through grade 12. (In cases where the experience requirement has not been met, it is possible to secure a three-year renewal of a provisional certificate if the holder has completed ten credits of college work since the date of issue.)

Vocational Education: Five year professional certification with vocational endorsement requires a planned program. *Students* should consult the appropriate area adviser regarding certification for an approved program leading to a five year professional certification with a vocational education endorsement.

Elementary Education: All candidates for an elementary five year professional certificate must have completed in their undergraduate or post-graduate preparation six credits in reading instruction, three of which must be reading in the content areas. Consult a counselor in Room 469 or 489, Education Building, for requirements.

Secondary Education: All candidates for a secondary five year professional certificate must have completed in their undergraduate or post-graduate preparation a three-credit course in reading in the content areas.

Bilingual/Bicultural Endorsement

The Bilingual/Bicultural Endorsement certifies a teacher who is qualified to teach classes of bilingual children. Students qualifying for an initial provisional certificate complete a twenty-four credit minor for the endorsement. Students holding existing certificates may add a bilingual endorsement by completing an eighteen credit planned program. Information and referral to the appropriate adviser for this endorsement may be obtained in Room 213 Education Building.

Early Childhood Endorsement

The Early Childhood Endorsement is designed to ensure that teachers working with children from birth to the age of eight years have had suitable preparation in the area. Teachers holding an elementary certificate must pass the State examination in early childhood education before receiving this endorsement. The endorsement program consists of twenty credits beyond requirements for the Provisional Certificate and experience in teaching two of the following three age levels: 1) infant - toddlers, 2) preschool, 3) kindergarten - third grade. The courses may be part of a master's, educational specialist, or doctor of education program. Interested students should consult an early childhood adviser.

K-12 Reading Endorsement

The K-12 Reading Endorsement is designed to prepare teachers to provide specialized instruction in reading within classrooms or in special programs at all grade levels in elementary, middle, and secondary schools. Teachers holding an elementary or secondary

certificate must complete a twenty-four credit program and then pass the State examination in reading in order to receive this endorsement. The courses may be part of a master's, educational specialist, or doctor of education program. Interested students should consult a reading program adviser.

Student Teaching

Application: Each student must make application for student teaching *in person* during the appropriate application period. The date a completed application form is submitted to the Student Teaching Office will determine the semester during which student teaching will take place. Student teaching application periods are as follows:

Fall semester the preceding November, December, January
Winter semester the preceding April, May, June, July

Procedures for Student Teaching Application:

1. Confer with adviser to determine eligibility for student teaching.
2. Complete application forms provided by the Student Teaching Office, 223 Education Building, during application period.

Prerequisites for Student Teaching Placement:

1. Full admission to the College of Education must be accomplished before application for student teaching can be accepted.
2. Completion, at Wayne State University, of not less than six credits in course work authorized by the student's curriculum area adviser.
3. Adequate work in the teaching major and minor(s) as defined by the student's curriculum area in the College of Education.
4. Satisfactory completion of appropriate pre-student teaching courses and appropriate methods courses as outlined by the student's adviser.
5. Satisfactory tuberculosis test within six months before assignment begins.
6. Passing scores on state examinations in basic skills and in the major and minor teaching areas.

Post-Bachelor's Teaching Certificate

This program is designed to offer teacher certification to holders of baccalaureate degrees with suitable teaching majors and minors, who do not choose to pursue the master's degree. The program incorporates classroom theory with practice, takes a minimum of four semesters to complete and is available at both the elementary and secondary levels.

Admission to this program requires an undergraduate h.p.a. of 2.5, successful completion of the State Basic Skills Test, and a bachelor's degree with an appropriate teaching major and minor earned at a regionally accredited institution.

Elementary Education: Admission to the elementary education curriculum is predicated upon review of the applicant's transcript to ensure that course requirements in world geography, United States history, world history, American government, biology, physical science and mathematics have been satisfied. Depending upon this review, some additional course work may be required before beginning the professional sequence outlined below.

CERTIFICATE REQUIREMENTS: The elementary education certificate requires completion of forty-nine credits and the secondary education certificate requires completion of forty credits as specified in the following programs. These are professional education courses and are applicable to the certificate ONLY when taken after formal admission to the College of Education.

The grouping of courses cited below as phases I, II, and III may (or may not) reflect individual semesters' work depending on the student's full- or part-time status. Field courses are taught in the public schools where student teaching assignments are made.

Elementary Education Sequence (Forty-nine Credits)

PHASE I Credits

Field Courses

TED 3550 — Teaching: Theory and Practice 5
 ELE 3300 — Teaching Language Arts: Preprimary - 9 3

Campus Courses (must be taken prior to TED 5780)

RDG 4430 —(WI) Teaching Reading in Subject Matter Areas 3
 EDP 3310 — Educational Psychology 3
 ELE 3400 — Teaching Mathematics: Preprimary - 9 3

PHASE II

Field Courses

TED 3560 — Pre-Student Teaching Field Experience 3
 ELE 3320 — Teaching Reading: Preprimary-9 3

Campus Courses

(must be taken after TED 3550 and prior to TED 5780)

ELE 3500 — Teaching Science: Preprimary - 9 3
 ELE 3600 — Teaching Social Studies: Preprimary - 9 3

PHASE III

Field Course

TED 5780 — Directed Teaching and Conference 10

PHASE OPTIONAL

Courses taken in any phase

ELE 3200 — Literature for Children 3
 SED 5010 — The Exceptional Child in the Regular Classroom 2
 BBE 5000 — Multicultural Education in Urban America 2
 TED 6020 — Computer Applications in Teaching I 3

Secondary Education Sequence (Forty-three credits)

Courses satisfying the methods requirements (first and second courses) vary with each discipline. Students should consult the *Curriculum Guide for Secondary Education* available from the Division of Academic Services, 469 Education Building.

Semester I (may be taken at any time after admission to the College)

BBE 5000 — Multicultural Education in Urban America 2
 SED 5010 — The Exceptional Child in the Regular Classroom 2
 TED 6020 — Computer Applications in Teaching I 3
 EHP 3600 — Philosophy of Education 3

Semester II (student must have 24 credits completed in the major)

TED 5650 — Pre-Student Teaching Fld. Exp.: Secondary (coreq: TED 5160) 5
 TED 5160 — Analysis of Middle & Sec. School Teaching (coreq: TED 5650) 3
 Methods I course (in major) 3
 EDP 5480 — Adolescent Psychology 3

Semester III

RDG 4430 — (WI) Teaching Reading in Subject Matter Areas 3
 Methods II course (in major) 3
 Methods III course (in minor if applicable) 3

Semester IV (major and minor completed)

TED 5780 — Directed Teaching and Conference 10

MASTER OF EDUCATION

Generic admission and degree requirements for the Master of Education degrees offered by this department are presented on page 73. The following sections, under major degree headings, enumerate the specific amendments/variations to generic requirements, as well as program options.

— with a Major in Adult and Continuing Education¹

The Master of Education program in Adult and Continuing Education is designed to develop competent practitioners and well-rounded educational leaders. This program is designed to develop specific competencies in the following areas: educational leaders in adult and continuing education and human resources development.

1. An admission moratorium is in effect for this program.

This program is for persons now occupying or preparing for such positions as labor educator, education director in volunteer organizations, health organizations or in the armed forces, in museums, libraries, community service agencies, trade and technical schools.

Admission Requirements: see page 73.

DEGREE REQUIREMENTS: see page 73. This program is offered under Plans B or C (as defined on page 73).

Major Requirements: A minimum of thirty credits is required in this program. Course requirements include ACE 7100, 7110, 7120, and ED 7999. Additional courses in the major and electives are selected in consultation with an adviser.

— with a Major in Art Education

The Master of Education degree with a major in Art Education assists graduates in becoming more effective art teachers and leaders in the field of art education. Emphasis is placed on each student designing a curriculum of graduate studies to fit his or her professional needs.

Admission Requirements: see page 73. For admission to the program the applicant must have: a baccalaureate degree from a college or university of recognized standing; a major in art; a teaching certificate; and adequate preparation and ability to pursue graduate study. Entering students should make an appointment with an Art Education graduate adviser for assistance: Room 163, Art Building.

DEGREE REQUIREMENTS: see page 73. This program requires thirty credits in course work: eight credits in art education research (TED 7000, ED 7999, and AED 7400); six credits in professional education courses; and sixteen credits in electives. Eighteen of the thirty credits required must be in the art education major. The intent is that the thirty credits will comprise a unified, meaningful curriculum extending each student's ability as an artist, a scholar, and a teacher.

— Art Therapy Concentration

Art therapy is a specialization available in the Master of Education in Art Education degree program. In addition to the admission requirements stated above, students must submit letters of recommendation, an autobiographical statement, and a slide portfolio. A personal interview is also required. (A teaching certificate is NOT required for this program.)

DEGREE REQUIREMENTS: see page 73. This program is offered as a master's Plan B or Plan C, as defined on page 73. A minimum of forty-one credits is required for this concentration: twenty-four credits in art education and art therapy; six credits in the general professional sequence; and five research credits. The remaining six credits are approved electives in an area of art therapy specialization. A related essay or project of substantial quality concludes the program. Interested candidates should contact the Art Education office for additional information: Room 163, Community Arts Building; telephone: 577-0490.

— with a Major in Bilingual-Bicultural Education

The bilingual-bicultural master's degree program was developed to enhance the basic skills of bilingual teachers and prepare them for roles as school district bilingual supervisors, district administrators, and resource Room teachers. The program is based on the development of specific competencies in the following areas.

1. *Curriculum and Instruction* — which involves teaching strategies and methodologies relevant to the teaching of content curriculum areas in a bilingual education setting, as well as the role of culture in the cognitive development of children;
2. *Assessment* — which includes skills in identifying linguistic and cultural biases in existing assessment instruments and test item construction;
3. *School-Community Relations* — which includes the identification of those elements in the community which will function in concert with the school to promote learning in children; and
4. *Professional Socialization* — which establishes those skills necessary to develop leadership in bilingual education.

Admission Requirements: see page 73. Students entering this program must be proficient in both English and the cognate language of their individual program.

DEGREE REQUIREMENTS: see page 73. The Master of Education in this area is offered under Plans B or C, as defined on page 73. A minimum of thirty-three credits is required including TED 7000 and ED 7999. All other course requirements are selected in consultation with an adviser and are based on the specific background and needs of the student.

— with a Major in Career and Technical Education

This program is designed for students with a secondary teaching certificate in a career and technical education specialty; it provides for the 'planned program' element which is one of the requirements for the five-year professional certification. Another element of the concentration enables the graduate to meet career and technical education endorsement requirements. Upon completing the Master of Education and the required three years of appropriate teaching experience, the graduate will receive a M.Ed. degree and will be eligible for both the five-year provisional secondary certification, and full career and technical education endorsement.

Admission Requirements: see page 73.

DEGREE REQUIREMENTS: see page 73. The program consists of a minimum of thirty credits. Required courses include: CTE 6010, 6999, 7820, 8998; TED 7000; EER 7610; and ED 7999; additional courses are selected in consultation with an adviser. Deficiencies in relevant work experience must be completed in addition to the required thirty credits.

Advising: Information regarding career and technical education programs may be obtained from the Teacher Education area on the second floor of the College of Education Building.

— with a Major in Elementary Education

This program is designed for teachers who wish to strengthen their present competencies and acquire new ideas and skills in curriculum and instruction in current elementary school programs. The majority of students in this program are seeking Michigan Five-Year Professional Certificates; many are earning specialized endorsements. The program also allows teachers certified in other areas to earn elementary endorsements.

A large number of courses are available to develop a professional specialization in elementary curriculum and instruction. Students may elect to have a general specialization allowing them to choose from many subject areas or to emphasize the areas of children's literature, early childhood education, reading and language arts, mathematics, or science.

Admission Requirements: see page 73.

DEGREE REQUIREMENTS: see page 73. The Master of Education in this area is offered under Plan A, B, or C, as defined on page 73. All M.Ed. students in elementary education must demonstrate proficiency in curriculum development by completing successfully one of the following: ELE 6100, 7260, or TED 7800.

— with a Major in English Education (Secondary)

This program is designed to increase the skills and knowledge of teachers already holding certificates. Additionally, some students find this program useful as a preparation for positions as department heads or resource personnel.

Admission Requirements: see page 73. Admission to this program requires a teaching certificate and at least twenty-one credits in English.

DEGREE REQUIREMENTS: see page 73. The Master of Education is offered in this area under Plans A, B, or C, as defined on page 73. This program requires a minimum of thirty credits distributed as follows: seventeen credits in major course work including the final essay or project; six credits in general professional courses selected from such fields as educational psychology, educational philosophy, educational sociology, educational evaluation and research, and

guidance and counseling; and six to nine credits in cognate courses selected to enrich the teaching major or minor. Additionally, students with less than a cumulative total of thirty credits in English (including the twenty-one credits required for admission) must make up the deficit within the cognate area.

Teaching English as a Second/Foreign Language: Students in the English Education program may also choose to become either teachers of English as a second language (TESL) or teachers of English as a foreign language (TEFL). Persons who wish to devote themselves to TESL/TEFL teaching come from a variety of backgrounds. Thus, a number of curricula have been devised to complete the degree, accommodating those who are certified teachers, and those who wish to combine TESL/TEFL training with English teaching certification.

Requirements for this concentration are similar to the generic English Education major (see above), except that Plan A is not offered.

— with a Major in Foreign Language Education (Secondary)

The goal of this program is to enhance the skills of the foreign language teacher through advanced linguistic training, advanced training in language teaching methodology, additional training in collecting cultural data for the cognate language, and additional study in the cognate language. Attention is also given to the uses of computers and programmed instruction as an aid to language teaching.

Admission Requirements: see page 69.

DEGREE REQUIREMENTS: see page 69. The Master of Education in this area is offered under Plans B or C (as defined on page 69), and requires a minimum of thirty credits. Course requirements for the program include TED 7000; ED 7900 and 7999; LED 6580; general professional courses include EDS 7650, CED 6700, and EDP 5480. Additional courses in the language major are chosen with the approval of the adviser.

— with a Major in Mathematics Education (Secondary)

Admission Requirements: see page 73.

DEGREE REQUIREMENTS: see page 73. This degree is offered under Plans B or C (as defined on page 73), and requires a minimum of thirty credits.

This program is designed for secondary school mathematics teachers who wish to enhance their knowledge and skills for teaching mathematics. Applicants must have at least an undergraduate minor in mathematics appropriate for secondary school teaching. Students entering with a minor in mathematics must complete sufficient additional mathematics courses to obtain a major during the course of the program and also include at least six additional credits in mathematics. Applicants with secondary certificates must complete the following required courses: TED 7000 and ED 7999; twelve to fifteen credits in the major field, selected in consultation with an adviser; six credits in general professional courses (see page 73); and six to nine credits in mathematics or related courses.

— with a Major in Early Childhood Education

This program enables students to qualify for a teaching endorsement in early childhood (ZA) education while pursuing the degree. The program is designed for persons interested in working with young children and their families. The focus of the curriculum is on the growth and development of the young child including the influence of family dynamics. Students also study the pattern of education of the young child including the theory, development, and evaluation of learning and teaching in early childhood education; as well as teaching strategies, materials and equipment for physical, social, emotional, and intellectual development. Support systems for the young child are investigated and experiences in a preprimary and primary grade setting are required. Students without student teaching or on-the-job teaching at the preschool level are assigned to the Wayne State Uni-

versity Early Childhood Center for a field placement as part of the program.

Admission Requirements: see page 73.

DEGREE REQUIREMENTS: see page 73. This degree is offered under Plans A, B, or C (as defined on page 73), and requires a minimum of thirty credits. Required courses include: TED 7000 and ED 7999; ELE 6020; twelve credits in the major field, selected in consultation with an adviser; six credits in general professional courses (see page 73); and additional electives related to the student's professional goals.

— with a Major in Reading

This program is designed for teachers who wish to strengthen their present competencies and acquire new skills in teaching reading in preprimary through high school levels and adult literacy and college development. The program involves a curriculum that qualifies students for an endorsement in reading by the State of Michigan and offers study in multi-cultural, urban, K-12, and child/adolescent emphases. Graduates of this program are primarily trained for the roles of classroom teacher of reading (elementary self-contained or elementary/secondary special reading programs) and reading clinician.

Admission Requirements: see page 73.

DEGREE REQUIREMENTS: see page 73. This degree is offered under Plan A, B, or C (as defined on page 73), requiring a minimum of thirty-three credits of course work distributed as follows: RDG 7100, 7200, 7300, 7400, 7500; and ED 7999; six credits in general professional courses (see page 73); and nine elective credits.

— with a Major in Science Education

This program provides in-service elementary, middle school, and senior high school science teachers with opportunities for continuing growth in scholarship, performance, and research in science education. A forum is provided wherein teachers interact with each other in order to clarify and strengthen the bonds between theory and practice. The program emphasizes the implications of research for science curriculum design and classroom teaching. It includes among its goals an understanding of various teaching strategies and materials that promote inquiry, the impact of science and technology on people and their institutions, and the acquisition of insights into recent advances in science and technology. Students may be admitted to this program if they have had twelve credits in science and if they have accumulated twenty-four credits by the time they graduate.

Admission Requirements: see page 73.

DEGREE REQUIREMENTS: see page 73. This degree is offered under Plans A, B, or C (as defined on page 73), requiring a minimum of thirty credits. Required courses include: TED 7000 and ED 7999; six credits in general professional courses (see page 73); a minimum of ten credits in science education courses selected in consultation with an adviser; and additional elective credits in a graduate field.

— with a Major in Social Studies Education (Secondary)

The goals of this program reflect both a content (knowledge) and procedural (application) emphasis. Graduates acquire a strong theoretical/subject matter foundation which is applied to the secondary school setting. Students will gain an understanding of the issues of social studies education, the nature of objectives, learning activities, curricular organization, and educational evaluation at the secondary level. Analytical skills will be developed through evaluation of the content and structure of social studies texts, materials, and resources.

Admission Requirements: see page 73.

DEGREE REQUIREMENTS: see page 73. This degree is offered under Plans A, B, or C (as defined on page 73), requiring a minimum of thirty credits. Required courses include: SSE 6730, 7780, 8740, and ED 7999; six credits in general professional courses (see page 73); and elective courses selected in consultation with an adviser.

— with a Major in Special Education

Students must have an honor point average of 2.75 in order to be admitted to this program. Students who have completed elementary certificate and bachelor's degree requirements in non-special education areas and who wish to qualify for approval in an area of special education may take their initial preparation at the master's level.

Students who are certified elementary teachers, approved in special education at the undergraduate level, may continue their preparation in other areas of specialization.

Initial endorsement in the program for the emotionally impaired is secured at the master's level. The curriculum prepares professionals for in-patient and out-patient clinical-hospital settings, as special education teachers in public schools and as teacher-consultants.

Initial endorsement in the program for the learning impaired is secured at the master's level.

The preparation program for the developmentally disabled (mentally impaired) prepares specialists in transition classroom intervention, resource teachers, teacher counselors, program consultants, program directors, is open to students with prior special education endorsements or to those holding secondary certificates.

Graduate Advisers:

Emotionally Impaired Asa Brown, Paula Wood

Learning Disabilities Asa Brown, Richard Parres, Virginia Pearson

Mentally Impaired Virginia Pearson, Marshall Zumberg

Admission Requirements: see page 73.

DEGREE REQUIREMENTS: General degree requirements for Master of Education programs are presented on page 73. This degree program in special education is offered under Plans A, B, or C, as defined on page 73. Courses required for the various major concentrations available are as follows:

Mentally Impaired Transition: A minimum of thirty-four credits is required for this concentration including SED 7770, 7840, and 8700. The general course requirements are EDP 5480, EER 7610, and CED 6700. Electives are selected with the adviser.

Emotionally Impaired: A minimum of forty-seven credits is required for this concentration including SED 7760, 7770, 7820, 7830, 7840, and ED 7999. The general professional course requirements are CED 6700, EER 7610, and EDP 5450 or 5480. Electives should include EDP 7490.

Learning Disabled: A minimum of thirty-five credits is required for this concentration including SED 7760, 7770, 7790, 7820, 7830 or 7840; and ED 7999. The general professional course requirements are CED 6700; EER 7610; and EDP 5450 or 5480. EDP 7530 is required as part of the elective credit allowance for this degree.

Education Specialist Certificate

The Teacher Education Division offers a number of education specialist programs at the elementary and secondary levels. These certificate programs are designed to strengthen the educational background of teachers, administrators, and other education professionals.

Admission requirements: see page 74.

CERTIFICATE REQUIREMENTS: These certificate programs require thirty credits beyond the master's degree. The individual student's professional needs and interests are taken into account in determining the specific content of his/her program. The typical plan includes course work in the specialized professional area, and subject matter areas supportive of a major or minor. All course requirements for the various majors are selected in consultation with an adviser.

Doctoral Degrees (Ph.D and Ed.D)

The Doctor of Education (Ed.D) and the Doctor of Philosophy (Ph.D) programs prepare professional educators for positions in institutions of higher learning, education renewal centers, state and national

education agencies, and intermediate and local school districts. Advanced programs are designed for those individuals who are committed to the educational renewal of urban America; whose career goals emphasize the development and improvement of curriculum and instruction; who desire to prepare themselves for leadership roles in pre-service and in-service teacher education; and who will serve as agents of change, creating and expanding the varied institutions and programs needed for the continuing education of teachers. This program also serves those interested in the educational aspects of business and industry, health and social services, and other areas that require expertise in curriculum and instruction.

Based on pure and applied research in instruction and curriculum, doctoral study incorporates formal classroom instruction, independent study, and direct, clinical experience in a variety of field settings. It reflects (1) the legitimacy of the emerging pattern of inter-institutional partnerships in teacher education at all levels; (2) the significance of the diverse nature of the metropolitan society; and (3) the importance of the integration of theory, research, and practice as the basis for sound professional development.

Admission Requirements: see page 75.

DEGREE REQUIREMENTS: see page 75. Courses in the field of concentration in each program are selected in consultation with an adviser to develop a *Plan of Work*.

The K-12 curriculum area of emphasis, within the curriculum and instruction program, requires the following courses in the major area: TED 6130, 8130, 8270, 8280, 9130; IT 6110; and EDA 8650.

GRADUATE COURSES

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

TEACHER EDUCATION DIVISION (TED)

5150 Analysis of Elementary School Teaching. Cr. 3-6

Prereq: admission to M.A.T program. Organization and management of classrooms. Lesson planning, teaching strategies and testing procedures. Work in classroom assigned by both an experienced public school teacher and a University faculty member. (F,W)

5160 Analysis of Middle and Secondary School Teaching. Cr. 3

Prereq: admission to teacher certification program; coreq: TED 5650. Overview of structure, function and purposes of middle and secondary school education. Development and analysis of instructional objectives. Organization and management of classrooms. Teaching strategies and assessment of learning. Exploration and utilization of resources in the community. (T)

5460 (DNC 5460) Music and Dance in the Music Class II. (MED 5580) Cr. 1-2

Prereq: TED 5440. Continuation of TED 5440; added experience using the Orff instrumentation for accompaniment. (S)

5650 Pre-Student Teaching Field Experience for Secondary Majors. Cr. 3-5

Prereq: admission to secondary certification program; coreq: TED 5160. Offered for S and U grades only. Field experience in secondary school settings prior to full-time student teaching. (F,W)

5740 (D E 5740) Problems in Driver Education and Traffic Safety. Cr. 3

Prereq: TED 5994. Issues and concerns in professional preparation to meet traffic safety needs of schools and communities. (F,S)

5750 (D E 5750) Seminar in Driver Education and Traffic Safety. Cr. 3

Prereq: TED 5740. Behavioral, administrative, and professional aspects of the teaching role in driver and traffic safety education. (W,S)

5780 Directed Teaching and Conference. Cr. 1-10

Offered for S and U grades only. Directed teaching in schools at level for which students are preparing for certification. Includes regular conference in which teaching methods in various fields are explored. (F,W)

5790 Student Teaching and Conference for Special Groups. Cr. 1-10

Prereq: admission to student teaching. Offered for S and U grades only. Directed teaching in schools at level for which advanced students are preparing for certification; discussion of educational issues. For students seeking endorsements in special areas; for example: special education, early childhood, art. (F,W)

5810 (DNC 5810) Creative Dance for Children. (DNE 5810) Cr. 3

Approaches to creative dance experiences for children stressing the development of aesthetic and kinesthetic awareness. Focus on comprehensive arts and curriculum related materials. (F)

5820 (DNC 5820) Creative Movement for the Pre-School Child I. Cr. 3

Creative dance activities; manipulative, musical, imaginative and kinesthetic approaches to movement. (F,W)

5830 (DNC 5830) Field Work in Creative Dance. Cr. 2-8

Prereq: DNC 5830 or consent of instructor. Supervised professional study in field settings. (T)

5994 (D E 5730) Teaching Driver Education and Traffic Safety. Cr. 3

Prereq: valid Michigan driver's license. Teacher preparation to organize and teach driver education and traffic safety. (F,W)

6020 Computer Applications in Teaching I. Cr. 3

Variety of experiences with computer applications for K-12 instruction using Macintosh and Dos/Windows platforms. Development of skills using telecommunication, videodiscs, CD-ROMs, and other multimedia resources. (T)

6030 Computer Applications in Teaching II. Cr. 3

Prereq: TED 6020 or equiv. Use of computing resources to develop problem-solving strategies and multimedia applications for students in a specific K-12 curriculum. (F,W)

6130 Developing Curriculum in the Affective Domain. Cr. 3

Philosophy and theory underlying the affective domain; the impetus and means of evaluative and analytical thinking used as a vehicle that provides teachers with instructional strategies in building K-12 curriculum. (Y)

6140 Local School Curriculum Planning. Cr. 1-6 (Max. 12)

For classroom teachers and teacher educators. Consideration of local problems in elementary and secondary school programs. Planning for better teaching and learning. (I)

7000 Introductory Master's Seminar. Cr. 2-3

Prereq: admission to a master's degree program in Teacher Education Division. Skill development in the three primary areas: information access through the variety of resources available in a university library; comprehension and evaluation of technical literature; employment of APA style in technical writing. (F,W)

7010 Field Study in Computer Applications in Teaching. Cr. 2-12 (Max. 12)

Supervised professional study in field settings; development, implementation and evaluation of computer-based instructional materials. (I)

7800 Practicum in Curriculum Theory, Development, and Evaluation. Cr. 1-5

Offered for S and U grades only. Specific curriculum issues; linking theory and practice in educational settings. (T)

8130 Basic Principles of Curriculum and Instruction. Cr. 3

Theoretical bases of curricular development and instructional innovation. Their application to the tasks of the curriculum maker explored as various education positions are taken and examined. (S)

8170 Advanced Seminar. Cr. 2-6 (Max. 6)

Prereq: admission to education specialist or doctoral program. Topics to be announced in Schedule of Classes. (I)

8270 Seminar: Issues in Curriculum and Instruction. Cr. 2-6 (Max. 8)

For specialist and doctoral students. Analysis of basic issues in curriculum and instruction and their implications for program: early childhood, K-12, adult curricula. Critique of recent research and development efforts. Application to problems of leadership in school-wide curricular improvements. (F)

8280 Research Seminar: Curriculum and Instruction I. Cr. 3

Methods of research in curriculum and instruction. Critical review of types of research in curriculum and instruction. Research design. (W)

9130 Doctoral Seminar in Curriculum and Instruction. Cr. 3

Prereq: formal admission to a doctoral program in education. An examination of curriculum theory and concepts that apply to the development of content and instructional strategies relevant to contemporary education. (T)

ADULT and CONTINUING EDUCATION (ACE)

7100 Adult and Continuing Education in a Changing Society. Cr. 3

Examination and analysis of adult education practices, trends and issues, and their relationship to a constantly changing society. (W)

7110 Adult Learning. Cr. 2-3

Diagnosing adult interests and learning styles; critically reviewing inventories; reviewing research; determining goals and objectives for learning in diverse environments in adult and continuing education. (S)

7120 Adult and Continuing Education Methods. Cr. 3

Survey and laboratory practice in methods of designing and conducting courses, group discussions, informal groups, workshops, seminars, lectures, audience participation, conferences, on-the-job training, case study, mass media programs, large meetings and community development. (F)

ART EDUCATION (AED)

5000 Art Process, Perception and Expression. Cr. 3

Study and analysis of the two-dimensional art process related to individual development and response. Examination of observation and image formation, including the collection of visual information for two-dimensional production. Investigation of geometric perspective and

visual illusion. Children's developmental use of symbols and related research in creativity, visual thinking and brain organization and function. Selected examples of drawings and paintings from various cultures examined in relation to learning and teaching. Material fee as indicated in the Schedule of Classes. (Y)

5010 Art Teaching Laboratory. Cr. 5

Prereq: AED 5000. Laboratory experience in teaching art to upper elementary children, middle school and high school students. Includes planning, producing visual aids, evaluating children's work and peer- and self-assessment in teaching using video tape recording equipment. Material fee as indicated in the Schedule of Classes. (F)

5020 Painting: Methods and Materials. Cr. 3 (Max. 9)

Methods, materials and processes suitable for teaching painting in the schools. Subject selection, composition, surface selection and preparation, mixing and application of paint, finishing, and presentation. Students develop basic skills in painting for personal artistic expression. Material fee as indicated in the Schedule of Classes. (F)

5070 Methods and Materials of Sculptural Expression. Cr. 3

Required for certification in art education and prior to student teaching. Exploration of three-dimensional forms using various media; emphasis on sculptural concepts, materials, tools and techniques related to teaching sculpture on the elementary and secondary level. Material fee as indicated in the Schedule of Classes. (Y)

5100 Art for Special Groups. Cr. 1-3 (Max. 9)

Art experiences designed for the specific needs of special groups. Topics to be announced in Schedule of Classes. Material fee as indicated in the Schedule of Classes. (I)

5150 Computer Graphics in the School Art Room. Cr. 3

Instruction and laboratory experiences in the production of computer graphics, primarily using the AppleIIe and Apple GS. Explorations in HIRES, LORES, drawing, color-filling, painting, lettering, and animation. Students use basic programming, software systems, digitizers, printers, and video generation equipment. (Y)

5160 Theory and Practice in Art Education. Cr. 3 (Max. 9)

Prereq: AED 5010; prereq. or coreq: student teaching. Seminar, lectures, readings and writing pertaining to the history, philosophies, purposes and practices of art education; philosophical influences on art education. Required field experience in alternative setting. (W)

5170 Fibers: Methods and Materials. Cr. 3 (Max. 9)

Comprehensive exploration of fiber-fabric art forms: applique, tapunto, stitchery, dyeing, soft sculpture, weaving, wrapping, hooking, and others. Student learns basic techniques and selects several areas for in-depth study. Safety, special tools, materials, techniques and resources for teaching. For both beginning and advanced students; individual creative self-direction is essential for advanced study. Material fee as indicated in the Schedule of Classes. (F)

5190 Light, Sound, Space and Motion. (IT 5190) Cr. 3 (Max. 9)

Laboratory experiences in planning and producing animated films, instructional video, and slide/sound presentations. Students prepare storyboards, write scripts, prepare titles and credits, mark on film and slides, produce Super-8 animation, use 35mm camera on a copy stand, edit, splice film, record and synchronize sound tracks, and produce single-camera instructional video. Methods and materials for teaching film and video in schools, producing video aids, or producing film/slides/video for artistic expression. Material fee as indicated in the Schedule of Classes. (W)

5200 (I T 5130) Computer-Programmed Multi-screen/Multi-image Presentations. Cr. 3 (Max. 9)

Examination of methods and procedures for producing multi-screen/multi-image presentations including the use of micro-processing computers. Students plan and produce a multi-screen or multi-image presentation. Material fee as indicated in the Schedule of Classes. (W)

5230 Ceramics Education I. Cr. 3

An overview of handbuilding processes, various firing procedures including blackware and raku, decorating, glazing and equipment

maintenance. Emphasis placed on the educational benefits and procedures for working with people of various ages and the management of materials for teaching. Material fee as indicated in the Schedule of Classes. (Y)

5280 Printmaking: Methods and Materials Cr. 3 (Max. 9)

Studio exploration of relief, planographic, intaglio, and stencil processes as methods of reproduction for artistic expression. Examination of tools, methods and processes suitable for the classroom. Includes study in lithography, dry point, etching, collagraphy, woodcut, linocut, and photo screen processes. Material fee as indicated in the Schedule of Classes. (W)

5300 Survey of Art Therapy. Cr. 3

Slide lectures, readings, and studio experience in and related to art therapy. (Y)

5360 Wood, Metal and Plastic: Methods and Materials. Cr. 2-3 (Max. 9)

Planning and production in wood, metal and plastic using power and hand tools. Processes suitable for production of adaptive devices or therapeutic activity. Materials and methods appropriate for schools. Work in a shop setting using power saws, torches, kiln, wood lathe, and a variety of hand tools. Material fee as indicated in the Schedule of Classes. (W,S)

6150 Instructional Applications of Computer Graphics. (IT 6150) Cr. 3

Instruction and laboratory experiences in the design, production, and application of computer graphics in the classroom and other educational settings. Programming experiences in animation, charts and graphs, and simple drawing techniques. Material fee as indicated in the Schedule of Classes. (T)

6220 Drawing and Watercolor - Field Studies. Cr. 3 (Max. 9)

For beginning and advanced students' growth and development in watercolor techniques and the painting process. Field trip/work sessions at rural and urban sites to develop visual awareness and ability to select visual information for image formation. Slide lectures, demonstrations, critiques, discussions, individual assistance, analysis of the two-dimensional art process and study of unique approaches to teaching watercolor. Material fee as indicated in the Schedule of Classes. (S)

6230 Ceramics Education II. Cr. 3 (Max. 9)

Emphasis is placed on throwing procedures, the use of various clay bodies, firing at various temperatures, making and using tools, ceramic history and its use and benefits in a school curriculum. Material fee as indicated in the Schedule of Classes. (Y)

6250 Aspects of Ceramics. Cr. 3-9 (Max. 9)

Various aspects of ceramics chosen to develop the students' understanding of the potential for ceramic education. Topics to be announced in Schedule of Classes. Material fee as indicated in the Schedule of Classes. (I)

6320 Introduction to Art Therapy. Cr. 3

Slides, lectures, studio experiences and field observations on definition, theory, goals, research and ethics of art therapy; the role and duties of the art therapist in various settings; crosscultural mores. (Y)

6340 History and Literature of Art Therapy. Cr. 3

Slide lectures, studio experiences, assigned readings, discussions, and critical evaluations in the history and literature of art therapy and closely-related fields. (Y)

6360 Aspects of Art Therapy. Cr. 1-12

Aspects of the use of art therapy chosen to develop students' breadth or depth in art therapy practice with various groups and settings. (Y)

7230 Advanced Ceramics Education. Cr. 3 (Max. 9)

Ceramic procedures on an advanced level. Emphasis on individual development and specific approaches to teaching. Students will choose areas of concentration relevant to their own situation. Material fee as indicated in the Schedule of Classes. (Y)

7300 Experiential Investigations. Cr. 3

Open only to Art Therapy majors. Exploration of the design, facilitation, and assessment of appropriate therapeutic applications of art therapy with different populations. (Y)

7320 Art Therapy with the Emotionally Impaired. Cr. 3

In-depth presentation of theory and practice of art therapy with persons who are emotionally impaired. Particular attention to the use of art therapy in a clinical setting. Material fee as indicated in the Schedule of Classes. (Y)

7330 Art Therapy Practice and Research: Children. Cr. 3

Slides, lectures and studio experiences relating to the research, theory and practices of art therapy with children. (B)

7340 Art Therapy Practice and Research: Adults. Cr. 3

In-depth presentation of theory, practice and research in art therapy with older adults. Slides, lectures, studio experiences. (Y)

7380 Art Therapy Laboratory. Cr. 3

Laboratory experience and lecture in art therapy with children and/or adults. Includes assessment, planning goals and objectives, implementing the session, evaluating the session, case supervision, and the assessment of and development of therapeutic skills. (Y)

7400 Art Trends and Art Education. Cr. 3 (Max. 9)

Slide lectures and discussions; trends and aspects of art history; roles of art and artists within a technical society and new art criteria of that society; application of new information and speculative ideas to the art curriculum; Verbal-visual projects to extend learning and experience within art education research component. (F)

7700 Advanced Graduate Problems. Cr. 3-12 (Max. 12)

Pursuit of specific problems in depth. Laboratory hours coordinated with regularly scheduled classes in the selected area. Material fee as indicated in the Schedule of Classes. (T)

7880 Practicum in Art Therapy I. Cr. 3-6

Supervised internship in which students complete 300 hours in the practice of art therapy with individuals, groups and/or families. Includes regular seminar in which art therapy methods in various fields are explored. (Y)

7890 Practicum in Art Therapy II. Cr. 1-6

Supervised advanced internship of 300 hours in the practice of art therapy with individuals, groups and/or families; includes regular seminar in which art therapy methods in various fields are explored. (B)

BILINGUAL/BICULTURAL EDUCATION (BBE)

5000 Multicultural Education in Urban America. Cr. 2

Cultural, social, political, and economic realities of our complex, pluralistic society in relation to our educational system. Development of analytical and evaluative abilities of teachers to deal with racism, sexism, value clarification, and the parity of power. Strategies for multicultural education. (T)

5020 Effective Involvement of Parents in School and Community. Cr. 3

Concepts of parenting and parent intervention. Determination of methods to maximize parent participation in the educational process of bilingual/bicultural students. (W)

5500 Introduction to Bilingual/Bicultural Education. Cr. 3

Survey of the history and legislative background of bilingual/bicultural education in the United States. Emphasis on the foundations, methods, concepts and theories of bilingual/bicultural education. (F)

5530 The Socio-Psychological Needs of Ethnocultural Communities. Cr. 3

Assessments of issues of concern to ethnocultural communities as a background for social services delivery and intervention. (F)

5550 Urban Education. Cr. 3

Language program implementation within the urban culture of the school, community, and state. (I)

6560 Teaching Methods in Bilingual/Bicultural Education. Cr. 3

Prereq: admission to a bilingual endorsement program. Utilization of traditional and innovative materials, techniques and methods in teaching elementary and secondary school subjects in a bilingual education program. (F)

6590 Culture and Language in Bilingual/Bicultural Education. Cr. 1-3

Research and application of multicultural activities for designing processes to bring language and culture, and instruction in English, into the classroom. (I)

6600 Internship in Bilingual/Bicultural Teaching. Cr. 2-12

Offered for S and U grades only. Internship in a bilingual, multicultural setting; assessment of the cultural, educational, and linguistic needs of students of limited English-speaking ability. (T)

6700 Seminar in Cultural Awareness. Cr. 3

Understanding intergroup relations and the appreciation of cultural diversity in a multicultural society such as the United States. Selected topics offered on a semester or yearly basis. (W)

6850 Applied Linguistics: Issues in Bilingual Education. Cr. 3

Current major models of applied English linguistics, contrasting linguistics with special reference to the comparison of English and linguistic minority languages. (W)

9010 Theoretical Implications of Bilingual/Bicultural Education. Cr. 3

Theoretical foundations for the development of bilingual/bicultural and multicultural education programs in our schools. (I)

9030 Advanced Seminar in Bilingual/Bicultural Education. Cr. 2-4 (Max. 12)

Advanced seminar for doctoral students in the bilingual, multicultural education program. Topics to be announced in Schedule of Classes (I)

BUSINESS and DISTRIBUTIVE EDUCATION (BDE)

5300 Business/Distributive Education Word Processing I: Typewriting. Cr. 3

Principles and procedures for learning and teaching a basic and advanced process for using the typewriter to compose and copy business and personal materials. (F,S)

CAREER and TECHNICAL EDUCATION (CTE)

5410 Career and Technical Education. Cr. 3

Strategies and materials for the teaching of career/technical education subjects in a competency-based education setting. Teaching techniques, basic assessment, and evaluation as well as community and technological influences on teaching. (W)

6010 History and Principles of Career and Technical Education. Cr. 3

Overview of organization and administration at the federal, state, and local levels. Recent developments and their significance for school reform and improvement; business and industry linkages. (Y)

6992 Cooperative Education - Field Study. Cr. 1-10 (Max. 12)

Field experience to correlate with the teaching of career/technical education subjects. (F,W)

6993 Special Problems in Career and Technical Education. Cr. 1-4 (Max. 6, M.Ed.; max. 8, Ed. Spec.; max. 12, Ed.D. and Ph.D.)

Special workshops and short term seminars in career and technical education subjects. (F,S)

6999 Coordination of Cooperative Occupational Education. Cr. 3

Philosophy and objectives of educational programs that provide for work experience. Student selection, on-the-job and in-school instruction, placement, coordination, advisory committees, and administration of such programs. (F)

7820 Planning and Organizing Instruction in Career and Technical Education. Cr. 3

Planning and organizing instruction for a competency based program: justification, approaches for content, performance objectives, instructional resources, planning and evaluating units. Should be taken in first two semesters of admission to career and technical education master's program. (F)

7830 Objective-Referenced Evaluation in Career and Technical Education. Cr. 3

Open only to career/technical education teachers and administrators. Principles and procedures of objective-referenced evaluation and assessment as incorporated into the competency based model of instruction. (W)

8998 Current Issues and Trends. Cr. 3 (Max. 6, M.Ed. and M.A.T.; max. 9, other advanced degree programs)

Place, function, and evolving concepts of career and technical education. Economic, sociological, psychological, and technical factors. (W,S)

ELEMENTARY EDUCATION (ELE)

6020 Seminar in Early Childhood. Cr. 3

Educational programs for young children in child care centers, kindergartens, and the primary grades. Improved human relationships, choices for children, play as a way of learning. (Y)

6030 Assessment of Young Children in Educational Settings. Cr. 3

Strategies for authentic assessments of young children in school and family educational settings. (Y)

6040 Role of Content Areas in Early Childhood Education. Cr. 2-8

Child growth and development as related to the content areas within the early childhood years (birth to eight years). Appropriate subject matter, field experience, reference materials, audio-visual resources in the lives of young children. Topics to be announced in Schedule of Classes. (S)

6060 Community Contacts: Working with Families in Urban Settings. Cr. 3

Programs and services within the community that assist families in improving educational services for the child. (Y)

6070 Parent Intervention Programs in Home and School. Cr. 3

Program models, research, and relationship between school and parent intervention programs. (Y)

6080 Preprimary Goals and Practice. Cr. 2

An examination of current programs and research in nursery school and kindergarten education. (F,W)

6090 Introduction to Infant Mental Health Theory and Practice. Cr. 1

Concepts of infant mental health theory and practice as a developmental framework for the observation, assessment and understanding of infant-parent behaviors and interactions as indicators of strengths and risks in the security of the attachment relationship. (Y)

6100 Planning and Implementing Nursery School Curriculum. Cr. 3

Planning, implementing, and evaluating all aspects of preschool curriculum: activities, routines, and working with staff and parents. (I)

6290 Language Arts Instruction: Preprimary-9. Cr. 3

Prereq: admission to MAT degree program. Developing thinking, listening, speaking and writing skills in elementary and middle schools. Students plan, implement and evaluate learning experience with children under professional guidance. (F,W)

6300 Language Arts Curriculum: Preprimary-9. Cr. 3

Prereq: admission to teacher certification program. Content of language arts programs. Objectives, procedures, materials, and organizational patterns. (T)

6310 Reading Instruction: Preprimary-9. Cr. 3

Prereq: admission to M.A.T. degree program. Developing reading skills in elementary and middle schools. Students plan, implement and evaluate learning experience with children under professional guidance. (F,W)

6320 Reading Curriculum: Preprimary-9. Cr. 3

The reading process; procedure, materials and organizational patterns used when teaching reading. (T)

6340 Teaching Reading in Early Childhood Education. Cr. 3

Rationale for teaching reading and various reading skills to young children. Materials and methods for initial reading instruction. (Y)

6360 Remedial Instruction in Reading and Related School Subjects. Cr. 3

Diagnosis, treatment, and prevention of learning difficulties in reading and related subjects. Emphasis on overcoming learning difficulties within the regular classroom. (Y)

6390 Mathematics Instruction: Preprimary-9. Cr. 3

Prereq: admission to MAT degree program. Developing mathematics skills in elementary and middle schools. Students plan, implement and evaluate learning experience with children under professional guidance. (F,W)

6400 Mathematics Curriculum: Preprimary-9. Cr. 3

Prereq: admission to teacher certification program. Developing competence in school mathematics programs: objectives, procedures, materials, organizational patterns, evaluation. (T)

6500 Science Curriculum: Preprimary-9. Cr. 3

Prereq: admission to teacher certification program. Role of learning in science in the curriculum. Objectives, plans of organization for learning, resources materials. Overview of balanced program. Experiences with appropriate experiments, field trips, reference materials, audio-visual resources. Material fee as indicated in the Schedule of Classes. (T)

6600 Social Studies Curriculum: Preprimary-9. Cr. 3

Social studies program in elementary and middle schools emphasizing intellectual, social and affective development. Designing programs based on social priorities, modern socioeconomic, cultural, ethnic, political concepts. (T)

7020 Issues in Early Childhood Education. Cr. 3

Current issues in early childhood care and education including theories, research, best practice, and historical philosophies. (Y)

7220 Survey and Analysis of Literature for Younger Children: Grades PS-3. (LIS 6510) Cr. 3

Intensive examination of books appropriate for preprimary and primary school children. Analysis of the literary and extraliterary factors that affect the young child's experiences with fiction and non-fiction. (Y)

7240 Survey and Analysis of Literature for Older Children: Grades 4-8. (L S 6520) (LIS 6520) Cr. 3

Intensive examination of books appropriate for children in grades four through eight. Analysis of literary and extra-literary factors affecting the older child's experiences with fiction and non-fiction. (Y)

7260 Functions of Literature in Early and Late Childhood. Cr. 3

The effect of fiction and non-fiction on children's cognitive and social development. Specific uses of children's literature for education in home, school, and community. (I)

7280 Storytelling. (LIS 6550) Cr. 3

Selection of appropriate literature and materials for storytelling; guided practice in selection and presentation of literature for oral communication by reading aloud and storytelling. (Y)

7850 Current Developments in Elementary Education. Cr. 1-9

Topics to be announced in Schedule of Classes. (I)

ENGLISH EDUCATION (EED)

5200 Methods of Teaching English: Grades 7-12. Cr. 3

Introduction to the purposes and methods of teaching English composition and literature in grades seven through twelve. (Y)

6120 English Composition in Secondary Schools. Cr. 3

Analysis of modes of writing; relationship of grammar and composition; integration with literature and reading; approaches to group and individualized instruction; relation of composition to perception, cognition, critical thinking, motivation, and self-awareness. (I)

6210 Linguistics and Learning. Cr. 3

Intensive review of current linguistic theory; introduction to psycholinguistics application for teaching grammar, usage, and composition; development of teaching materials. (S)

6310 (EED 6310) Literature for Adolescents. (LIS 6530) Cr. 3

Standards for evaluating adolescent literature. Selection of literature for individual pupils in relation to interest and reading ability. Use of classroom collections. Techniques for helping pupils read poetry, drama and fiction. (W)

6330 Teaching Literature in Secondary Schools. Cr. 3

Structure of poetry, fiction and drama in relation to aesthetic, social, and psychological needs of secondary school pupils. Relationship of teaching methods to curriculum patterns. (T)

7050 Current Developments in the Teaching of English. Cr. 2-8

Application of modern theories in classroom settings. Advanced experimental teaching. (T)

LANGUAGE EDUCATION (LED)

6520 Teaching English as a Second Language/Foreign Language: Methods I. Cr. 3

Methods and techniques; fundamental theory and practice; English as an international/intranational language. Students micro-teach lessons and prepare teaching materials which emphasize the listening and speaking language skills. (Y)

6530 Teaching English as a Second Language/Foreign Language: Methods II. Cr. 2-3

Methods and techniques; English as an international/intranational language. Students micro-teach lessons and prepare teaching materials which emphasize the reading and writing language skills. (Y)

6580 Culture as the Basis for Language Teaching. Cr. 2-4

Culture examined in a multidisciplinary theoretical framework, to provide students with objective relativistic and holistic attitude about human diversity, enabling them to relate to pupils in urban areas. (B)

7210 Special Problems in Language Education. Cr. 3

An examination of current problems which inhibit foreign language teaching. Students identify particular problems and work individually or in groups to seek solutions.

7240 Advanced Seminar in Language Teaching. Cr. 2-4

Development, production, and evaluation of innovative techniques for first and second language teaching. (I)

MATHEMATICS EDUCATION (MAE)

5050 (MAT 5160) Mathematics for Elementary School Teachers I. Cr. 3

Prereq: one of following within previous two semesters: satisfactory score on qualifying exam or MAT 1050, or MAT 0995 with recommendation of instructor to enter MAE 5050. No credit toward a major or minor for secondary mathematics teaching. Graduate credit for MAE 5050 only; undergraduate credit for MAT 5160 only. Sets and Venn diagrams; mathematical systems, including group, ring, and field properties; set of real numbers and its common subsets; their properties, algorithms, and applications; number theory, including fundamental theorem of arithmetic; ratio, proportion, and percents; introduction to the complex number system. (F,W)

5060 (MAT 5170) Mathematics for Elementary School Teachers II. Cr. 3

Prereq: MAE 5050. No credit towards a major or minor for secondary mathematics teaching. Graduate credit for MAE 5060 only; undergraduate credit for MAT 5170 only. Geometry, with emphasis on inductive investigations and conjecturing; measurements of two- and three-dimensional figures; introduction to probability and descriptive statistics; relations and functions; elements of algebra; analytic geometry of the line. (F,W)

5100 (MAT 5180) Mathematics for Middle/Junior High School Teachers I. Cr. 3

Prereq: MAE 5050 and 5060 or consent of instructor. No credit toward a major or minor for secondary mathematics teaching. Graduate credit for MAE 5100 only; undergraduate credit for MAT 5180 only. Development of Euclidean geometry as a mathematical system; related historical topics; introduction to other geometries; selected topics such as transformations and tessellations. (F)

5110 (MAT 5190) Mathematics for Middle/Junior High School Teachers II. Cr. 3

No credit toward a major or minor for secondary mathematics teaching. Graduate credit for MAE 5110 only; undergraduate credit for MAT 5190 only. Elementary functions and their applications; analytical geometry; intuitive concepts of differential and integral calculus; computer applications in middle and junior high school mathematics. (W)

5150 Methods and Materials of Instruction - Secondary School Mathematics. Cr. 3

Prereq: admission to teacher education; 19 credits toward secondary mathematics major or minor. To be elected before student teaching. To be elected before student teaching. Mathematics in secondary school; major concepts of secondary school mathematics; methods and instructional materials; classroom administration; modern trends. (Y)

6050 Teaching Mathematics in the Middle Grades. Cr. 3

Creative use of resources and materials for improving the mathematics competencies of middle school and junior high school students; organizing the mathematics classroom for effective instruction; promising trends; related research. (Y)

6150 Special Topics. Cr. 1-6 (Max. 12)

Current issues and trends; areas of neglected content; curriculum proposals; related research. Topics to be announced in Schedule of Classes. (I)

8050 Advanced Studies in Teaching Algebra. Cr. 3

Fundamental concepts of algebra for a modern secondary school mathematics program; current trends and experimental programs; related research; methods and materials of instruction. (B)

8100 Advanced Studies in Teaching Geometry. Cr. 3

Role of geometry and trigonometry in secondary school mathematics; selection of major concepts; development of postulational thinking; teaching procedures emphasizing modes of thinking in mathematics; modern trends. (B)

8200 Advanced Studies in Teaching Statistics and Probability. Cr. 3

Techniques for teaching statistics and probability in grades K-12; promising materials and activities; research on the learning and teaching of statistics and probability; related resources; review of basic concepts. (B)

READING EDUCATION (RDG)

6120 Reading in the Content Areas. Cr. 3

Practical approach to the problems of reading disability as they affect the subject matter teacher in social studies, science, mathematics and other areas. (T)

6400 Practicum in Developmental Reading. Cr. 1-4

Identifying and solving field problems in developmental reading, management of reading instruction, the importance of reading in the content areas. (T)

6410 Practicum in Reading Diagnosis and Remediation. Cr. 1-4

Prereq: consent of instructor. Identifying and solving field problems in testing reading skills, placement of students in appropriate reading instruction, materials, strategies for remediation of skill deficiencies. (T)

6420 Practicum in Reading in the Content Areas. Cr. 1-4

Prereq: consent of instructor. Identifying and solving field problems in reading in the content areas. (I)

7100 Emergent Literacy. Cr. 3

Variety of theories, organization and instructional strategies involved in the beginning stages of literacy; their application to the classroom. (Y)

7130 Reading in the Elementary School. Cr. 3

Strategies, programs, and materials for teaching reading readiness, beginning reading, oral reading, and comprehension in the elementary school. The reading process; factors affecting student achievement. (Y)

7140 Reading in the Middle School and High School. Cr. 3

Strategies and materials for teaching reading to the pre-adolescent and adolescent student. Oral reading, comprehension, critical reading, study skills. Alternative programs. (Y)

7200 Comprehension. Cr. 3

Prereq: RDG 7100. Models of comprehension, factors that affect comprehension, instructional methods, reading/writing connection, evaluation (pre-K to adult). (Y)

7300 Literacy Across the Curriculum. Cr. 3

Prereq: RDG 7100, 7200. Theoretical bases for teaching literacy across the curriculum; strategies for organization and instruction. Action research as a tool for learning. (Y)

7400 Practicum and Seminar in Evaluation and Instruction. Cr. 3 (6 req.)

Prereq: RDG 7100, 7200. Offered for S and U grades only. Must be elected in consecutive Fall and Winter semesters; credit awarded only on completion of second semester. Evaluation and literacy competencies of learners, methods of instruction, use of portfolios and reports to document progress; applied during supervised tutoring. (Y)

7500 Theoretical Foundations for Literacy. Cr. 3

Prereq: RDG 7100, 7200. Implications of theories from sociology, psychology, linguistics, semiotics and related fields, for the development of literacy. (Y)

7600 Current Developments in Literacy Education. Cr. 1-6

Topics of current interest; review of literature, discussion of educational implications. (Y)

8700 Organizing for Reading Instruction. Cr. 3

Organizing for reading instruction in schools, classrooms, reading rooms, and reading laboratories. Record keeping. Reporting to colleagues, administrators and parents. Assessing, revising and reassessing programs. (B)

8800 Seminar: Survey of Research in Reading I. Cr. 3

Survey of studies in language acquisition, readiness for beginning reading instruction, approaches to beginning reading instruction, perception and identification of words and phrases, comprehension, critical and creative reading, reading in the content areas, study skills, reading efficiency, independent reading, and theories and definitions of reading. Consideration of strategies commonly used in reading research. (B)

SCIENCE EDUCATION (SCE)

5010 Biological Sciences for Elementary and Middle School Teachers. Cr. 3-4

Significant biological principles, generalizations and understandings with relation to their use with children. Appropriate learning activities; experiments, field trips, text and reference materials, audio-visual resources, evaluation. Material fee as indicated in the Schedule of Classes. (FW)

5020 Physical Sciences for Elementary and Middle School Teachers. Cr. 3-4

Significant principles, generalizations and understandings in the physical and earth sciences with relation to their use with children. Appropriate learning activities including experiments, field trips, reference materials, audio-visual resources. Material fee as indicated in the Schedule of Classes. (FW)

5040 Field Course Exploring the Natural Environment. Cr. 1-6

Field and laboratory study of local plants, animals, and the physical environment, including climate, geology and astronomy. Interrelationships emphasized; techniques for using the out-of-doors as a learning laboratory. (W)

5060 Methods and Materials of Instruction in Secondary School Science I. Cr. 3

Role of science in the secondary curriculum. Problems and techniques of teaching science in the secondary schools; objectives, planning laboratory experiments, demonstrations, directed study, student projects, text and reference material, audio-visual resources, evaluation. Material fee as indicated in the Schedule of Classes. (F)

5070 Methods and Materials of Instruction in Secondary School Science II. Cr. 3

Prereq: SCE 5060 recommended. Problems of selecting and organizing teaching-learning materials in secondary school science. Development of illustrative instructional units. Resources for professional growth of science teachers; professional literature and organizations. Material fee as indicated in the Schedule of Classes. (W)

6030 Advanced Studies in Teaching Science in the Junior High and Middle School. Cr. 3

Innovations and improvements in middle school and junior high school science teaching. Exploration of appropriate areas of study, development and selection of learning activities and materials; laboratory experiences in selected areas. (W)

6040 Advanced Studies in Teaching Science in the High School. Cr. 3

Emphasis on methods of teaching biology and the physical sciences in the high school. Recent curriculum studies, research, and current problems. Laboratory experiments, equipment, textual and reference material, audio-visual resources, and evaluation procedures. Material fee as indicated in the Schedule of Classes. (S)

6080 Teaching Environmental Studies. Cr. 3-6

For teachers of all academic disciplines and from all school levels, as well as persons of other occupational interests. Environmental problems, possible solutions, and their implications for classroom teaching and curriculum. Material fee as indicated in the Schedule of Classes. (S)

7010 Curriculum Planning in Elementary and Secondary School Science. Cr. 1-6 (Max. 12)

Prereq: teaching or supervisory experience recommended. Curriculum study experiences for in-service teachers, supervisors, principals and coordinators in developing science curricula. Goals and objectives of a K-12 program, selection of appropriate teaching-learning experiences and materials, evaluation and preparation of curriculum materials, preparation and evaluation of activities. (S)

SOCIAL STUDIES EDUCATION (SSE)

6710 Methods and Materials of Instruction in Secondary Social Studies. Cr. 3

Prereq: admission to teacher certification program. Foundations of social studies instruction and curriculum; methods of teaching in middle, junior, and senior high school. (F,W)

6730 New Perspectives in Social Studies Education. Cr. 3

Specialized aspects of social education: gaming and simulation, global education, law-related education, community projects, interdisciplinary approaches. Topics to be announced in Schedule of Classes (F,W)

7780 Readings in the Social Studies. Cr. 3-5

A reading seminar in recent American writing in political, social and economic history and current affairs, with emphasis on teaching strategies and goal selection in secondary education. (F,W)

8740 Advanced Seminar in Social Studies Education, K-12. Cr. 3

Theories of social education; contrasting curricular designs, their assessment and evaluation; critique of research; study of curricular improvement problems. (F)

SPECIAL EDUCATION (SED)

5030 Education of Exceptional Children. Cr. 3

Prerequisite or corequisite to all SED courses taken for major credit. General background and overview information concerning various classifications of exceptional children, their role in society, and their education. (T)

5040 Speech Improvement in the Classroom. Cr. 2

Prereq: admission to teacher certification program. Identification of the speech characteristics and needs of teachers and pupils; deviations from normal speech; integration of speech improvement in classroom activities. (S)

5070 (SLP 7010) Acoustics of Speech. Cr. 3

Prereq: SLP 5080, SLP 5090. Acoustic consequences of phonetically-relevant articulatory movements. (F)

5110 Mental Retardation and the Cognitive Process. Cr. 3

Prereq: SED 5030 recommended. Characteristics, classifications, etiologies, evaluation and learning strategies for the improvement of the cognitive processes in mentally impaired learners. (F,W)

5120 (SLP 5120) Speech Science. Cr. 3

Prereq: SLP 5300, SLP 5080, SLP 5090. Speech production, acoustics of sound, perception of the speech signal. (Y)

5130 Curriculum Development: Mental Impairments. Cr. 3

Prereq: SED 5030 and 5110 recommended. Specialized instructional approaches, evaluation, techniques, curriculum and instructional aids for the mildly to profoundly mentally-impaired learner. (Y)

5140 Behavior Management: Mental Impairments. Cr. 3

Prereq: SED 5030 and 5110 recommended. Specialized instructional and training approaches for management of behavior problems of mildly to profoundly mentally impaired and multiply impaired learners. (Y)

5260 Home and Hospital Education of Children with Physical Impairments. Cr. 4

Prereq: SED 5030 recommended. Emphasis on educational, recreational and vocational programs for children with physical health and neurological impairments in home, school and hospital settings. (F)

5300 (SLP 5300) Introduction to Speech-Language Pathology. Cr. 3-4

Speech-language pathology in clinical and educational settings; classification of communication disorders and related management strategies. (F,S)

5310 (SLP 5310) Clinical Methods in Speech-Language Pathology. Cr. 3

Prereq: SLP 5080, SLP 5090, SLP 5300, SLP 5320. Procedures and materials for clinical diagnosis of articulatory, language, rhythm, and voice deficits of organic and non-organic causation. (W)

5320 (SLP 5080) Phonetics. (LIN 5080) Cr. 3

Multisensory study of sounds of the English language, emphasizing acoustic, physiologic, kinesiological approaches. (F)

5330 (SLP 5090) Anatomy and Physiology of the Speech Mechanism. Cr. 3

General science of normal speech; anatomy, physiology and mechanics of respiration, phonation, resonance, articulation. (W)

5340 (SLP 5360) (W) Clinical Practice in Speech-Language Pathology. Cr. 2

Prereq: SLP 6460, SLP 6480, and SLP 5310, each with grade of B or better. Supervised experience in application of methods of diagnosis and treatment of clinical cases. Material fee as indicated in the Schedule of Classes. (T)

5360 (SLP 5320) Normal Acquisition and Usage. (LIN 5360) Cr. 3

Language development in children and the associated areas of emotional and motor development; language stimulation techniques and programs. (F)

5600 Introduction to Education of Hearing- and Visually-Impaired Children. Cr. 3

Characteristics of children with substantial hearing and vision impairments; how these impairments relate to curriculum planning and instruction in school; includes those defined as deaf or blind. (I)

5700 Computer and Adaptive Technology in Special Education. Cr. 2-3

Prereq: admission to teacher certification program. Offered for three credits to graduate students only. Introduction to computer applications in the education and habilitation of exceptional children and youth in schools. Experience with general purpose microcomputers and microprocessor-based adaptive devices for use in all categories and degrees of impairment. (S)

6000 Problems in Special Education: Critical Epochs in Exceptionality. Cr. 1-6 (Max. 8)

Prereq: successful completion of at least five credits in anatomy and physiology, including laboratory. For teachers, supervisors, and administrators. Seminars and workshops dealing with problems in educating handicapped children in pre-school, elementary, and secondary programs. Topics to be announced in Schedule of Classes. (I)

6010 Seminar in Special Education Teaching. Cr. 2-3

Coreq: student teaching in special education. For teachers, supervisors, and administrators. Investigation of theories, programs, and practices in teaching the multi-handicapped. Emphasis on the problems associated with the education, training, and programming of multi-handicapped students. (F,W)

6020 Educating Intellectually Superior, Creative, and Talented Children. Cr. 3

Individual differences, characteristics, identification, development, curriculum, adaptations, teaching procedures. (I)

6040 Introduction to Early Childhood Special Education. Cr. 3

History, philosophy, legislation, and "best practice" of early intervention and educational programs for young children, birth to eight years old, who have developmental delays or disabilities. (W)

6360 (SLP 6360) Advanced Clinical Practice in Speech-Language Pathology. Cr. 2

Prereq: SLP 5360 or equiv. with grade of B or better. Supervised experience in application of diagnosis and treatment of clinical cases. Material fee as indicated in the Schedule of Classes. (T)

6460 (SLP 6460) Language and Phonological Disorders. Cr. 4

Prereq: SLP 5080, SLP 5090, SLP 5300, SLP 5320. Introduction to the clinical management of articulation and language disorders. (F)

6480 (SLP 6480) Organic and Fluency Disorders. Cr. 4

Prereq: SLP 5080, SLP 5090, SLP 5300, SLP 5320. Introduction to the clinical management of cleft palate, voice, and stuttering disorders. (F)

6640 (SLP 6640) Language Pathology: Etiology and Diagnosis. Cr. 3

Prereq: SED 5300 and 5320. Descriptions, etiology, methods of diagnosis of language disorders in children, including remediation. (F)

7030 Educational Assessment in Early Childhood Special Education. Cr. 3

Introduction to a variety of assessment tools and instruments and their administration for young children who have developmental delays or disabilities. Focus on linking assessment and intervention "best practices." (S)

7050 Mainstreaming Handicapped Students. Cr. 2

Open only to non-majors. Strategies and techniques for integrating handicapped students into regular classrooms. (Y)

7140 Community-Based Instruction for Integration. Cr. 3

Information and practice concerning curriculum strategies for integrating students with special educational needs in regular education classrooms; identification of functional learning objectives for life; skill development in community-referenced curriculum development. (I)

7300 (SLP 7360) Internship in Speech Pathology. Cr. 4 (Max. 12)

Prereq: written consent of instructor. Advanced professional experience in clinical speech language pathology. (T)

7310 (SLP 7380) Diagnosis of Speech and Language Problems. Cr. 3 (Max. 9)

Clinical practice in diagnosis; handling referral to medical specialists; planning, training, treatment procedures. (F,S)

7320 (SLP 7020) Speech Production and Perception. Cr. 3

Prereq: SED 5070. Integration of the information from various disciplines involved in the production and measurement of speech and language. (F)

7590 (SLP 7590) Dysphagia. Cr. 3

Prereq: SLP 5090. Assessment and management of neurologic and mechanical swallowing disorders in children and adults. (Y)

7600 (SLP 7600) Phonological Disorders. Cr. 3

Prereq: SED 6600. The etiology, diagnosis and advanced treatment regimens of phonological disorders in children and adults. (S)

7610 (SLP 7610) Stuttering. (SED 7610) Cr. 3

Prereq: SED 6610, SPD 7360. The etiology, diagnosis and treatment of stuttering disorders in children and adults. (W)

7620 (SLP 7620) Voice Disorders. Cr. 3

Prereq: SED 6620. The etiology, diagnosis and treatment of voice disorders in children and adults. (S)

7630 (SLP 7630) Aphasia. Cr. 3

Prereq: SED 6630. Assessment and remediation principles designed for the adult aphasic. (Y)

7640 (SLP 7640) Language Disorders. Cr. 3

Prereq: SED 6640. Linguistic, cognitive, pragmatic, and perceptual considerations in assessment and remediation of childhood language disorders. (W)

7660 (SLP 7660) Neurology and Motor Speech Disorders. Cr. 3

The etiology, diagnosis and treatment of neuromuscular disorders in children and adults, including neuroanatomy, dysarthria, and cerebral palsy. (F)

7690 (SLP 7690) Cultural and Linguistic Diversity in Communication Disorders. Cr. 3

Prereq: CDS 6640. Theoretical and applied issues in cultural and linguistic diversity as they relate to concerns in communication disorders and sciences. (Y)

7760 Teaching Learning Disabled Children. Cr. 4

Methods, materials, and procedures for education of children with learning disabilities in elementary school programs. (F)

7770 Teaching Learning Disabled Adolescents. Cr. 4

Methods, materials, and procedures for education of adolescents with learning disabilities in secondary school programs. (W)

7790 Language Bases of Learning Disabilities. (CDS 6330) (SLP 6330) (SPD 6330) Cr. 3

Normal language acquisition and development and language pathology, including neurological process involved in speech reception and production, and assessment of language disorders as they related to learning disabilities. (S)

7800 Practicum with the Emotionally Impaired or Socially Maladjusted. Cr. 1-10

Prereq: consent of instructor. Special laboratory experience of educational work in an interdisciplinary treatment setting with emotionally impaired children or adolescents. (S)

7820 Psycho-Educational Information for Teachers of Emotionally Impaired. Cr. 3-4

Philosophies, etiology, diagnostic categories, and current programs and models in day school and residential settings for emotionally impaired and socially maladjusted children and youth. (I)

7830 Psycho-Educational Management and Curricula for Emotionally Impaired. Cr. 3-4

Required for teachers preparing to teach emotionally impaired children. Curriculum and program development, special methodologies, techniques of management, and procedures in day school and residential settings for emotionally impaired children and youth. Prevailing views, current issues, and research. (I)

7840 Psycho-Educational Intervention and Acting Out Phenomenon. Cr. 2-3

Orientations of teachers of the emotionally impaired and ancillary personnel to techniques of intervention with acting out children and youth. (W)

8700 Practicum-Internship in Educating Exceptional Children. Cr. 1-8 (Max. 8)

Prereq: consent of adviser. Professional experiences in university or in state and local programs in special education; based on student's objectives of college teaching or administration and supervision. (T)

SPEECH EDUCATION (S E)

5370 (SPC 5040) *The Rhetoric of Racism.* (AFS 5040) (LIN 5040) Cr. 3

Issues and topics related to the study of communication behaviors and patterns in the black community. Topics focus on specific cultural, rhetorical and sociological aspects of life in African American communities. (Y)

6060 (SPC 6060) *Teaching Communication at the Secondary Level.* Cr. 3

Prereq: fifteen credits in speech. Philosophy, pedagogical issues, and methods for teaching speech in secondary schools. (I)



THEORETICAL and BEHAVIORAL FOUNDATIONS

Assistant Dean: JoAnne Holbert
Office: 341 Education Building; 577-1721

Professors

Stephen B. Hillman, Donald Marcotte, Barry S. Markman, John J. Pietrofesa, Shlomo Sawilowsky

Associate Professors

Arnold Coven, Alan Hoffman, JoAnne Holbert, Patricia Leonard

Assistant Professors

Daisy B. Ellington (Clinical), Lori Rothenberg

Graduate Degrees

MASTER OF EDUCATION with majors in educational evaluation and research, counseling, history and philosophy of education¹, educational psychology, and educational sociology¹.

MASTER OF ARTS with majors in school and community psychology, counseling, and rehabilitation counseling and community inclusion.

DOCTOR OF EDUCATION with majors in educational psychology, educational sociology¹, educational evaluation and research, and counseling.

DOCTOR OF PHILOSOPHY with majors in educational psychology, educational sociology¹, educational evaluation and research, and counseling.

EDUCATION SPECIALIST CERTIFICATES with majors in counseling, and school and community psychology.

The Division of Theoretical and Behavioral Foundations includes degree programs in educational evaluation and research, counseling, educational psychology, school and community psychology (with a possible emphasis in marriage and family psychology), educational sociology, history and philosophy of education, and rehabilitation counseling and community inclusion. The Division is designed to facilitate a realization of the following aims:

- (1) to integrate the educational experiences and course offerings;
- (2) to perform a service function in meeting the needs of those enrolled in other divisions within the College;
- (3) to provide degree and specialist programs for those who are majoring in a particular field of the division;
- (4) to provide students with an opportunity to study those aspects of educational thought and practice that are interdisciplinary as well as 'foundational';
- (5) to formulate programs looking toward the development of new combinations of specialties, as in (a) counseling-psychology, (b) pupil personnel managers in school systems, (c) utilization of theoretical and behavioral foundations in teacher education, (d) underlying philosophical premises of educational programs and practices; and
- (6) to design interdisciplinary, cross disciplinary, and multidisciplinary experiences for and with students.

1. An admission moratorium is in effect for this program.

COUNSELING

The counselor education unit offers graduate counseling programs for those professionals committed to being effective counselors in elementary and secondary schools, colleges, universities, and private and public agencies, and for those teachers who are committed to becoming more effective in working with children. A concentration in school counseling is available for persons desiring to work within the public school system. A concentration in community counseling with focuses in agency or substance abuse counseling is available for persons desiring to work within the public or private community sector.

All applicants will be evaluated with respect to their potential for being effective counseling professionals. Admission decisions are based on a review of the application and a personal interview with the appropriate admission committee. Acceptance is dependent upon the applicant's professional potential, academic and professional background, and professional career goals.

Master of Arts degree programs are offered for those individuals who expect to be engaged in counseling in non-school settings such as community agencies, health care facilities, employment agencies, churches or religious organizations and industry.

Master of Education degree programs are offered for those individuals who expect to become school counselors, career guidance specialists, and for those who wish to broaden or improve their teaching competency by including guidance skills. Individuals seeking State of Michigan K-12 school counselor endorsement must have a valid teaching certificate.

The counselor education unit offers the *Education Specialist Certificate*, the *Doctor of Philosophy*, and *Doctor of Education* degrees. These programs are intended to prepare counselor educators and supervisors and advanced practitioners for professional leadership roles of counselor education and supervision. It includes skills related to advanced counseling practice, consultation services, and research expected of doctoral graduates in both academic and clinical settings. The doctoral programs' primary objective is to extend the knowledge and skill bases of the counseling profession. Doctoral study utilizes a climate of scholarly inquiry to promote this extension of skills and knowledge. These programs are not entry level programs, but build on a master's level preparation in counseling.

The *Education Specialist Certificate* program is intended for guidance professionals who want to improve their competence in counseling. Since this is a professional certificate program, persons considering applying should confirm that they have the prerequisite education and experience prior to making formal application.

The *Doctor of Philosophy* is generally required for those intending to teach, conduct research, or provide counseling services in universities and colleges. In addition, those desiring counseling positions in governmental or community agencies, and the like, may require advanced training in counseling theory and practice, consultation, scholarly research, and supervision of counselors.

The *Doctor of Education* program consists of advanced courses designed for those persons who wish to become directors of guidance or pupil personnel programs and coordinators or consultants in guidance and counseling programs in K-12 and intermediate school districts. The Ed.D. provides opportunities to improve skills and competencies as school counselors in counseling, program development, career development, consultation research, and supervision of counselors.

Class and Internship Scheduling: All counseling program courses are offered *only* in the evening hours (4:00 p.m. to 10:15 p.m.), permitting working students the opportunity to pursue their educational endeavors. Additionally, the counseling program will arrange with community settings (i.e., agencies, schools, institutions) whereby working students may complete the clinical portions of their programs as well as fulfill employment obligations elsewhere.

Time Limitation: Requirements for the Master of Arts or Master of Education degree must be completed within six years after completion of the first course applicable toward the degree. All degree

requirements for the doctoral program must be completed within seven years from the time of official admission.

Writing Style: The counselor education unit has adopted the *Publication Manual of the American Psychological Association* as the style guide for preparation of all papers submitted in fulfillment of program requirements.

Licensure: Individuals in the counseling profession who practice in Michigan must seek professional licensure. Satisfactory completion of degree requirements in the counselor education master's and doctoral programs allows the student to apply for the Limited Licensed Professional Counselor (LLPC) credential in the State of Michigan. The Educational Specialist Certificate program does not meet Michigan eligibility requirements for the professional counselor licensure. Information on licensure may be obtained from the Michigan Department of Commerce, Board of Counseling, P.O. Box 30018, Lansing, Michigan 48909; telephone: 517-335-0918.

Counseling Accreditation: The Council for Accreditation of Counseling and Related Educational Programs (CACREP), a specialized accrediting body recognized by the Council on Postsecondary Accreditation (COPA), has conferred accreditation to the following program areas in the counselor education program: community counseling (M.A.), school counseling (M.Ed.), and the Ed.D. and Ph.D. programs in counselor education and supervision.

Master of Arts with a major in Counseling

Admission: Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Regular admission to this counselor education program is contingent upon an honor point average of 2.6 ('C'=2) or above for the upper division of the undergraduate course work.

DEGREE REQUIREMENTS: The two focuses, agency counseling and substance abuse counseling, within the community counseling concentration require a minimum of fifty-two credits, under Plans A or C. Required courses for both focuses include: CED 6070, 6080, 7000, 7010, 7020, 7030, 7040, 7080, 7150; ED 7999; EDP 7370, 7410, 7490; and EER 7610. In addition, all community counseling concentration students are required to complete a total of six credits (600 clock hours) in supervised internship (CED 7020) at an approved field site which is commensurate with their career goals.

Students in the agency counseling focus must also complete six credits in CED 6720. Additional elective courses are selected in consultation with an adviser.

Students in the substance abuse counseling concentration must also complete CED 5030, 5090, and two credits in CED 6720, and additional elective courses selected in consultation with an adviser.

Master of Education with a major in Counseling

Admission: Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Regular admission to this counselor education program is contingent upon an honor point average of 2.6 ('C'=2) or above for the upper division of the undergraduate course work. A valid teaching certificate is required for State of Michigan K-12 school counselor endorsement.

DEGREE REQUIREMENTS: Generic requirements for the Master of Education may be found on page 73. The school counseling concentration requires a minimum of fifty-two credits under Plan A or C. Required courses for this specialization include: CED 6070, 6080, 7000, 7010, 7020, 7040, 7070, 7080, 7150 and two credits in CED 6720; ED 7999; EDP 7350, 7370, 7410, 7490; EER 7610; and SED 7050. Additional elective courses are selected in consultation with an adviser. All school counseling concentration students are required to complete a total of six credits (600 clock hours) in supervised internship (CED 7020) at an approved field site which is commensurate with their career goals.

Education Specialist Certificate with a major in Counseling

Admission: In addition to meeting the admission requirements for Education Specialist Certificate programs stated on page 74, applicants must have completed a master's degree in counseling, or completed the following prerequisites or their equivalents, before applying to the program: CED 6007, 6080, 7000, 7010, 7040, 7080, 7150; EDP 7490; and EER 7610. Applicants must also be licensed as a professional counselor and have two years of post-graduate experience as a counselor. Applicants must submit four letters of recommendation, a vitae, and complete a demonstration counseling session tape, prior to interviewing with the Advanced Admissions Advisory Committee.

CERTIFICATE REQUIREMENTS: A minimum of thirty credits is required for this certificate. Course requirements for the program are determined in consultation with an adviser.

Doctoral Degrees with a major in Counseling

Admission: In addition to meeting the basic admission requirements stated on page 75, a master's degree with a major in counseling or a closely-related field is required. This includes entry-level curricular experiences and demonstrated knowledge and skill competence in each of the following eight areas: human growth and development, social and cultural foundations, helping relationships, groups, lifestyle and career development, appraisal, research and evaluation, and professional orientation.

Prior to beginning advanced doctoral course work, students must satisfy *either* parts 1 or 2, *and* part 3, below:

1. A supervised master's practicum that totals a minimum of 100 clock hours including a minimum of forty hours of direct service work, and a supervised master's internship that totals a minimum 600 clock hours including a minimum of 240 hours of direct service work with clientele appropriate to the program emphasis.
2. Have obtained the Licensed Professional Counselor credential prior to September 30, 1993 *and* engaged in the practice of counseling for not less than 2,000 hours accrued over not less than a two-year period commencing after receipt of the master's degree.
3. Have made up any deficits or remedial work as listed on their approved application for admission form *before* beginning advanced doctoral course work. Specifically, those persons who have master's degrees from closely-related fields (psychology, social work, nursing) must complete all academic and clinical prerequisites required before beginning advanced doctoral course work.

Doctoral applicants must take the Graduate Record Examination (GRE) General Test and the departmental written examination, submit four letters of recommendation, a vita, and a demonstrated counseling session tape prior to interviewing with the Advanced Admissions Advisory Committee.

DEGREE REQUIREMENTS: Basic degree requirements for the Ph.D. and Ed.D. programs are stated on page 75. All doctoral students are also required to complete the following requirements:

- a. a concentration in counselor education which includes: CED 8000, 8030, 8040, 8080, 9020, and 9120.
- b. two doctoral seminars from the following foundation areas: EDA 9790, EDP 9310, EDS 9620, EHP 9600, or TED 9130.
- c. at least two doctoral-level supervised internships (CED 9020, 6000 clock hour minimum each, six credits each) during the doctoral program.
- d. course work aimed at developing competence in statistics and research methodologies: a minimum of fifteen credits in statistics and research design including: EER 7630, 7650, 8800, 8820; and CED 8070.
- e. curricular experiences designed to develop an additional area of professional expertise. Examples of cognate areas include: professional education, multicultural counseling, family counseling, geron-

ological counseling, substance abuse and addictive behavior, child and family studies, infant mental health, life-span development, industrial/organizational theory and development, social learning, psychology, or sociology. Course work will be selected by the student and the doctoral studies adviser in conjunction with an adviser from the cognate area. Electives may be chosen either from the major field or the cognate to fulfill the minimum degree requirement of 100 graduate credits. Electives should be chosen from areas that strengthen the basic program and areas of professional expertise of the student.

Additional Ph.D. Requirements: (a) a minimum of thirty credits of advanced course work (above 7000-level) in counselor education; (b) at least one cognate consisting of a minimum of ten credits in a single non-education field, elected outside the course offerings of the College of Education.

Additional Ed.D. Requirements: (a) a minimum of thirty-six credits of advanced course work (above 7000-level) in counselor education; (b) at least one cognate in professional education (an approved master's concentration area in education) or in a single field other than education consisting of a minimum of twelve credits.

EVALUATION AND RESEARCH

Evaluation and Research offers concentrated programs for building careers and leadership positions in educational evaluation and statistics; computer applications; and research methodology.

Students who have already successfully achieved backgrounds, training, and experience in substantive disciplines of education and in non-education fields and who are interested in becoming more proficient in scientific inquiry, research strategies, evaluation and appraisal of studies, models and designs, and multivariate analysis, especially in conjunction with computer facilities, are afforded such opportunities in these programs. For optimum effective preparation, internships in research will be arranged upon request. The staff is available to students and faculty for consultation in research design and multivariate analysis.

Cooperative educational programs leading to training skills in Educational Evaluation and Research in Medical Education are also available. This specialized training is available in cooperation with selected faculty from the School of Medicine. Persons from the health sciences seeking educational research skills and persons from education backgrounds seeking health science education skills are brought together for their mutual growth.

Master of Education with a major in Educational Evaluation and Research

Admission: See page 73.

DEGREE REQUIREMENTS: A minimum of thirty credits is required for this degree under Plan A, B, or C as defined on page 73. Required courses include ED 7999 if Plan B or C is elected, or ED 8999 for Plan A. In addition, a minimum of twelve credits in educational evaluation and research (EER) courses is required, as well as six credits in General Professional courses to be selected in consultation with an adviser.

Doctoral Degrees with a major in Educational Evaluation and Research

Admission: Applicants to doctoral program in this area must meet the admission requirements stated on page 75.

DEGREE REQUIREMENTS: Basic degree requirements for Ph.D. and Ed.D. programs are stated on page 75. All courses in the major are selected in consultation with an adviser.

EDUCATIONAL PSYCHOLOGY

The master's degree programs in educational psychology are primarily concerned with the preparation of individuals working in educational settings such as schools, business and other fields who wish to develop skills and knowledge in the educational application of psychology.

The Master of Arts program provides two areas of specialization: a two-year program in school and community psychology, and a three-year program in marriage and family psychology. Satisfactory completion of the school and community psychology program allows the student to be certified as a school psychologist by the State of Michigan. It also allows the student to apply for a Limited License as a Psychologist (L.L.P.) in the State of Michigan. Satisfactory completion of the marriage and family psychology program also allows the student to qualify for the Limited License as a Psychologist in the State of Michigan and State certification as a marriage counselor.

Both of these programs serve as a base for further study at the Ph.D. level, which can lead to licensure by the State of Michigan as a Licensed Psychologist after completion of the Ph.D. program.

The program in school and community psychology is designed to develop the competencies necessary for approval as either a school or community psychologist at the master's or doctoral level. Students applying at the doctoral level must file program area applications concurrently for both programs.

The prospective student should recognize that this program involves, in addition to course requirements, clinical experience in school and agency settings dealing primarily with children. Retention in the program and recommendation for approval depend upon demonstrated clinical skill as well as on the student's academic achievement. The staff will try to arrange for a one-year psychological internship in either a school system or a community mental health facility.

In addition to completing all procedures for admission to the Graduate School, each applicant must complete a form obtained from the Division, complete a testing program, and be interviewed by an admissions committee.

Master of Arts with a major in School and Community Psychology

Admission: Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. A minimum of fifteen credits in psychology or educational psychology is prerequisite to admission. The verbal and quantitative sections of the Graduate Record Examination (GRE) are required as well as three letters of recommendation and a personal interview. Applications are accepted between September 1 and March 15. Students are admitted once each year and must begin the program in the fall semester of the year for which they are admitted.

School and Community Psychology Requirements:

Course work requirements include: EDP 6220, 7220, 7240, 7300, 7390, 7410, 7420, 7430, 7490, 7560, 7610, 7710, 8320, 8330; EER 5630; and ED 7999.

Electives: EDP 7400, 7620.

Marriage and Family Psychology Emphasis:

Course work requirements include: EDP 7190, 7200, 7240, 7370, 7410, 7430, 7490, 7520, 7560, 7610, 7710; CED 5090; EER 5630; and ED 7999. A practicum in clinical procedures (EDP 8320) is also required. This practicum includes diagnostic testing and psychotherapy under the supervision of a licensed psychologist. A minimum of 600 clock hours is required.

Master of Education with a major in Educational Psychology

Admission: See page 73.

DEGREE REQUIREMENTS: Basic degree requirements for the Master of Education degree are stated on page 73. A minimum of thirty credits is required for this program and all courses are selected in consultation with an adviser.

Doctoral Degrees with a major in Educational Psychology

Admission: Applicants to the Ph.D. program must meet the admission requirements stated on page 75. A master's degree with a major

in educational psychology or psychology from an accredited graduate school or a combined total of thirty credits in these disciplines is required. Evaluation of such preparation will be based on a content examination administered by the Educational Psychology Unit. All admission requirements must be completed before February 15 for registration in the subsequent fall term.

DEGREE REQUIREMENTS: The basic degree requirements for the Ph.D. degree are stated on page 75. This program requires a minimum of ninety-six credits beyond the baccalaureate degree. All doctoral students must complete EDP 8210, 8230, and 8250 during their first year of study. Research course requirements include: EER 7630, 7650, 8800, 8820, and 8920.

A broad preliminary examination will be administered to the doctoral student at the end of the first year of study.

EDUCATIONAL SOCIOLOGY¹

The programs in educational sociology are concerned with the preparation of students with a knowledge of the concepts, methodology, and research findings in sociology relating to the total educational enterprise in contemporary society. The formal and informal social structure of the school as well as the broad processes of cultural transmission in society are central areas for investigation. Course work and advisement are focused on developing students who are able to apply sociological concepts and techniques to major educational problems. Emphasis is placed upon shifts in power in educational decision making and upon the effects of social change on education, especially the impact of minority group influence.

Master of Education with a major in Educational Sociology

Admission: See page 73.

DEGREE REQUIREMENTS: Basic requirements for the Master of Education degree are stated on page 73. A minimum of thirty credits is required for this degree including fifteen credits in the major field, selected in consultation with an adviser. This degree is offered under Plan B or C as defined on page 73. Students are urged to complete at least six credits in electives outside the major.

Doctoral Degrees with a major in Educational Sociology

Admission: See page 75.

DEGREE REQUIREMENTS: Basic degree requirements for Ed.D. and Ph.D. programs are stated on page 75. All courses in the major are selected in consultation with an adviser.

HISTORY AND PHILOSOPHY OF EDUCATION¹

Courses and programs in history and philosophy of education are designed to strengthen the ability of educators to employ historical and philosophic approaches in the analysis of educational problems and issues. A master's degree program is offered for those who wish to retain their identity with another field of specialization but seek to add historical and philosophical depth to their work.

Master of Education with a major in History and Philosophy of Education

Admission: See page 73.

DEGREE REQUIREMENTS: Basic requirements for the Master of Education degree are stated on page 73. A minimum of thirty credits is required including a minimum of twelve credits in the major. This degree is offered under Plan A, B, or C as defined on page 73.

1. An admission moratorium is in effect for this program.

REHABILITATION COUNSELING and COMMUNITY INCLUSION

The counselor education program offers a Master of Arts degree in rehabilitation counseling and community inclusion which reflects current trends in rehabilitation, transition, supported employment, inclusion, and the support of individuals with disabilities.

The program's mission is to provide an effective model of graduate education in partnership with rehabilitation constituencies to promote quality rehabilitation services. It aims to prepare qualified, reflective, and innovative rehabilitation professionals who are able to competently work with individuals with disabilities and their families, regardless of the type or severity of disability, or of ethnic, racial or cultural identity. The program seeks to promote the empowerment, self-determination, economic self-sufficiency, independence, and inclusion in community life of individuals with disabilities.

Concentrations: The master of arts program provides two areas of concentration: *rehabilitation counseling generalist*, and *supported employment and community inclusion specialist*. Satisfactory completion of degree requirements in this program is designed to develop the competencies necessary to apply for the Limited Licensed Professional Counselor (LLPC) credential in the State of Michigan and the Certified Rehabilitation Counselor (CRC) credential after one year of employment under the supervision of a CRC.

The prospective student should recognize that this program involves both course requirements and clinical experience in community rehabilitation settings. Retention in the program and recommendation for credentialing depend upon demonstrated clinical skill as well as academic achievement. Requirements for the master of arts degree must be completed within six years after admission to the program.

This program has adopted the Publication Manual of the American Psychological Association as the style guide for preparation of all papers submitted in fulfillment of program requirements.

Master of Arts with a major in Rehabilitation Counseling and Community Inclusion

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Program admission requirements also include: (1) three letters of recommendation; (2) a personal interview with an admission committee; and (3) a professional goal statement written as a part of the personal interview process.

Acceptance in the program is based on the applicant's professional potential, academic and professional background, and professional career goals.

DEGREE REQUIREMENTS: The Master of Arts degree in this discipline requires the completion of a minimum fifty-five credits, under Plan B. Course requirements for either area of concentration include: RCI 7100, 7110, 7120, 7410, 7420, 7430, 7450, 7460, 7470; CED 6080, 6730, 7000, 7010; EDP 7490; EER 7640; and ED 7999. Students must complete a university-based practicum of at least 100 clock hours (RCI 7430) and an internship of a minimum of 600 clock hours (RCI 7460) in an approved community-based rehabilitation agency commensurate with their area of concentration. In addition, all students must complete a terminal master's project (ED 7999) in their area of concentration.

Students in the *Rehabilitation Counseling Generalist* concentration must also complete RCI 7150, 7450, 7470, and three credits in elective courses selected in consultation with an adviser.

Students in the *Supported Employment And Community Inclusion Specialist* concentration must complete RCI 7150, 7440; and three credits in elective courses selected in consultation with an adviser.

The above outlines of recommended minimum degree program requirements are consistent with national certification and State of Michigan Licensure requirements.

GRADUATE COURSES

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

COUNSELOR EDUCATION (CED)

5030 Role of the Counselor in Substance Abuse. Cr. 2

Prereq: graduate standing. An overview of counseling principles, procedures, and methods unique to substance abuse settings. Use of specific counseling strategies and treatment models with substance abusers. (F)

5090 Family Education and Counseling: Substance Abusers. Cr. 3

Prereq: CED 5030 or graduate standing. Analysis of the structure and functioning of family systems in which there is substance abuse; effective therapeutic strategies in working with chemically-abusive families. (I)

6070 Introduction to Counseling. Cr. 3

Prereq: admission to master's program in counseling. Overview of counseling profession, including: helping process, theories of counseling and consulting, training, credentialing, ethical and legal standards, professional organizations, history and trends of basic research. (T)

6080 Theories of Counseling. Cr. 3

Prereq: admission to master's program in counseling. Major theories of counseling: client-centered, rational-emotive, Gestalt, Adlerian, reality, psychoanalytic, behavioral, cognitive. Ethical, legal, multicultural factors in conceptualization and delivery of counseling services in school, rehabilitation and community agency settings. (T)

6700 The Role of the Teacher in Guidance. Cr. 2

Introduction to guidance principles, techniques and roles, with stress on classroom application. Experiential laboratory sessions required to sensitize educators to the basic ideas and skills involved in being a helper. Primarily for school personnel other than counselors. (T)

6710 Professional Seminar: Contemporary Issues. Cr. 1

Principles, procedures and methods specific to a critical contemporary issue, such as: child abuse, sexual abuse, bereavement, stress management, infectious diseases, self-esteem, self-efficacy, conflict management. (T)

6720 Workshop in Counseling. Cr. 2-4 (Max. 18)

For counselors, teachers, and pupil personnel workers. Consideration of counseling issues in school, agency and community settings. Counseling, consultation, and coordination dimensions of counseling in substance abuse, family groups, and human sexuality issues. (T)

6730 Counseling of Special Populations. Cr. 3-9

A study of the uniqueness of several special populations such as adults, women and minorities to provide an awareness of their special influences on the counseling process. (T)

7000 Introduction to Group Work. Cr. 2

Prereq: CED 6070 or 6080; coreq: 7010. Seminar in group counseling theories; basic elements of group process; stages of group development including group leadership styles, group dynamics, guidelines for multicultural and rehabilitation practice, ethical and professional issues in group practice, use of skills and techniques applicable to various counseling sessions. (T)

7010 Group Counseling Participation. Cr. 2

Prereq: admission to master's program in counseling; coreq: CED 7000. Offered for S and U grades only. Group counseling sessions to experience counseling from the client's perspective and to become familiar with procedures and methods of group counseling in community agency, school, and rehabilitation settings. (T)

7020 Counseling Internship. Cr. 1-6 (Max. 6)

Prereq: CED 7150; written consent of instructor during semester prior to registration. Offered for S and U grades only. Supervised field experience (100 clock hours per credit hour enrolled) designed to give students orientation to the responsibilities of a counselor at a cooperating agency or institution. Students attend on-campus seminars to discuss professional counseling and supervision issues. (F,W)

7030 Counseling and Consulting Services in Community Agencies. Cr. 3

Prereq: CED 6070. Not open to students in school counseling specializations. Consultation theory and processes in agencies and post-secondary educational institutions. Roles and functions of counselors in program and proposal development; conflict management; organization; administration; and evaluation of services; public relations; knowledge of community referral resources and referral process. (Y)

7040 Techniques of Counseling. (RCI 7110) Cr. 3

Prereq: CED 6070 or 6080. Techniques, ethics and process of counseling. Facilitative relationships, case conceptualization, goal setting, intervention, and outcome evaluation. Development of counseling skills to facilitate growth or change with respect to psychological, vocational and social concerns through self-advocacy, cognitive, affective, and behavioral interventions. Analysis and practice using simulated cognitive experiences. (T)

7070 School Guidance, Counseling, and Consulting. Cr. 4

Prereq: CED 6070. Principles and practices of counseling, guidance, and consulting in the K-12 school setting. Focus on individual and group approaches that facilitate student development and adjustment; staff, parental, and community resources and referral procedures; program development, operation, and evaluation. (W)

7080 Career Development and Counseling. (RCI 7100) Cr. 3

Prereq: CED 6070; or prereq. or coreq: RCI 7410. Career development theories, career exploration and career preparation methods including: information, leisure, decision making, career-related assessment, use of non-traditional resources and computer-assisted guidance systems, use of occupational information and labor market surveys in career counseling, work-adjustment training, and strategies/skills for adapting vocational and educational resources for use in rehabilitation, school, business and community agency settings. (T)

7150 Counseling Practicum. (RCI 7430) Cr. 3

Prereq: consent of instructor during semester prior to registration. Supervised experience in individual and group interactions, assessment and appraisal, diagnosis and treatment planning, other professional counseling activities; variety of counseling and rehabilitation resources used. Students attend seminars for supervision and discussion of professional issues in interdisciplinary context (minimum of 100 clock hours). (F)

8000 Seminar in Group Counseling. Cr. 3

Prereq: CED 7000 or equiv. Students counsel groups which they have established. Tape and/or process recordings of counseling sessions analyzed to develop a theory and method of group counseling, group leadership, and techniques in the counseling of individuals in groups. (B)

8030 Advanced Consultation Theory and Methods. Cr. 3

Advanced consultation theory and methods in agencies and educational institutions. Roles and functions of counselor educators and supervisors in program and proposal development; organization, administration, and evaluation of services; conflict management; third party intervention; legal and ethical issues; public relations. (B)

8040 Advanced Counseling Theory and Method. Cr. 3

Prereq: CED 6080 or equiv. Theories of personality and learning applied to case diagnosis and projected remediation. (B)

8070 Advanced Seminar in Counseling Research. Cr. 3

Prereq: admission to education specialist or doctoral program, or consent of instructor; one course in statistics or research methods. Analysis of methodology and design problems in counseling research and evaluation. Development and critique of original research proposal. (B)

8080 Advanced Career Development and Counseling. Cr. 2-4 (Max. 8)

Prereq: CED 7080 or equiv. For advanced students in guidance and counseling and related areas. Current trends and changes in career guidance and career education; their implications for guidance and counseling programs. Consideration of related topics. (B)

9020 Internship in Counseling/Counselor Education. Cr. 1-6 (Max. 24)

Prereq: admission to counselor education education specialist or doctoral program. Offered for S and U grades only. Purposes, objectives, materials, techniques and practices in counselor education programs. Supervised experience in advanced counseling and in various phases of the counselor education program. (T)

9120 Seminar and Internship Supervising Counselors. Cr. 3

Prereq: admission to counselor education education specialist or doctoral program. Theory and practice of supervision. Students supervise practicum counselors under staff guidance. (F,W)

EDUCATIONAL EVALUATION and RESEARCH (EER)

5630 Research Readings in Applied Psychology. Cr. 2

Prereq: admission to school and community psychology, or marriage and family therapy program. Introduction to research methodology in school and community psychology and marriage and family therapy. (I)

7610 Evaluation and Measurement. Cr. 2-3

Principles and practices of evaluation and measurement with special focus on behavioral goals. Informal and formal evaluational strategies. Problems of self-evaluation. Logical, philosophical, and linguistic problems of evaluational methods and devices. Metrical analyses and standards. Innovations in educational assessment and accountability. Teacher-made tests. (T)

7620 Practicum in Evaluation. Cr. 2-6 (Max.6)

Qualitative methods for action research in schools, including interviewing, field observation, life histories, visual records, and document analysis. (T)

7630 Fundamentals of Statistics. Cr. 3

Review of mathematics essential for statistics, sampling, computer use. Basic patterns of statistical inference, confidence estimation and significance testing regarding measures of averages, dispersion, correlation, and selected non-parametric statistics. One-way and two-way analysis of variance. (T)

7640 Fundamentals of Qualitative Research. Cr. 3

Basic skills in educational research; nomenclature, problem, theory, hypothesis formulation; bibliographical and documentary techniques; retrieval systems; development of data-gathering instrumentation; computer orientation and research uses; collection and organization of data; manuscript development; report writing; techniques, methodologies for descriptive and experimental inquiry. (T)

7650 Computer Use in Research. Cr. 3

Prereq: EER 7630. Introduction to computer use in educational research with emphasis on using statistical packages (MIDAS and SPSS, BASIC programming language); writing statistical programs. (T)

7660 Advanced Statistics Laboratory. Cr. 1

Coreq: EER 8820, 8840, or 8860. Analysis of variance/covariance, multivariate analysis, structural equations, nonparametric, permutation, exact and robust methods courses. Students complete class assignments and projects using advanced statistical procedures. (F,W)

7900 Fundamental of Qualitative Research. Cr. 3

Fundamentals of epistemological issues, educational perspectives of qualitative research and research design. Readings in qualitative research. Conducting the case study, personal history, and cognitive study. Overview of methods for analyzing talk, text, and interaction. (F,W)

8700 Advanced Qualitative Evaluation: Theory and Practice. Cr. 3

Prereq: EER 7900; coreq: EER 7660. Major paradigms of qualitative evaluation, strategies of inquiry, methods of collecting and analyzing materials, the art of interpretation. analysis of real data, including pattern coding, data displays, checklist matrices, transcription, explanation prediction within-case vs cross-case displays, ethical issues in evaluation. Computer use in qualitative evaluation. (F)

8720 Advanced Qualitative Evaluation: Theory and Research. Cr. 3

Prereq: EER 7610, 7630, 8640; or consent of instructor. Educational and school program evaluation: alternative approaches; students propose theory-based designs and strategies. (W)

8760 Advanced Measurement I. Cr. 3

Prereq: EER 7610 or equiv. Classical measurement theory including scaling, measurement error, reliability, validity. Review of strong statistics versus weak measurement debate. Empirical methods of psychometric applications in education and educational psychology. (Y)

8770 Advanced Measurement II. Cr. 3

Prereq: EER 8760 or equiv. Coreq: EER 7660. Modern measurement theory. Item response theory, including one and three parameter models, detecting item bias, multi-dimensional scaling. (W)

8800 Variance and Covariance Analysis. Cr. 3

Prereq: EER 7630 or equiv. Coreq: EER 7660. Multiple, partial, canonical correlation: variance and covariance analysis; Models I and II. Statistical analysis in experimental designs; Random Blocks, Latin Squares, Greco-Latin Squares, simple and complex factorials, confounding, fractional and split-plot designs. Supporting topics and techniques; missing observations; adjustment of means; probing the homogeneity of means and variances; study of contrasts; orthogonal polynomials and computer usage. (Y)

8820 Multivariate Analyses. Cr. 3

Prereq: EER 7630 or equiv. Coreq: EER 7660. Discriminant analysis, profile analysis; placement and classification problems; component and factor analysis. Supporting topics and techniques; transformation of variables, computer usage. (Y)

8840 Structural Equations. Cr. 3 (Max. 9)

Prereq: admission to doctoral program. Coreq: EER 7660. Application of structural equation methods to applied educational psychology research. Model specification, estimation, and fit. Confirmatory factor analysis and correlation. (Y)

8860 Nonparametric, Permutation, Exact, and Robust Methods. Cr. 2-6

Prereq: EER 7610, 7630, 7640 or equiv. and consent of adviser. Coreq: EER 7660. Application of nonparametric, permutation, exact and robust methods to social and behavioral science data. Techniques of estimation, location, and association for discrete and continuous data. (F,W)

8880 Monte Carlo Methods. Cr. 1

Prereq: EER 7630 and 8800. FORTRAN 77/90/95 applied to Monte Carlo Methods for the development of new statistics and procedures and the comparison of existing methodologies. Solving data analysis problems via simulation techniques. (F,W)

8960 Current Issues in Research Methodology. Cr. 3

Various topics reflecting current issues in educational evaluation and research. (Y)

8992 Research and Experimental Design. Cr. 3

Prereq: EER 7630 or equiv. Design of empirical research for students possessing basic knowledge of statistics. Topics include hypothesis construction, sampling theory, experimental and quasi-experimental designs, selection of statistical procedure, and construction of data gathering instruments. (F,W)

EDUCATIONAL HISTORY and PHILOSOPHY (EHP)

7600 Philosophy of Education. Cr. 2-3

Philosophic inquiry into educational theory and practice. For teachers, counselors, curriculum directors, administrators, and those in related professions. (T)

7670 (HED 8530) Seminar in the History and Philosophy of Higher Education. (HIS 8110) Cr. 4

Growth and development of American higher education, including events, circumstances, and influential ideas. Comparison of systems of higher education in selected other countries. Special emphasis on the relationship between social, political, and economic change and the evolution of higher education. (B)

7680 Seminar in Applied and Professional Ethics. Cr. 3 (Max. 6)

Selected contemporary issues; emphasis on value conflicts. (I)

9600 Doctoral Seminar in Philosophy of Education. Cr. 3

Prereq: formal admission to a doctoral program in education. For doctoral students majoring in other areas only. Systematic study of the field of philosophy of education. (Y)

EDUCATIONAL PSYCHOLOGY (EDP)

5450 Child Psychology. Cr. 2-3

Basic concepts, research findings and problems regarding child, pre-adolescent and early adolescent developmental needs as they apply to school and home environments; includes study of exceptional children and those with cultural differences. (T)

5480 Adolescent Psychology. Cr. 2-3

Basic concepts, research findings and problems regarding early adolescent and adolescent developmental needs as they apply to school and home environments; includes study of exceptional children and those with cultural differences. (T)

6210 Foundations of Educational Psychology. Cr. 3

Introduction to current issues in educational psychology. Topics include, but are not limited to: child and adolescent development, learning, motivation, information processing and evaluation. Includes study of the exceptional child and those with cultural differences. (F,W)

6220 Psychology of Exceptional Children. Cr. 3-4

Psychological aspects of cognitive and physical deficits in children; laboratory experience in differential diagnosis. Material fee as indicated in the Schedule of Classes. (F)

7000 Workshop in School Psychology. Cr. 2-10

(Y)

7190 Introduction to Marriage and Family Therapy. Cr. 3

Prereq: admission to school and community psychology or marriage and family therapy program. An introduction to the theory and its applications to therapy with couples and families. Emphasis on systems theory among others, assessment procedures, therapeutic skills. (F)

7200 Advanced Marriage and Family Therapy. Cr. 3

Prereq: EDP 7190, consent of instructor. Advanced development of skills and knowledge of therapy with couples and families. (W)

7220 Psychotherapy with Children and Adolescents. Cr. 3

Prereq: admission to school and community psychology, or marriage and family therapy program. Theory of psychotherapy, including stages of therapy, issues of therapy, and techniques of therapy with children and adolescents. (Y)

7240 Psychotherapy with Adults. Cr. 3

Prereq: admission to school and community psychology, or marriage and family therapy program. Theory of psychotherapy, including stages of therapy, issues of therapy, and techniques of therapy with adults. (W)

7300 Practice and Procedures of Professional Psychology. Cr. 4

Open only to students admitted to school and community psychology program. Legal, ethical, and professional issues confronting the practitioner. (F)

7350 The Learning Process. Cr. 2-3

Substantive issues involved in learning as they relate to school practice. (T)

7370 Adult Psychopathology. Cr. 3

Psychopathology of adulthood; mental disorders, treatment and diagnosis. (Y)

7390 Professional Seminar in School Psychology. Cr. 1

Open only to students in school and community psychology program. Orientation to school psychology, its history and current status. Consideration is given to legal and ethical problems and the role and responsibilities of the professional psychologist working in the public schools. (S)

7400 Social Psychology of Educational Issues. Cr. 3

Conceptual tools for school or community psychologist to function as a change agent in the social settings which influence children. Ecology and the possibilities of modifying the ecology influencing child behavior. (S)

7410 Human Developmental Psychology. Cr. 3-4

Survey of research from psychoanalytic and learning viewpoints on human development from birth to adulthood. Emphasis on school environment and community psychology practice. (F)

7420 Introduction to Behavioral Psychology. Cr. 4

Basic principles and theories of behavioral psychology. Theoretical aspects of both operant and respondent conditioning. (I)

7430 Applications I: Behavioral Psychology and Social Learning. Cr. 4

Behavioral techniques used in dealing with the social behavior of both groups and individuals. (Y)

7490 Psychological Evaluation I. Cr. 1-3

Intensive overview of psychological tests, psychometric theory of intelligence, educational achievement, and the assessment of personality. Material fee as indicated in the Schedule of Classes. (F,W)

7520 Legal Aspects of Psychological Practice. Cr. 3

Prereq: admission to school and community psychology, or marriage and family therapy program. An overview of professional ethics, Michigan law relating to the practice of psychology and marriage and family therapy, and the concept of licensure as psychologists. (W)

7530 Diagnostic Study of Learning Disability. Cr. 4

Prereq: EDP 6220, consent of instructor. Diagnosis of severe learning disability; theories of causation and methods of treatment; laboratory experience in treatment of youngsters with severe reading and other learning problems. Material fee as indicated in the Schedule of Classes. (W)

7560 Psychological Evaluation II. Cr. 4

Open only to students in school and community psychology, or marriage and family therapy program. Theory, administration, scoring use, and interpretation of objective assessments of intelligence, achievement, perceptual function, and personality. Eight full administrations of one of the assessments: Binet, Wechsler, Bayley or McCarthy Scales. Material fee as indicated in the Schedule of Classes. (W)

7610 Child and Adolescent Psychopathology. Cr. 4

Prereq: admission to school and community psychology, or marriage and family therapy program. Study of theories of psychopathology in children and adolescents and the application to these theories to practice. Differential diagnosis using currently acceptable classification systems. (W)

7620 Psychological Resources in the Community. Cr. 4

Open only to students in the school and community psychology program. Students are placed in community mental health agencies where they can observe and interact with exceptional children under supervision. (S)

7710 Psychological Evaluation III. Cr. 4

Open only to students in school and community psychology, or marriage and family therapy program. Introduction to administration, scoring, use and interpretation of projective assessments of personality and psychopathology. Eight full administrations of one of the following: Rorschach, TAT, or CAT. Material fee as indicated in the Schedule of Classes. (F)

7996 Research in Educational Psychology. Cr. 1-8 (Max. 8)

(Y)

8210 Fundamental Studies in Educational Psychology I - Learning. Cr. 3

Prereq: Admission to doctoral program in educational psychology. Basic theoretical issues and relevant evidence in respect to learning, perception, cognition, motivation, and ability structure. Trends in thinking and research most likely to influence educational policy and teacher education practices. (F)

8230 Fundamental Studies in Educational Psychology II - Growth and Development. Cr. 3

Prereq: Admission to doctoral program in educational psychology. Contemporary issues in child growth and development related to classroom practice. (F)

8250 Fundamental Studies in Educational Psychology IV. Cr. 3-9 (Max. 9)

Prereq: admission to doctoral program in educational psychology. Advanced study of a specific area in psychology with application to educational practice. Topics to be announced in Schedule of Classes. (W)

8320 Internship in Clinical Procedures I. Cr. 1-10 (Max. 10)

Offered for S and U grades only. Open only to students in school and community psychology, or marriage and family therapy program. Internship in one of the organized health care settings cooperating with the University. Diagnostic testing and psychotherapy with supervision of not less than two hours per week by a licensed psychologist employed by the cooperating site. Conferences and seminars; internship experience will equal or exceed 500 hours. (T)

8330 Internship in School and Community Psychology.
Cr. 1-8 (Max. 8)

Prereq: admission to school and community psychology program. Offered for S and U grades only. Internship as a school psychologist in an approved school with school-age pupils. Interns under supervision of person holding Michigan School Psychologist Certificate. (T)

8340 Internship in Clinical Procedures II. Cr. 1-8

Prereq: admission to Ph.D. program in educational psychology and consent of program coordinator. Offered for S and U grades only. Placement as a psychologist in appropriate organized health care setting under the supervision of a licensed psychologist. (T)

8350 Internship Supervision. Cr. 1-5

Prereq: EDP 8320 or 8330 or 8340; and consent of instructor. Case presentation of selected psychology clients for group/individual supervision. (T)

9310 Doctoral Seminar in Educational Psychology. Cr. 3

Prereq: formal admission to a doctoral program in education. For doctoral majors in other areas of concentration only. An examination of psychological concepts relevant to the development and carrying forward of the work of the schools. (T)

EDUCATIONAL SOCIOLOGY (EDS)

6620 Sociology of Urban Schools. Cr. 2-3

Sociological analysis of the societal and institutional problems and processes bearing on the education of children from the various sub-cultural backgrounds found in modern urban areas. Emphasis on contemporary educational problems in the urban setting. (Y)

7620 The Study of Black History and Culture. Cr. 3

Afro-American culture with emphasis on sociological implications in contemporary American society. (I)

7630 Educational Sociology. Cr. 2-3

Application of key sociological concepts and knowledge to educational processes in school and society. Basis for advanced specialist work in educational sociology. (T)

7640 Topical Seminar in Educational Sociology.
Cr. 1-8 (Max. 8)

Topics with a unique sociological perspective in education. (I)

7650 Intergroup Relations in Community and School. Cr. 2-3

Dynamics of intergroup and intercultural relations; intergroup relations and ideologies in the context of power struggles; civil rights revolution in relation to school and community; theories of change in intergroup relations. (Y)

9620 Doctoral Seminar in Educational Sociology. Cr. 3

Prereq: formal admission to a doctoral program in education. For doctoral majors in other areas of concentration only. Basic concepts of sociology applied to contemporary education. (T)

REHABILITATION COUNSELING and COMMUNITY INCLUSION (RCI)

7100 (CED 7080) Career Development and Counseling. Cr. 3

Prereq. or coreq: RCI 7410. Career development theories, career exploration and career preparation methods including: information, leisure, decision making, career-related assessment, use of non-traditional resources and computer-assisted guidance systems, use of occupational information and labor market surveys in career counseling, work-adjustment training, and strategies/skills for adapting vocational and educational resources for use in rehabilitation, school, business, and community agency settings. (Y)

7110 (CED 7040) Techniques of Counseling. Cr. 3

Prereq: RCI 7410, CED 6080. Techniques, ethics and process of counseling of counseling including: facilitative relationships, case conceptualization, goal setting, intervention, and outcome evaluation.

Development of counseling skills to facilitate growth or change with respect to psychological, vocational, and social concerns through self-advocacy, cognitive, affective, and behavioral interventions. Analysis and practice using simulated counseling experiences. (Y)

7120 Life Assessment and Planning. Cr. 3

Use of assessment and decision-making techniques to assist persons with disabilities and their families across the lifespan to plan for community participation in work, home, community, leisure activities, and personal relationships. Application across rehabilitation sectors. (Y)

7150 Rehabilitation Counseling Professional Roles. Cr. 3

Roles of rehabilitation professional as counselor, consultant, case manager and advocate. Case analysis, service applications and recording and reporting from perspectives of various professional rehabilitation counseling roles. (W)

7160 Group Strategies for Persons with Disabilities. Cr. 3

Group theory, dynamics, techniques and participation for use with persons with disabilities and their families in community settings. Group counseling, self-help groups, psychosocial rehabilitation. (Y)

7410 Persons with Disabilities in the Community. Cr. 3

Values, philosophy, history and legislation of rehabilitation. Community inclusion and support; service strategies, technology, agencies and systems that facilitate inclusion of persons with disabilities in their communities from birth through death; overview of types and characteristics of persons with disabilities. (F)

7420 Medical, Psychosocial and Vocational Aspects of Disability. Cr. 3

Prereq: RCI 7410. Types of disabilities, treatment strategies, impact of disability on physical, cognitive, psychological, social, and vocational functioning of persons with disabilities. Holistic approach incorporating medical, psychological, ecological, and sociocultural issues. (W)

7430 (CED 7150) Counseling Practicum. (RCI 7430) Cr. 3

Prereq: consent of adviser and instructor during semester prior to registration. Supervised experience in individual and group interactions, assessment and appraisal, diagnosis and treatment planning, other professional counseling activities; use of variety of counseling and rehabilitation resources. Students attend seminars for supervision and discussion of professional issues in interdisciplinary context (minimum of 100 clock hours). (T)

7440 Policy and Research for Community Inclusion of Persons with Disabilities. Cr. 3

Application of research methods to improve policies and services that enhance community inclusion and quality of life of persons with disabilities. (I)

7450 Employment for Persons with Disabilities. Cr. 3

Prereq: RCI 7100. Design and implementation of effective methods to help persons with disabilities obtain and maintain employment. Marketing and job placement skills, job-seeking skills training, job clubs, job adaptation, supported and transitional employment, employer assistance and training, and follow-along services. (W)

7460 Internship in Rehabilitation and Community Inclusion.
Cr. 3-6 (Max. 6)

Prereq: grade of B or above in RCI 7430, consent of adviser and instructor. Offered for S and U grades only. Supervised field experience providing counseling or rehabilitation services at a cooperating agency or institution under supervision of approved professional. Students complete a minimum of 600 clock hours. (Y)

7470 Family and Community Support for Inclusion. Cr. 3

Services that facilitate full participation of persons with disabilities in the life of their families and communities. Persons with disabilities in context of: families, family dynamics, cultural diversity, family structure, family support. Community support, supported independence, independent living centers, therapeutic recreation and related programs. (Y)

7490 Supported and Transitional Employment. Cr. 3

Intensive skill-based study of supported and transitional employment models. Ongoing employment support, management of program, conversion of rehabilitation facilities, interagency program development. (Y)

7510 Trends and Issues in Community Inclusion and Support of People with Disabilities. Cr. 3

Emerging and contemporary issues related to community inclusion and support of persons with disabilities and their families. (Y)

EDUCATION (ED)

5998 Field Studies. Cr. 1-8 (Max. 8)

Prereq: consent of adviser or instructor. Supervised professional study in field settings. (T)

7990 Directed Study. Cr. 1-8 (Max. 8)

Prereq: written consent of adviser and graduate officer on completed petition and authorization for Directed Study prior to registration. (T)

7996 Directed Research. Cr. 1-8 (Max. 16)

Prereq: written consent of adviser and Dean of Graduate Studies or Graduate Officer on Petition and Authorization for Directed Study prior to registration. Offered for S and U grades only. (T)

7998 Field Studies. Cr. 1-8 (Max. 16)

Prereq: consent of adviser or supervising instructor. Offered for S and U grades only. Supervised professional study in field situations. (T)

7999 Terminal Master's Seminar and Essay or Project. Cr. 3

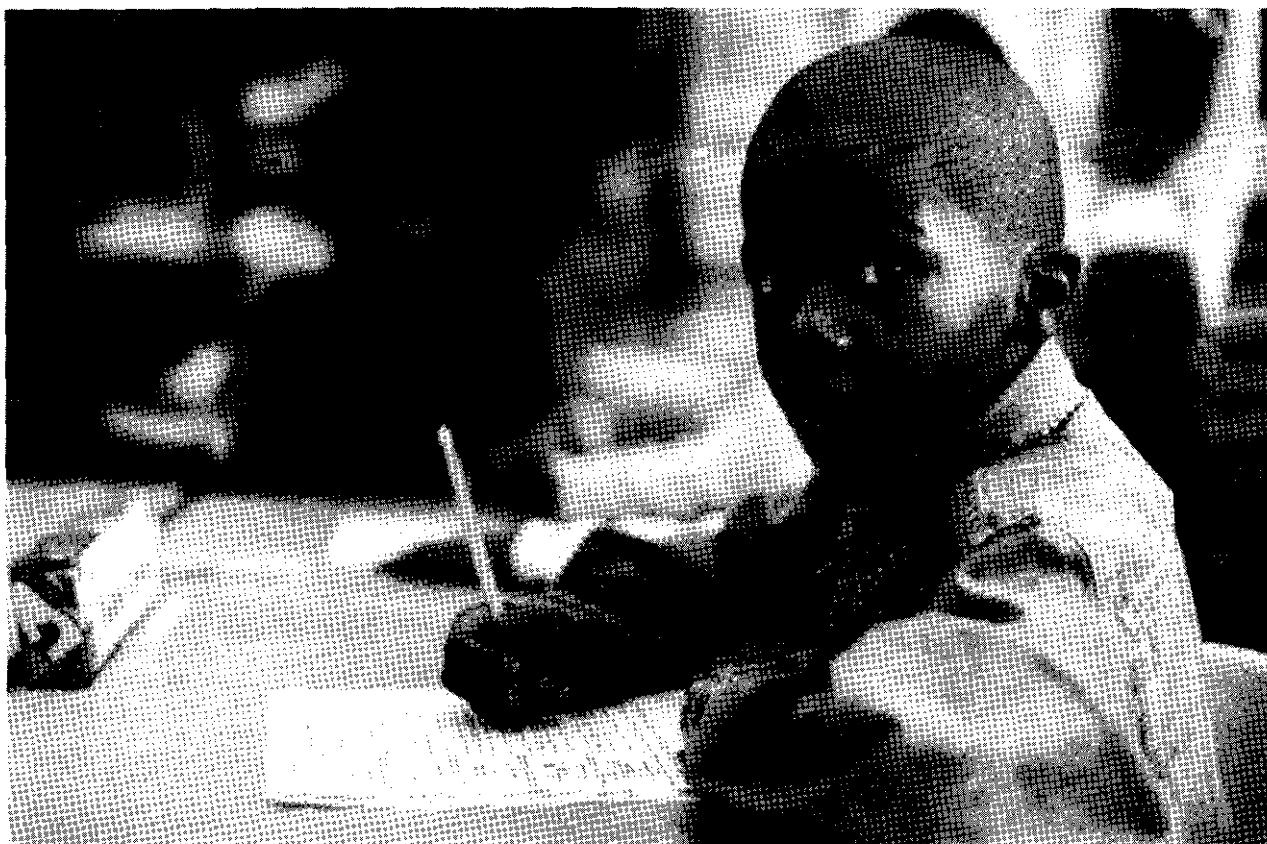
Offered for S and U grades only. (T)

8999 Master's Thesis Research and Seminar. Cr. 1-8 (8 req.)

Offered for S and U grades only. (T)

**9999 Doctoral Dissertation Research and Direction.
Cr. 1-16 (Ed.D., 20 req.; Ph.D., 30 req.)**

Offered for S and U grades only. (T)



College of Engineering

DEAN: Chin Y. Kuo

FOREWORD

Graduate education is important to the engineer interested in keeping pace with rapid growth in science and technology and in preparing for changes in job responsibilities. In the midst of greater Detroit's large community of professional engineers, Wayne State University's College of Engineering has an important mission to provide opportunities for study in contemporary areas and the latest developments in technology.

The College of Engineering is a leading research institution in Michigan and the nation. This is reflected in its instructional programs which are supported both by its own research and by that of other institutions, and in the suitability of its industrial/educational environment for advanced study. Engineering graduate students are drawn both from the upper ranks of graduating seniors in various disciplines, and from established engineers pursuing advanced degrees. Criteria for admission are restrictive, and a high standard of performance is expected of successful candidates. In short, the challenges are great, but the potential rewards are equally promising.

Graduate Degree Programs

The College of Engineering offers the Master's and Doctor of Philosophy degrees in biomedical, chemical, civil, computer, electrical, industrial, mechanical, and materials science and engineering; and a Master's Degree in electronics and computer control systems, engineering management, engineering technology, hazardous waste management, manufacturing engineering, and operations research. These programs are generally described below, and specifically in the subsequent departmental sections.

The College provides support for the various instructional and research laboratories in the construction, modification, repair, calibration and installation of experimental equipment. In addition, the College offers sophisticated assistance in the design of electronic and instrumentation equipment and devices. Qualified students use these facilities under the supervision of trained professionals.

Excellent research programs are available in this college; graduate students can write a thesis or dissertation based on their participation in these programs to fulfill part of their degree requirements.

Many graduate students pursue their studies in the College while working full- or part-time in local industry, where they have available to them unique facilities not found within the University. Students in such situations are encouraged to pursue their graduate research at their places of employment, under the joint supervision of the faculty adviser and a company representative. Such research may be applicable as credit earned for directed study courses, master's theses, or doctoral dissertations. However, after completion of a Bachelor of Science degree and one or more years of on-the-job experience, additional training at the graduate level is often desirable, without participation in a research program, and the College provides an optional master's degree program without a thesis research requirement.

Graduate Certificate Programs: The Department of Chemical Engineering and Materials Science offers four certificate programs. For information and requirements, see page 124.

Graduate Degrees and Certificates

MASTER OF SCIENCE in

Biomedical Engineering
Chemical Engineering
Civil Engineering
Computer Engineering
Electrical Engineering
Electronics and Computer Control Systems
Engineering Management
Engineering Technology
Hazardous Waste Management

Industrial Engineering
Manufacturing Engineering
Materials Science and Engineering
Mechanical Engineering
Operations Research

DOCTOR OF PHILOSOPHY in

Biomedical Engineering
Chemical Engineering
Civil Engineering
Computer Engineering
Electrical Engineering
Industrial and Manufacturing Engineering
Materials Science and Engineering
Mechanical Engineering

GRADUATE CERTIFICATE PROGRAMS in

Environmental Auditing
Hazardous Waste Control
Hazardous Materials Management on Public Lands¹
Polymer Engineering

Research Centers, Programs, and Laboratories

Opportunities exist at both the graduate and advanced undergraduate levels for students to participate in the programs of the research centers.

The Bioengineering Center is an interdisciplinary group engaged in biomedical research, utilizing the principles of mechanical, chemical, electrical, and computer engineering. Faculty from the College of Engineering collaborate with colleagues from the Wayne State Medical School in joint efforts to solve both basic and clinical problems. The principal area of research in the Center is automotive safety, but many other lines of investigation are also pursued. Major areas of research include trauma biomechanics, mechanical bases for low back pain, human locomotion studies, and orthopedic biomechanics. Other activities include the development of advanced anthropometric test dummies and impact studies using horizontal accelerator test sleds.

The Center for Automotive Research coordinates a variety of programs in different automotive areas, such as combustion engines, dynamics, acoustics, vibrations, and electronic controls. The engine research deals with the basic processes of thermodynamics, heat transfer, mass transfer and chemical kinetics which affect the performance, fuel economy, startability and emissions of different types of engines. The fully-instrumented cold room is used for some of these studies. Research is also conducted on diesel engine combustion and alternate fuels. The research consists of extensive theoretical analysis, supported by experimental investigations. The Center combines expertise from the Departments of Mechanical, Chemical, and Electrical and Computer Engineering.

College Facilities

With the dedication of the new Manufacturing Engineering Building in 1997, College facilities now include four separate buildings with over 250,000 square feet of classroom, office and laboratory space. Among these facilities are multimedia classrooms, a comprehensive computer center, electronics and machine shops, dedicated teaching laboratories, and sophisticated research laboratories. The four multimedia classrooms support innovative course delivery techniques, including interactive distance learning with classrooms at a variety of sites within WSU, at other colleges and universities, and at industrial locations. The computer facilities include dedicated computer graphics, design, and personal computing hardware and software.

Stimulating productive research and teaching methods are the goals of the Engineering Computer Center. These goals are met by providing and supporting the latest technologies in computer hardware,

1. Currently restricted to employees of the U.S. Federal Bureau of Land Management.

software, and networking. All curricula are designed to take advantage of these advancements and students feel the impact of these tools in their coursework. The latest in simulation, analysis, and design software are provided for students to use and master. Connectivity of all computers by way of an ethernet network adds more possibilities for students to incorporate resources globally.

The College of Engineering occupies a three-story office building attached to its recently renovated laboratory facility. This modernization has created a stimulating and productive research and teaching facility for the College, including a new Engineering Computer Center with computer graphics and design equipment as well as numerous terminals and PCs, all interconnected through an ethernet-based college-wide system. Since all curricula incorporate the use of computers, students are provided easy access to needed hardware and software. Besides general undergraduate laboratories, the College also possesses numerous laboratories associated with departmental engineering specializations, such as biomedical engineering, biochemical engineering, chemical measurements, chemical processing, hydraulics, kinetics and catalysis, polymer science, materials characterization and materials processing, fatigue and fracture research, electron microscopy, optical metallography, roadway and building materials, soil mechanics, sanitary engineering, structural modeling, supercritical transport, communications, computers, networks, opto-electronics, semiconductor fabrication (including a class-1000 clean room), electronics packaging, computer vision, automotive research, human factors, computer-aided manufacturing, robotics, machine tools, internal combustion, and stress analysis. These laboratories are used for instructional and research purposes along with such research facilities as a molecular beam laboratory, a biomechanics accelerator and impact laboratory, an acoustics and noise control laboratory, and a structural behavior laboratory.

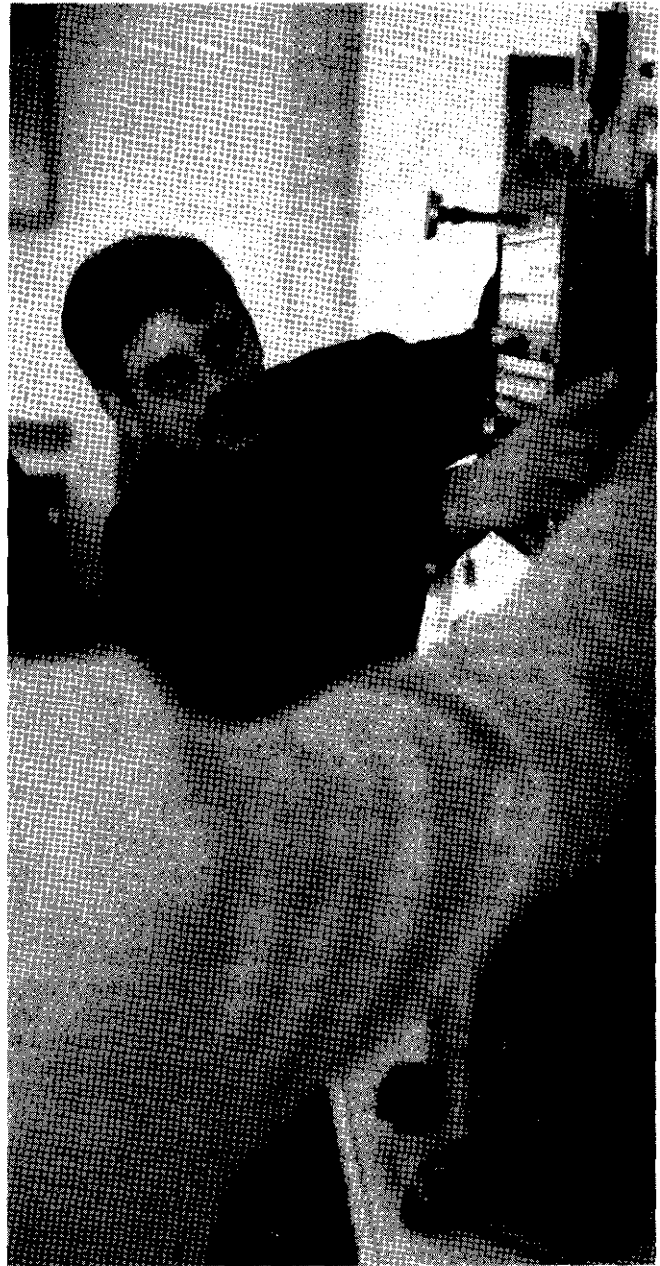
The Division of Engineering Technology is housed in a separate building of approximately 24,000 square feet, located at 4855 Fourth Street.

Research Facilities

The College commands a wide range of undergraduate, graduate, and faculty research laboratories and excellent support facilities, housed in a four-building complex. The Bioengineering Center operates in close collaboration with Wayne's Medical School, employing unique equipment, in particular its own massive horizontal accelerator, to conduct impact studies emphasizing biomechanics. The Division of Engineering Technology's recently remodelled building houses labs and classrooms, including its own teaching machine shop. The College's new Manufacturing Engineering Building (MEB) is home to the Department of Industrial and Manufacturing Engineering. The most striking feature of MEB is its multi-story High Bay Lab, Wayne's largest research space, capable of accommodating full-scale production machinery. The MEB includes eighteen other labs currently in use by faculty from several departments. The main Engineering Building, one of the largest structures on campus, houses specialized labs of many types. The Center for Automotive Research conducts interdisciplinary investigations of diesel and gasoline engines in a series of specialized test cells, including the engineering cold room, a fully-instrumental lab capable of reaching minus-40 C. The College's anechoic chamber is a walk-in scale facility dedicated to advanced research on vibrations and noise, particularly in automobiles. Other labs house research on diesel and gasoline combustion, structures and earthquake systems (utilizing the two-story structures lab, capable of testing multi-ton building components), soil mechanics, pollution and remediation models, polymers and composite materials, environmental kinetics, electron microscopy, catalysis, surface science, biomedical sciences, high-performance computing, neural networks, communication and information systems, materials/fluids/metallurgy testing, solid-state electronics, robotics and computer-aided manufacturing, microprocessors, optical computing, and molecular beams and laser light scattering. Of particular note is the College's class-100,000 clean room, a center for semiconductor research; more clean rooms are being added to expand the College's strengths in this important area. The College's research equipment is maintained, modified, and in many cases constructed by its in-house electronics shop and machine shop.

Accreditation

All the undergraduate curricula of the Division of Engineering leading to a Bachelor of Science degree, except the new program in Manufacturing Engineering, are accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET). Electrical/Electronic Engineering Technology and Mechanical Engineering Technology programs are accredited by the Technology Accreditation Commission of ABET. Curriculum accreditation is based upon careful periodic appraisal of the faculty, educational program, and facilities of the College. This approval provides assurance of an up-to-date, high quality education pertinent to the engineering profession. Such accreditation is recognized by other universities, prospective employers, and state professional licensing agencies.



ACADEMIC REGULATIONS

For complete information regarding academic rules and regulations of the Graduate School, see the section of this bulletin beginning on page 16. The following additions and amendments pertain to the College of Engineering.

Matriculation

After receiving credentials from the Office of Admissions, and before registration, students should contact the graduate adviser in his/her major department (see the following list) for details of program planning and to discuss requirements and course work.

GRADUATE ADVISERS

Chemical Engineering:

Dr. Yinlun Huang; 577-3771
(e-mail) yhuang@chem1.eng.wayne.edu

Civil and Environmental Engineering:

Dr. Takaaki Kagawa; 577-3853
(e-mail) tkagawa@ce.eng.wayne.edu

Electrical and Computer Engineering:

Dr. Pepe Siy; 577-3841
(e-mail) psiy@ece.eng.wayne.edu

Electronics and Computer Control Systems

Dr. Franklin Westervelt, Chairperson; 577-3920
(e-mail) fwesterv@ece.eng.wayne.edu

Engineering Management:

Dr. Donald Falkenburg; 577-3821
(e-mail) falken@mie.eng.wayne.edu

Engineering Technology

Dr. Mulchand Rathod; 577-0800
(e-mail) rathod@et1.eng.wayne.edu

Hazardous Waste Management

Dr. Ralph Kummier; 577-3861
(e-mail) rkummier@chem1.eng.wayne.edu

Industrial and Manufacturing Engineering:

Dr. Donald Falkenburg; 577-3821
(e-mail) falken@mie.eng.wayne.edu

Materials Science and Engineering:

Dr. Charles Manke; 577-3849
(e-mail) cmanke@chem1.eng.wayne.edu

Mechanical Engineering:

Dr. Trilochan Singh; 577-3845
(e-mail) tsing@me1.eng.wayne.edu
Dr. Victor Berdichevsky; 577-3905
(e-mail) vberd@me1.eng.wayne.edu

Polymer Engineering

Dr. Guang-Zhao Mao; 577-3804
(e-mail) gzmao@chem1.eng.wayne.edu

Scholarships, Assistantships and Fellowships

A variety of financial resources are available to support full-time study, including graduate research and teaching assistantships and various fellowships. For general sources of graduate financial aid, see the section on Graduate Financial Assistance, beginning on page 30. Requests for such support should be included with the Graduate School application.

Charles DeVlieg Foundation Award: Through annual support from the DeVlieg Foundation, graduate scholarship funds are available to supplement other sources of student support in situations where students have extraordinary financial requirements. Amounts range from \$2000 to \$4500 per year, and awards are made based on academic merit and financial need.

Frederick G. Weed Graduate Scholarship in Chemical Engineering: This award is made to a full-time graduate student selected by the

Department Chairperson, based on scholastic achievement, leadership qualities, and financial need.

Scholarship

A graduate degree is evidence of scholarly achievement, academic excellence, critical and creative abilities, the capacity to apply and interpret what has been learned, and of proper use of the work of others. Continuance in graduate status is contingent on satisfactory scholarship with grades of 'B' or better. Every effort is made to assist the student whose work suffers as a result of conditions beyond his/her control.

Graduate students are required to earn an h.p.a. of 3.0 ('B' average) or better in all graduate-level subjects taken at W.S.U. to satisfy degree requirements. Students whose cumulative h.p.a. falls below 3.0 are placed on probation, and the performance of these students is closely monitored by the departmental graduate committee. Students who fail to remediate this probationary status within eight credits after being placed on probation are subject to termination from the graduate program.

Any grade lower than 'B' minus in a core course **MUST** be repeated. No more than two courses may be repeated in a graduate program (the mechanical engineering program permits the repetition of only one course), and a student must have the appropriate approvals **BEFORE** the repeat registration takes place. 'F' grades earned while in the College of Engineering may be the basis for termination.

All course work must be completed in accordance with the academic procedures of the Graduate School governing graduate scholarship and degrees; see pages 16 - 30. University rules require an overall h.p.a. of 3.0 or higher for graduation, in all graduate work completed at Wayne State,

Plan of Work

Early in his/her program, the master's applicant, with the assistance of an adviser, plans a sequence of studies. This *Plan of Work*, approved by the adviser, should be filed with the Engineering Graduate Office before the student has completed thirteen graduate credits (including transfer credits). Failure on the student's part to file this *Plan of Work* will result in a 'candidacy' hold being placed on the student's record, preventing the student from registering for classes.

Directed Study

Independent study may be authorized provided the area of interest is an integral part of the student's graduate program and is not covered by courses scheduled in completion of course requirements. Students who elect a directed study are required to submit a *Directed Study Authorization Form*, which includes a description of the proposed directed study, with the necessary signatures, prior to registration.

MASTER OF SCIENCE PROGRAMS

The Master of Science is offered in biomedical, chemical, civil, computer, electrical, electronics and computer control systems, engineering management, engineering technology, hazardous waste management, industrial, manufacturing engineering, mechanical, and materials science and engineering, operations research, and (as an interdisciplinary curriculum) electronics and computer control systems.

Admission to these programs is contingent upon admission to the Graduate School; for requirements, see page 16. Applicants to the engineering master's degree programs must also satisfy the following criteria.

In addition to the minimum requirement for admission of an overall honor point average of 2.8 from an institution accredited by the Accreditation Board for Engineering and Technology (ABET), a minimum honor point average of 2.8 in all junior and senior year (upper division) courses is required. Applicants from abroad will be judged on the basis of their record and on the reputation of the school from which they graduated. Individual departments and interdisciplinary programs may require a higher minimum upper division h.p.a. Regu-

lar admission may also be granted to applicants with undergraduate degrees from regionally (non-ABET) accredited institutions in engineering, physics, chemistry, mathematics and computer science who meet the equivalent of the above minimum standards. Additional course work will generally be required of such applicants.

Degree Requirements

The minimum requirement for the master's degree is thirty-two credits under the following degree plans approved by the College:

Plan A: A minimum of twenty-four credits in course work, a minimum of eight credits of thesis and a seminar or an oral presentation on the thesis research.

Plan B: Thirty-two credits, including a four to six credit project (Engineering Technology ONLY.)

Plan C: A minimum of thirty-two to forty credits in course work. A thesis is not required.

College of Engineering Graduate Requirements — M.S. Programs

Program	Minimum h.p.a. required for M.S. admission	Min. credits needed for M.S.	Minimum thesis/proj. credits
Biomedical Engineering	3.0	32	8
Chemical Engineering	2.8	32	10
Hazardous Waste Management ¹	3.0	34-38	8-10
Materials Science & Engg.	3.0	32	10
Civil Engineering	3.0	32	8
Computer Engineering	3.0	32	8
Electrical Engineering	3.0	32	8
Electronics & Cptr. Control Syst.	2.8	32	8
Engineering Management	3.0	42	Plan B only
Engineering Technology	3.0	32	4
Industrial Engineering	2.8	32-40	8
Manufacturing Engineering	2.8	32-40	8
Operations Research	2.8	32-40	8
Mechanical Engineering	3.0	32	8

College of Engineering Graduate Requirements — Certificate Programs

Environmental Auditing	3.0	15	—
Hazardous Waste Control	3.0	13	—
Hazard. Matl. Mgt.- Public Lands	3.0	12	—
Polymer Engineering	3.0	12	—

— Major Credits

Credits earned in the student's major field are designated as major credits. Of the minimum of thirty-two credits required for the master's degree, at least one-half of the course work, exclusive of thesis credit, must be in the major field. At least six credits in the major must be in 7000- or 8000-level courses.

— Thesis Degree Plan

Students who elect the thesis degree plan (Plan A) are required to file a *Thesis Outline Approval Form* for approval by the adviser and the Engineering Graduate Officer before writing the thesis. Information about the thesis style, format and number of copies required can

be found in the Graduate School section of this bulletin, page 30. Final recommendation of approval for the thesis requires an oral defense of the thesis material in the presence of a departmental faculty committee of three persons including the adviser and one faculty member from outside the department.

Transfer Credits

Every Wayne State student pursuing the M.S. degree must complete at least twenty-four credits in residence. As a privilege, a student may file a Petition for Transfer of Graduate Credit, provided that the credits were earned in residence at another accredited graduate school, are certified as graduate credit with grades of 'B' or better on an official transcript, and are certified by the adviser to be acceptable in the student's degree program as major work. Courses transferred may NOT have been used as applicable credit toward any other degree. In order to transfer grades from another institution, that institution has to be listed on the student's W.S.U. Admissions Application, or specifically mentioned in correspondence to the College prior to matriculation. Special documentation is necessary to transfer credits earned outside North America. A student whose Petition to transfer credits is denied may still receive credit by examination (see page 24).

All transcripts supporting the transfer of credits must be for credits earned prior to the student's first semester at W.S.U. While enrolled in a degree program in the College of Engineering, graduate-level courses taken at another institution may not be applicable to the College of Engineering degree without approval prior to registration for any such courses. A Transfer of Credit request should not be submitted before the completion of eight credits in residence at Wayne State. All credits transferred must conform to the six-year time limitation for completion of requirements (see page 27).

Since twenty-four credits of any M. S. program must be earned at W.S.U., the number of transfer credits from a related, uncompleted graduate program at another institution are limited to eight credits for a thirty-two credit M.S. program and twelve credits for a thirty-six credit M.S. program.

Cross-Registration Opportunities

Students are encouraged to consider incorporating in their course of study up to two courses elected in any of three exchange arrangements: the Michigan Intercollegiate Graduate Studies Program (MIGS) (see page 17), the Wayne State — University of Windsor Exchange (see page 17), and Dual Enrollment at the University of Michigan (see page 23). The latter enrollment may be utilized at both the Ann Arbor and Dearborn campuses. Consult the graduate adviser and the Dean's Office for information and application forms applicable to these programs.

Master of Science in Electronics and Computer Control Systems

The ECCS Master of Science degree is an interdisciplinary program which draws on the course offerings of the Departments of Electrical and Computer Engineering, Mechanical Engineering, and Computer Science. This program was established in 1983, in collaboration with the Ford Motor Company, to meet the needs of students interested in a course of study focussing on hardware, interface, microprogramming, and software needs for digital microprocessor and dynamic sensor signal-based control of analog and electromechanical systems. This program is available on-site to Ford Motor Company employees at the Danou Technical Center in Allen Park, Michigan. Non-Ford affiliated students may apply for admission to this program through the normal application process and take appropriate courses on campus. For further information, please contact the Associate Dean of Engineering for Graduate Programs, 1164 Engineering Building; telephone: 577-3861.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Ford Motor Company employees should submit admission credentials through the Ford Motor Company University Programs Office, at the Fairlane Training and Development Center; telephone: 313-323-1182. Appli-

1. Completion of Certificate Program in Hazardous Waste Control is mandatory before admission to the hazardous waste management M.S. program.

cants should have a Bachelor of Science degree in an engineering discipline; those with certain prerequisite deficiencies will be required to take supplemental background course work.

DEGREE REQUIREMENTS: This program is offered under the following options:

Plan A: *Thirty-two credits including an eight-credit thesis.*

Plan B: *Thirty-two credits including a four-credit project.*

Plan C: *Thirty-two credits of course work.*

All options require a three-course interdisciplinary core consisting of CSC 6110 or ECE 6600, M E 6550, and ECE 5620. The additional twenty credits are elective chosen by the student through an approved *Plan of Work*. These courses must include at least two 7000-level (advanced graduate) courses. Knowledge of a high level programming language and computer architecture is required, for which the student may have to take CSC 5050 as part of their elective credit. It is recommended that at least one elective be chosen from each participating department (ME, ECE, and CSC).

All course work must be completed in accordance with the regulations of the Graduate School and the College of Engineering governing graduate scholarship and degrees.

Doctor of Philosophy

The Doctor of Philosophy (Ph.D.) degree is offered by the College of Engineering in the major areas of: biomedical engineering, chemical engineering, civil engineering, computer engineering, electrical engineering, industrial engineering, materials science and engineering, and mechanical engineering.

Admission to the doctoral programs of the College is contingent upon admission to the Graduate School; for requirements, see page 16. For admission into a Ph.D. engineering program, the student's overall honor point average must be 3.2 or better, and 3.5 in the last two years as an undergraduate student. Students who do not satisfy these minimum standards will not be considered for admission to the program until they have completed a master's degree and have earned an honor point average in courses taken for graduate credit which is not less than 3.5. Individual departments may have higher admission requirements.

Generally, students applying for admission to the Ph.D. program should have first achieved an M.S. degree. Students completing their M.S. degree programs who wish to enter the Ph.D. program must have a minimum honor point average of 3.5 at the graduate level.

DEGREE REQUIREMENTS: A minimum of ninety credits beyond the bachelor's degree is required for the Ph.D. program, including thirty credits for the dissertation. For specific course requirements, students should consult the following departmental sections of this bulletin.

There are no general foreign language requirements for the Ph.D. degree. Specific requirements can be made by the Ph.D. advisory committee and are designed to suit individual Ph.D. applicants.

If the student fails to meet the Ph.D. requirements, he/she may transfer appropriate credits toward the Master of Science degree program in the discipline in which credits were accrued.

Specific details pertaining to Ph.D. course work and other requirements are given in the *Handbook for Doctoral Students and Advisers*. This document, available from the Graduate School, should be carefully reviewed by all doctoral students.

Biomedical Engineering Programs

Office: 818 W. Hancock; (313) 577-1344

Director: Albert I. King

Associate Director: Michele J. Grimm

Professors

Albert I. King, Michael Kleerekoper

Associate Professors

John M. Cavanaugh, Bertram Ezenwa, Samuel Nasser, Dorothy A. Nelson, Paul H. Wooley, King-Hay Yang

Assistant Professors

Theresa Atkinson, R. Darin Ellis, Michele J. Grimm, Steven H. Hinderer, Guang Zhao Mao, Howard Matthew

Adjunct Professor

David Viano

Adjunct Associate Professors

Tawfik Khalil, John W. Melvin

Adjunct Instructor

Warren Hardy

Graduate Degrees

MASTER OF SCIENCE in Biomedical Engineering

DOCTOR OF PHILOSOPHY with a major in Biomedical Engineering

Master of Science in Biomedical Engineering

Program specialization at the master's degree level may be undertaken in four areas, including transportation-related trauma, age-related injuries, engineering neurophysiology, and biomaterials. These specializations are available to both part-time and full-time students, in either research or non-research degree programs

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. In addition, applicants must have a baccalaureate degree or its equivalent, earned at an accredited college or university, as well as the preliminary preparation and ability to pursue graduate study in this discipline. Students who have a baccalaureate degree in a non-engineering discipline (e.g., life science) will be considered for admission to the program on a case-by-case basis. Regular admission may be authorized if the applicant's undergraduate honor point average is 3.0 or above. All applicants are expected to submit a one-page statement of purpose along with their application, describing their interest in biomedical engineering. It is recommended that applicants also submit Graduate Record Examination (GRE) scores, particularly if they are requesting financial assistance. An *Application for Admission*, with application fee and official transcripts from each college attended, are required before any student may register for graduate study. The applicant must take any entrance examinations specified by the Office of Admissions, the College, or the Program.

DEGREE REQUIREMENTS; This Master of Science degree in Biomedical Engineering is offered under the following options:

Plan A: *A minimum of thirty-two credits in course work including an eight credit thesis.*

Plan C: *A minimum of thirty-two credits in course work.*

DEGREE REQUIREMENTS: For either plan, students must complete the following Core Requirements: BME 5010 or PSL 5550; BME 5020; BME 5030; and BME 8070.

Additional courses will be chosen from the curriculum outlined for each specialization. A list of curricula can be found in the *Handbook for Graduate Students in Biomedical Engineering*, available from the Biomedical Engineering Office. Students must take a minimum of two 7000-level courses if they are enrolled in Plan A, and a minimum of three 7000-level courses if they are enrolled in Plan C. Directed study and directed research courses (BME 7990 and BME 7996) cannot be counted toward the satisfaction of the 7000-level course requirement. A maximum of four credits in directed study or directed research (BME 5990, 7990, and 7996) may be applied towards the degree. Thesis credits are earned through satisfactory completion of BME 8999.

Students enrolled in the master's degree program are required to file a *Plan of Work* with the Graduate Officer of the College by the time eight graduate credits have been earned. Following this, the applicant will petition his/her adviser to advance his/her rank to 'candidate.' Candidate status must be authorized by the time twelve graduate credits have been earned, or else subsequent registration will be denied. All course work must be completed in accordance with the regulations of the Graduate School and the College of Engineering governing graduate scholarship and degrees; see pages 16-30 and 118-120, respectively.

Doctor of Philosophy with a Major in Biomedical Engineering

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. It is recommended that applicants submit Graduate Record Examination (GRE) scores, particularly if they are requesting financial assistance. In addition, applicants must have a graduate honor point average of 3.5 or above and must have completed an undergraduate major or substantial specialized work in his/her proposed doctoral major field. Students with an undergraduate honor point average of 3.5 or above may apply for direct admission to the Ph.D. program; students with less than a 3.5 undergraduate h.p.a. must complete a master's degree program in biomedical engineering prior to consideration for admission to a Ph.D. program. All applicants are expected to submit a one-page statement of purpose, describing their interest in biomedical engineering.

DEGREE REQUIREMENTS: Completion of a minimum of ninety credits beyond the baccalaureate degree are required for the Ph.D. program. These credits are distributed as follows:

1. *Core Courses (twenty credits):* BME 5010; PSL 5550; BIO 5040; BME 5020; BME 5030; BME 8070 (two semesters).

2. *Dissertation (thirty credits):*, earned in BME 9999.

3. *General Courses (minimum of forty credits):* Students must complete a minimum of forty credits in formal lecture courses, in addition to the core courses, including the satisfaction of the minor in biological sciences. The biological sciences minor may be satisfied by the completion of eight credits of course work in graduate-level life science beyond the core curriculum. The student is required to seek approval of his/her selection of courses from a graduate adviser. At least twenty credits in general courses must be chosen from those offered by the Biomedical Engineering Program. A maximum of eight credits may be earned in Directed Study courses.

An approved *Plan of Work* should be filed with the Office for Graduate Studies before the student has earned forty-eight credits beyond the baccalaureate degree. The student must have filed the *Plan of Work* before being recommended for qualifying examinations. (Consult page 27 of this Bulletin for Graduate School regulations governing doctoral study.)

Examinations: All Ph.D. students must pass the qualifying examinations outlined below. After successful completion of the qualifying examinations, a student may be admitted to the status of doctoral candidate.

1. *Written Qualifying Examination:* Students are encouraged to take the written qualifying examination after completing sixteen credits in new course work toward the Ph.D. All Ph.D. students are required to pass a written qualifying examination before completion of thirty-two credits in new course work. Each student has two chances to pass the examination; if the exam is not passed by the second attempt, the student will be dismissed from the program (the option of obtaining a terminal master's degree will apply). The examination is offered once a year, in May.

2. *Oral Qualifying Examination:* Before completion of more than ten credits in BME 9999, Doctoral Dissertation Research, each student is required to successfully pass an oral qualifying examination. This examination shall be a presentation of the student's proposal for dissertation research, and will be administered by the student's Doctoral Dissertation Committee.

Dissertation requirements are satisfied by the successful completion of BME 9999. All Ph.D. students must pass the written and oral qualifying examinations before election of more than ten dissertation credits. All Ph.D. students must register for dissertation credits for any semester in which they utilize campus facilities or consult with faculty, even though they may not be enrolled in a formal lecture course. The dissertation defense will be publicized by public notice to the academic community; at this session the candidate presents his/her doctoral research for final approval by the Doctoral Dissertation Committee.

COURSES OF INSTRUCTION (BME)

5000 Introduction to Biomedical Engineering. Cr. 4

Survey of historical and contemporary developments in biomedical engineering research. Basic principles of mechanics applied to the study of the human system. Introduction to research laboratories within the biomedical engineering program. (B)

5020 Computer and Mathematical Implications in Biomedical Engineering. Cr. 4

Prereq; some familiarity with a computer language. Application of numerical methods in biomedical engineering. Data acquisition, reduction, and analysis using numerical methods and computer programming for such tasks. (Y)

5030 Introduction to Molecular Biology for Engineers. Cr. 3

Introduction to cell biology and molecular biology for engineers interested in biomechanical engineering. (Y)

5100 Engineering Physiology. (CHE 5100) (ECE 5100) (I E 5100) (M E 5100) Cr. 4

Prereq: ECE 4300 or M E 3400. Basic principles of human physiology presented from the engineering perspective. Bodily functions, their regulation and control discussed in quantitative terms and illustrated by simple mathematical models where feasible. (F)

5210 Musculoskeletal Biomechanics. (M E 5160) Cr. 4

Prereq: BME 5010 or PSL 5550 Structure and properties of the major tissue components of the musculoskeletal system and evaluation of how tissues combine to provide support and motion to the body. (W)

5250 Spine and Hip Fractures in the Elderly. Cr. 2

Etiology and sequela of age-related fracture. Methodologies for detection and treatment of osteoporosis. Predictors of fracture risk. (B)

5370 Introduction to Biomaterials. (M E 5180) (MSE 5180) Cr. 4

Prereq: MSE 1300, BME 5010 or PSL 5550. Introduction to study of both biological materials (bone, muscle, etc.) and materials for medical applications. Topics include tissue properties and effects of pathology, biocompatibility, and design considerations. (Y)

5380 Biocompatibility. (MSE 5385) Cr. 4

Prereq: BME 5010 or PSL 5550. Wound healing and the tissue response to foreign materials. The organization activation, and mechanisms of the immune system. Bioactive materials and the molecular basis for surface recognition Y masking. Biocompatibility. (Y)

**5390 Experimental Methods for Biomaterials. (MSE 5390)
Cr. 4**

Hands-on and demonstration exposure to laboratory techniques for the assessment of biological tissues and artificial biomaterials. (Y)

**5570 Design of Human Rehabilitation Systems. (ECE 5170)
(I E 5170) (M E 5170) Cr. 4**

Prereq: M E 4450; senior standing. Design, fabrication and testing of customized hardware to aid handicapped patients. (W)

5990 Directed Study. Cr. 1-4

Prereq: senior standing and written consent of program director. Independent projects on subjects in the field of biomedical engineering. (T)

5995 Special Topics in Biomedical Engineering I. Cr. 1-4

Topics as announced in Schedule of Classes. (I)

**6480 Biomedical Instrumentation. (ECE 6180) (I E 6180)
(M E 6180) Cr. 4**

Prereq: ECE 3300, BME 5010 or PSL 5550, and BME 5020. Engineering principles of physiological measurements. Signal conditioning equipment, amplifiers, recorders and transducers. Recent advances. (B:F)

**7100 Mathematical Modeling in Impact Biomechanics.
(ECE 7100) (I E 7100) (M E 7100) Cr. 4**

Prereq: M E 3400 and BME 5010. Review of models created for impact simulations. Regional impact simulation models. Human and dummy models subject to various restraint systems. (W)

**7160 Impact biomechanics. (ECE 7160) (I E 7160) (M E 7160)
Cr. 4**

Prereq: M E 3400 and BME 5010. Biomechanical response of the body regions and the whole body to impact. Mechanisms of injury in blunt impact. Effects of restraints on injury reduction. Development of test surrogates such as dummies. Material fee as indicated in the schedule of classes. (I)

7210 Tissue Biomechanics. (M E 7195) Cr. 4

Prereq: BME 5010 or PSL 5550. Tissue-level mechanical properties. Analytical models of hard and soft tissue mechanics. Soft tissue viscoelasticity. Wolff's law and bone remodeling. Form and function relationships from microstructure to macrostructure. (B:F)

7250 Engineering Gerontology. (I E 7255) Cr. 4

Introduction to mastery of basic tools and methods required for evaluating devices and environments for the elderly. Practical approach to redesign and implementation improvements for the elderly. Adoption of current gerontological literature. (B:F)

7370 Biomaterial Interfaces. (CHE 7370) Cr. 4

Prereq: BME 5370. Effects of topography and texture on the performance of biomaterials. Self-organization of biomembranes and supraamolecular systems. (B)

**7390 (CHE 7390) Tissue Engineering and Hybrid Systems.
Cr. 4**

Prereq: BME 5370, and CHE 7100 or BME 5020. Seminar and project based approach to the design, development, analysis and application of organ and tissue replacement systems which incorporate processed materials and living cells. (F)

7610 Pathophysiology of Pain. Cr. 3

Neurophysiology of pain from nerve receptors in peripheral tissue to synaptic transmission in the central nervous system. Neurophysiology and biology of pain in the spine, hip, knee and muscle. (Y)

7670 Neurophysiology Laboratory. Cr. 2

Anesthetized animal models used to demonstrate and study EMG recordings, principles of compound nerve potentials, sensory recording from joint and muscle, and effect of inflammation on sensory nerve response. (Y)

7990 Directed Study. Cr. 1-4

Prereq: written consent of program director. Independent projects in the fields of biomedical engineering. (T)

7995 Special topics in Biomedical Engineering II. Cr. 1-4

Prereq: consent of program director. Topics as announced in Schedule of Classes. (I)

7996 Research. Cr. 1-4

Prereq: consent of chairperson and adviser. Combined experimental and analytical study of a problem in biomedical engineering. (T)

8070 Seminar in Biomedical Engineering. Cr. 1 (Max. 2)

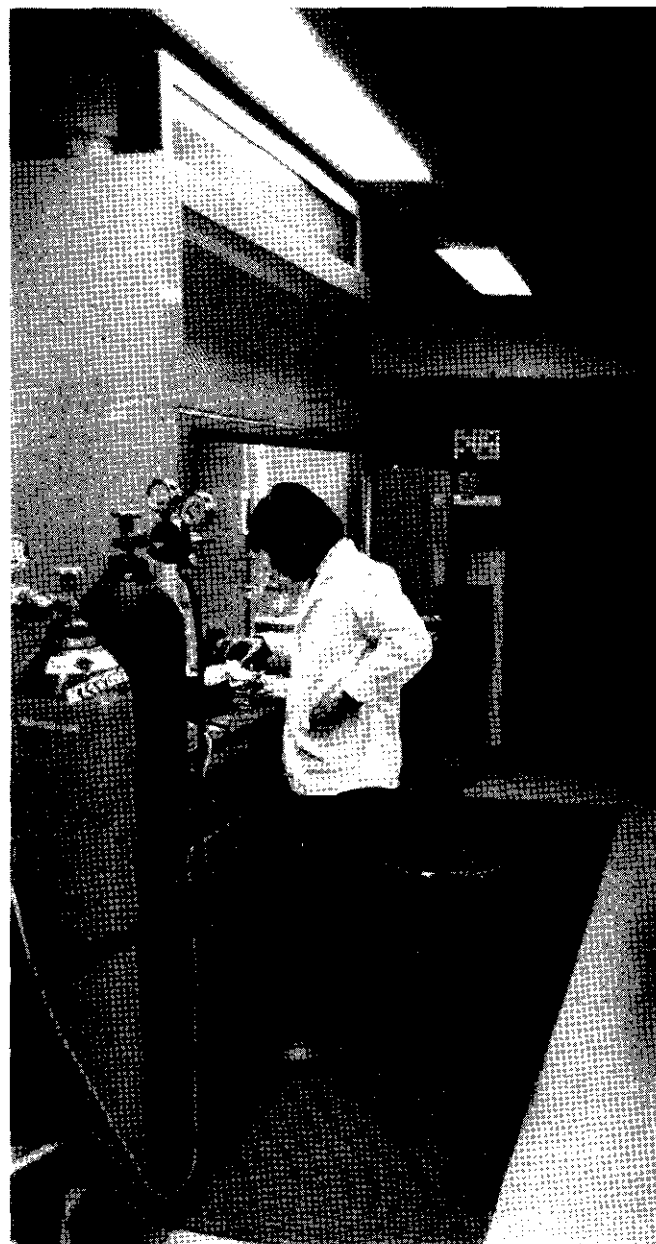
Lectures on biomedical engineering and related fields by guest speakers, faculty, and students. M. S. students are required to take one semester; Ph.D. students are required to take two semesters. (F,W)

8999 Master's Thesis Research and Direction. Cr. 1-8 (Max. 8)

Prereq: consent of adviser. (T)

**9999 Doctoral Dissertation Research and Direction.
Cr. 1-16 (Max. 16)**

Prereq: consent of chairperson of program graduate committee. No more than 10 credits to be elected before doctoral candidacy. Offered for S and U grades only. (T)



COLLEGE OF ENGINEERING DIRECTORY

Web address: <http://www.eng.wayne.edu>

DEAN

Room 1150, Engineering Building; 577-3775; Fax: 577-5300
(e-mail) kuo@dbo.eng.wayne.edu

ASSOCIATE DEAN—ACADEMIC AFFAIRS

Room 1172, Engineering Building; 577-3040; Fax: 577-5300
(e-mail) ssalley@chem1.eng.wayne.edu

ASSOCIATE DEAN—RESEARCH

Room 1164, Engineering Building; 577-3861; Fax: 577-5300
(e-mail) rkummler@chem1.eng.wayne.edu

ASSISTANT DEAN —STUDENT AFFAIRS

Room 1170, Engineering Building; 577-3780; Fax: 577-5300
(e-mail) thompkin@dbo.eng.wayne.edu

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Room 3170, Engineering Building; 577-3817; Fax: 577-1101
(e-mail) gzaddach@dbo.eng.wayne.edu

DIRECTOR, ENGINEERING TECHNOLOGY

4855 Fourth Avenue; 577-0800; Fax: 577-1781
(e-mail) etchair@eng.wayne.edu

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W.S.U. Placement Services,
1001 Faculty/Administration Bldg.; 577-3390; Fax: 577-4995
(e-mail) thompkin@dbo.eng.wayne.edu
(e-mail) redwine@herakles.stuaffrs.wayne.edu

RESEARCH SUPPORT OFFICER

Room 1168, Engineering Building; 577-3759; Fax: 577-5300
(e-mail) rescoord@eng.wayne.edu

CHEMICAL ENGINEERING

Room 1103, Engineering Building; 577-3800; Fax: 577-3810
(e-mail) chechair@eng.wayne.edu

CIVIL AND ENVIRONMENTAL ENGINEERING

Room 2172, Engineering Building; 577-3789; Fax: 577-3881
(e-mail) cechair@eng.wayne.edu

ELECTRICAL AND COMPUTER ENGINEERING

Room 3103, Engineering Building; 577-3920; Fax: 577-1101
(email) ecechair@eng.wayne.edu

ELECTRONICS AND COMPUTER CONTROL SYSTEMS

WSU Campus Program:
Room 3105, Engineering Bldg.; 577-3920; Fax: 577-1101
(e-mail) fwesterv@ece.eng.wayne.edu
Ford Motor Company Program:
Room D-27, Fairlane Training & Development Center;
313-323-1182; Fax: 390-1237

ENGINEERING MANAGEMENT

Room 2143.1, 4815 Fourth St.; 577-3821; Fax: 577-8833
(e-mail) falken@mie.eng.wayne.edu

HAZARDOUS WASTE PROGRAMS

Room 1103, Engineering Building; 577-3716; Fax: 577-3810
(e-mail) hwm@eng.wayne.edu

INDUSTRIAL AND MANUFACTURING ENGINEERING

Manufacturing Engineering Building; 577-3821; Fax: 577-8833
(e-mail) imechair@eng.wayne.edu

MATERIALS SCIENCE AND ENGINEERING

Room 1103, Engineering Building; 577-3800; Fax: 577-3810
(e-mail) mse@eng.wayne.edu

MECHANICAL ENGINEERING

Room 2103, Engineering Building; 577-3845; Fax: 577-8789
(e-mail) mechair@eng.wayne.edu

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Room 206, 818 West Hancock; 577-1344; Fax: 577-8333
(e-mail) biodir@eng.wayne.edu

CENTER FOR AUTOMOTIVE RESEARCH

Room 2121, Engineering Building; 577-3887; Fax: 577-8789
(e-mail) carctr@eng.wayne.edu

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Room 2140, Engineering Building; 577-3786; Fax: 577-0105
(email) eshop@eng.wayne.edu

MACHINE SHOP

Room 1410, Engineering Building; 577-3820; Fax: 577-5300
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Office: 1116 Engineering Building 577-3800

Chairperson: Esin Gulari

Associate Chairperson: James H. McMicking

Professors

Esin Gulari, Ralph H. Kummier, Charles W. Manke, Jr., K. Simon Ng, Erhard W. Rothe, Stanley K. Stynes (Emeritus)

Associate Professors

Charles B. Leffert (Emeritus), James H. McMicking, Charles W. Manke, Jr., Susil K. Putatunda, Steven O. Salley

Assistant Professors

John E. Benci, Yinlun Huang, Rangaramunajam Kannan, Guang-Zhao Mao, Howard W.T. Matthew, Gina Shreve, Paul Van Tassel

Adjunct Professors

Gregory W. Auner, Ronald F. Gibson, Golam Newaz, Gene P. Reck

Graduate Degrees and Certificates

GRADUATE CERTIFICATE in Hazardous Waste Control

GRADUATE CERTIFICATE in Hazardous Materials Management on Public Lands

GRADUATE CERTIFICATE in Environmental Auditing

GRADUATE CERTIFICATE in Polymer Engineering

MASTER OF SCIENCE in Chemical Engineering

MASTER OF SCIENCE in Materials Science and Engineering

MASTER OF SCIENCE in Hazardous Waste Management

DOCTOR OF PHILOSOPHY with a major in Chemical Engineering

DOCTOR OF PHILOSOPHY with a major in Materials Science and Engineering

Chemical Engineering

The field of the chemical engineer embraces those industries in which matter is treated to effect a change of state, energy content, or composition; and in these industries the chemical engineer may be concerned with either the processes or the process equipment used for them. More specifically, the chemical engineer may enter the fields of fuels and petroleum processing; heavy, fine and pharmaceutical chemicals; textiles and fibers; food processing and products; natural and synthetic rubbers and plastics; explosives; pulp and paper; cements and building materials; surface coatings; disposal of chemical plant wastes; atomic energy processes; environmental control and medical systems; and the general fields of biotechnology.

Areas of specialized research and support for graduate students include thermodynamics and transport properties of polymer solutions and melts, processing, rheology and separations of polymers, heterogeneous catalysis, surface science of catalytic and polymeric materials, laser-based imaging of chemical species and reactions, environmental transport and management of hazardous waste, process design and synthesis based on waste minimalization, biocatalysis in multiphase systems, bioremediation for waste treatment, tissue engineering, and pharmacokinetics.

Materials Science and Engineering

Materials problems constitute an important area of research and development in the complex technology of our industrial society. The use of advanced materials, such as thermoplastic and thermoset polymers, intermetallic alloys, reinforced plastic or metal composites, ceramics and electronic materials, in the manufacturing of durable goods and devices has presented challenges to the profession of materials science and engineering. Materials engineers must understand the behavior of advanced materials, their chemical, mechanical, optical, thermal, and electrical properties, and the atomic or molecular structure that determines these properties. They can then apply their knowledge to the synthesis and processing of materials into useful products by controlling and improving their properties.

Areas of specialized research and support for graduate students include processing and rheology of polymers, thermodynamics and transport properties of polymer solutions and melts, computer simulation of polymeric and microporous materials, deformation and fracture of materials at elevated temperatures, effects of processing on mechanical properties of intermetallic alloys, influences of microstructure on fatigue, fracture toughness, stress cracking and corrosion in metals, nondestructive mechanical testing of composites, surface science of catalytic and polymeric materials, laser-based imaging of chemical species and reactions, electronic materials and sensors for automotive applications.

Certificate Program in Polymer Engineering

This program provides specialized formal education for working engineers and scientists. Those enrolled in the program will learn the fundamentals of polymer science and engineering, extend their knowledge of current polymer research topics, and maintain technical competitiveness by broadening their polymer expertise.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Applicants must have a Bachelor of Science degree in engineering, chemistry, or physics.

CERTIFICATE REQUIREMENTS: Students must complete twelve credits, including six credits in required courses: CHE 5350 and 5360; and six credits in electives. The minimum h.p.a. must be 3.0. For additional information and advice about electives, contact Dr. Mao (e-mail address: gzmao@chem1.eng.wayne.edu); telephone: 313-577-3804.

Certificate Programs in Hazardous Waste Management

Three certificate programs (and a master's degree program) have been developed by the Department in consultation with the Institute for Hazardous Materials Management, the U.S. Department of Health and Human Services, the U.S. Bureau of Land Management, and the U.S. Environmental Protection Agency. The programs prepare technically-trained Bachelor of Science-level graduates in engineering, biology, chemistry, geology, health and environmental sciences, or physics to pass the Certified Hazardous Materials Manager Examination. Students who have completed bachelor's degrees in other academic areas must take the following prerequisite courses to qualify for admission: two semesters of calculus, two semesters of freshman chemistry, and one semester of organic chemistry, or the equivalent in environmental studies courses. Completion of a Certificate Program is a prerequisite for admission to the Master of Science in this field.

Admission to these programs is contingent upon admission to the Graduate School; for requirements, see page 16. Applicants must have a Bachelor of Science degree, or the equivalent, in one of the disciplines cited in the preceding paragraph.

HAZARDOUS WASTE CONTROL CERTIFICATE

Requirements: Students must complete thirteen credits including ten credits in required courses: HWM 5510, 5540, 5560, 5570, and 7510; and three credits in electives. The minimum h.p.a. must be 3.0.

For recommendations about electives and additional information, students should contact the Departmental adviser; telephone: 577-3716.

HAZARDOUS MATERIALS MANAGEMENT ON PUBLIC LANDS CERTIFICATE

Requirements: Students must complete twelve credits in required courses: HWM 5510, 5540, 5560, 6200, 6210, 6220, and 7510. The minimum h.p.a. must be 3.0. This program is designed for employees of the U.S. Bureau of Land Management and other government professionals engaged in environmental practice on public lands.

ENVIRONMENTAL AUDITING CERTIFICATE

Requirements: Students must complete fifteen credits including eleven credits in HWM 5510, 5540, 6550, 6610 and 7620; and four credits in electives. The minimum h.p.a. must be 3.0. For recommendations about electives and additional information, students should contact the Departmental adviser; telephone: 313-577-3716.

Master of Science in Chemical Engineering

The Master of Science program is open to students with a bachelor's degree in engineering, and other mathematics-based sciences. The program is designed to accommodate those students employed in local industries, as well as full-time students, by offering a majority of its courses in the evening.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Regular admission requires a 2.8 honor point average or the equivalent as determined by the Department Graduate Officer.

DEGREE REQUIREMENTS: This Master of Science degree is offered under the following options:

Plan A: *Thirty-two credits including a ten credit thesis.*

Plan C: *Thirty-two credits of course work.*

Both options require the following core courses: CHE 7100, 7200, 7300, 7400, and either 5050 or 6997. All course work must be completed in accordance with the regulations of the Graduate School and the College governing graduate scholarship and degrees; see pages 16 - 30 and 118-120, respectively.

Combined Chemical Engineering B. S./M. S. for Students with a B. S. in Chemistry

Admission: This program is designed for individuals who have earned a baccalaureate in chemistry from an accredited United States institution with a minimum honor point average of 3.0. Students are first admitted into the undergraduate program and are then eligible to earn both the B.S. in Chemical Engineering and, once admitted to the Graduate School, the M. S. degree. Evaluation of prerequisite requirements and applicable transfer credit will be determined by the Departmental Adviser.

DEGREE REQUIREMENTS: A combined total of sixty-six credits is required: a minimum of thirty-four credits for the second baccalaureate and thirty-two credits for the master's degree. All course work must be completed in accordance with the regulations of the Graduate School and the College governing graduate scholarship and degrees; see pages 16 - 30 and 118-120, respectively.

For additional information regarding specific course requirements, contact the Departmental Adviser: 313-577-3716.

Master of Science in Materials Science and Engineering

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16.

The Master of Science in Materials Science and Engineering program is open to students with a bachelor's degree in engineering or the physical sciences. Admission requires a 3.0 honor point average, or the equivalent as determined by the Department Graduate Officer. Applicants whose baccalaureate degrees are not in materials or metallurgical engineering, or whose undergraduate preparation is evalu-

ated as insufficient, may be required to elect additional courses prior to admission.

DEGREE REQUIREMENTS: The master's degree is offered by this department under the following options:

Plan A: *thirty-two credits in course work, including ten credits in thesis.*

Plan C: *thirty-two credits in course work.*

Requirements for both options include at least twenty-six credits in materials science and engineering courses, including MSE 7100, 7300, 7400, 7600, and MSE 7200 or CHE 7200 (includes the thesis credit for Plan A students). All course work must be completed in accordance with the regulations of the Graduate School and the College governing graduate scholarship and degrees; see pages 16 - 30 and 118-120, respectively.

Master of Science in Hazardous Waste Management

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Applicants must enter through initial enrollment in and completion of the Certificate Program in Hazardous Waste Control and have satisfied those admission requirements as cited above. Following completion of the Certificate Program, master's candidates must choose either the Regulatory Track or the Engineering Track upon admission.

DEGREE REQUIREMENTS; This Master of Science degree is offered under the following options:

Plan A: *Thirty-four credits plus four credits applicable toward the certificate, and an eight - ten credit thesis.*

Plan C: *Thirty-four credits of course work plus four credits applicable toward the certificate.*

Doctor of Philosophy with a Major in Chemical Engineering

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Regular admission requires a 3.5 honor point average in a Master of Science program, or a Bachelor of Science program from an accredited U.S. institution. Evaluation of admission prerequisites will be determined by the Department Graduate Officer.

DEGREE REQUIREMENTS: Candidates for the doctoral degree must complete ninety credits beyond the baccalaureate, including thirty credits of dissertation direction. Credit distribution must also include at least thirty credits in graduate courses numbered 7000 and above, including CHE 7100, 7200, 7300, and 7400. The program requires a qualifying examination (written and oral, taken after the equivalent of one year of course work), an approved dissertation outline and prospectus, and a final oral examination after completion of the doctoral dissertation. Students should consult page 27 for Graduate School regulations governing doctoral study.

Doctor of Philosophy with a Major in Materials Science and Engineering

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Regular admission requires a 3.5 honor point average in the Master of Science degree or in the Bachelor of Science degree, from an accredited U.S. institution, and the written approval of the student's adviser (selected from the departmental faculty). Evaluation of admission credits is determined by the Department Graduate Officer.

DEGREE REQUIREMENTS: A minimum of ninety credits beyond the Bachelor of Science degree is required in the Doctor of Philosophy program, including thirty credits in dissertation direction. Credit distribution must also include at least thirty credits in graduate courses numbered 7000 and above, including MSE 7100, 7300, 7400, and 7600, and MSE 7200 or CHE 7200. Also required are: a qualifying examination, taken after the equivalent of one academic

year of course work; an approved dissertation outline and prospectus; and a final oral examination, taken after the completion of the Ph.D. dissertation. Students should consult page 27 for Graduate School regulations governing doctoral study.

GRADUATE COURSES

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

CHEMICAL ENGINEERING (CHE)

5040 (ECE 5040) Numerical Methods for Engineers. Cr. 4

Prereq: MAT 2150, CHE 3040. Student computer account required. Solution of ordinary and partial differential equations of engineering by modern numerical methods, including digital computer programming. (B)

5050 Design of Chemical Process Experiments I. Cr. 3

Prereq: I E 3220, CHE 3040, CHE 3800, 3400. Application of modern statistical experimental design methods to improve effectiveness and success in experimental projects, in chemical industry manufacturing, and research and design. (F)

5090 (MSE 5090) Physical Ceramics. Cr. 3

Prereq: MSE 2300. Physical nature and behavior of vitreous and crystalline non-metals. Crystallography and atomic bonding relationships relative to mechanical, thermal, optical, magnetic and electrical properties. Phase equilibria and transformations, interactions in liquid-solid systems, surface properties and diffusional phenomena. (W)

5100 (BME 5100) Engineering Physiology. (ECE 5100) (I E 5100) (M E 5100) Cr. 4

Prereq: ECE 4300 or M E 3400. Basic principles of human physiology presented from the engineering perspective. Bodily functions, their regulation and control discussed in quantitative terms and illustrated by simple mathematical models where feasible. (I)

5200 Transport Phenomena. Cr. 3

Prereq: CHE 3800, 3400. Unified principles of heat mass and momentum transport with application to applied science and engineering problem areas. (F)

5350 Polymer Science. (MET 5350) (MSE 5350) Cr. 3

Prereq. or coreq: MAT 2150. Fundamental relationships between chemical structure and physical properties of high polymers. Basic structures, states and transitions of polymers. Polymerization reactions and processes. Molecular weight, viscous flow and mechanical properties of polymers. Material fee as indicated in the Schedule of Classes. (F)

5360 Polymer Processing. (MSE 5360) Cr. 3

Prereq: CHE 3200 or equivalent undergraduate fluid mechanics. A detailed analysis of polymer processing. Rheology of polymers, flow

in tubes, calendaring, extrusion, coating and injection molding. Material fee as indicated in the Schedule of Classes. (W)

5530 Thermal Processing of Hazardous Waste. (HWM 5530) Cr. 2

Prereq: HWM 5510. Thermal processing technologies, such as combustion fundamentals, thermal incineration equipment and hardware, chemical reaction and recovery systems for hazardous waste control. (W,S)

5600 (MSE 5600) Composite Materials. (CHE 5600) Cr. 3

Coreq: CHE 5350. Introductory course emphasizing a physical understanding of composites: fiber and polymer matrix properties, interfacial adhesion, manufacturing, elastic and strength properties of unidirectional and random laminae. Other topics include various performance properties and plastic design applications. (F)

5630 Waste Treatment Technologies. (HWM 5630) (MET 5550) (MSE 5550) Cr. 3

Prereq: CHE 3300, 3400, 3800. Characterization and analysis of waste components in gas emissions, liquid and solid streams, and suitability for treatment technologies vs. management and remediation of hazardous waste sites. (Y)

5770 Computer-Aided Design and Graphics Techniques in Chemical Engineering. Cr. 3

Prereq: CHE 3040, 3300, 3800. Applications of advanced techniques in computer graphics and specialized engineering analysis software to problems of design in chemical engineering. Design elective includes: information transfer simulation, control/dynamics, optimization techniques. (Y)

5800 Computer-Aided Process Design. Cr. 3

Prereq: CHE 3040 and 3800. Application of computer programs to design chemical process operations. Problems include stagewise and continuous operations. (B)

5995 Special Topics in Chemical Engineering I. Cr. 1-4

Prereq: senior standing. Maximum of eight credits in Special Topics in any one degree program. A consideration of special subject matter in chemical engineering. Topics to be announced in Schedule of Classes. (T)

6040 Computational Methods in Engineering for Graduate Students. Cr. 4

Prereq: B E 1010, MAT 2350, graduate standing, consent of adviser. No credit after CHE 3040. Introduction to methods for solving linear and nonlinear algebraic equations; estimating accuracy of results and numerical integration of ordinary differential equations; mesh methods for solution of partial differential equations. Course project required. (T)

6130 (NFS 6130) Food Preservation. (NFS 7130) Cr. 4

Prereq: senior standing. Basic food preservation methods and the underlying physical, chemical, bacteriological and organoleptic properties of foods to be preserved. Material fee as indicated in the Schedule of Classes. (W)

6450 Biochemical Engineering. Cr. 3

Prereq: CHE 3400, 3800. An introductory study of the principles of chemical engineering, biochemistry and biology which are essential for the design of industrial systems involving biological transformations. (I)

6520 Chemodynamics: Environmental Transport. (HWM 6520) Cr. 3

Prereq: CHE 3300, 3400, 3800. Application of chemical engineering fundamentals and transport phenomena to study the movement and fate of chemicals within the environment (air, water, soil). (S)

6570 Safety in the Chemical Process Industry. (HWM 6570) Cr. 3

Prereq: CHE 3400, 3800. Fundamental and practical experience necessary for safe operation of a chemical process plant. Actual industrial case studies conducted under industry supervision. (W)

- 6590 Bioremediation of Hazardous Waste. (HWM 6590) Cr. 3**
Prereq: CHE 3040, 3400, and 3800. The movement of pollutants through underground matrices by means of transport models. Analysis, identification, assessment and selection of remedial programs. Types of microorganisms, the food chain, oxygen supply and operating conditions will be described. (Y)
- 6610 (HWM 6610) Risk Assessment. Cr. 3**
Prereq: MAT 2030, I E 3220, and CHM 1240. Introduction to risk assessment in environmental hazard management with emphasis on the chemical industry, including hazard identification, exposure analysis and risk characterization. (Y)
- 6700 Fundamentals of Fractals. (MSE 6700) Cr. 3**
Thorough introduction to fundamentals of fractal theory; application of fractal geometry to solve engineering and materials problems. (B)
- 6710 Irreversibility and Chaos. Cr. 3**
Prereq: MAT 2020, MAT 2150, MAT 2210, or equiv. Near-equilibrium and far-from-equilibrium thermodynamics, its extension to chaos, and current concepts of the existence of irreversibility and its relation to entropy on the molecular and macroscopic level of daily experience. (Y)
- 6810 Chemical Process Integration. Cr. 4**
Prereq: CHE 4200 and enrollment in AGRADE program; written consent of adviser. Application of engineering and science background to the design of chemical processes. Comprehensive problems deal with sources of data, design principles and optimization techniques. (B)
- 6850 (MSE 6850) Corrosion. Cr. 3**
Prereq: senior standing in engineering. Advanced study of the theories of corrosion of materials and applications of these theories in the engineering field. Analysis of industrial problems. Comprehensive engineering reports. (B)
- 6993 Process System Waste Minimization. (HWM 6993) Cr. 3**
Prereq: CHE 3400, 3800, 4200, 4600. Waste minimization using process systems engineering technologies. Basic chemical engineering principles and design experience utilized. Computer simulations to identify economical incentives and environmentally-acceptable solutions. (Y)
- 6997 Optimization of Chemical Processes. Cr. 3**
Prereq: CHE 4200. The application of optimization techniques in the design and operation of chemical processes. (W)
- 7100 Advanced Engineering Mathematics. (MET 7100) (MSE 7100) Cr. 3**
Prereq: MAT 2150 or equiv. Presentation, evaluation and use of mathematical methods within the framework of engineering problems; including ordinary and partial differential equations, transforms and vector operations. (F)
- 7200 Advanced Transport Phenomena I. Cr. 4**
Prereq: CHE 7100 and 5200, or equiv. Basic properties of heat, mass and momentum transfer systems; fundamental equations, formulation and solution of boundary value problems. (W)
- 7240 (M E 7240) Processes in Continuous Combustion Systems. Cr. 4**
Prereq: M E 5240 or CHE 5240. Introduction to the physical processes in steady, burner-supported flames in furnaces, open burners and combustors. Premixed and diffusion type, laminar and turbulent type flames for all fuel types will be treated; some models will be developed. (I)
- 7300 Advanced Thermodynamics. (MSE 7300) Cr. 3**
Prereq: CHE 3300, MSE 3300 or CHM 5420. Advanced presentation of the principles of thermodynamics; application to open systems, phase diagrams and chemical equilibria. (F)
- 7330 Polymer Rheology. (MSE 7330) Cr. 3**
Prereq: CHE 5200 or 7200 or graduate fluid mechanics background. Flow properties of polymer solutions; methods of measuring fundamental rheological parameters using viscometric devices; prediction of material properties from theoretical principles. Correlation between theoretical and experimental results. (B)
- 7350 Polymer Solutions. (MSE 7350) Cr. 3**
Prereq: CHE 5350. Solubility of polymers, configuration of chain molecules, colligative properties of dilute polymer solutions, spectroscopy, optical activity, light and x-ray scattering of polymer solutions, frictional properties of dissolved polymers, solution properties of polyelectrolytes. (B)
- 7390 Tissue Engineering and Hybrid Systems. (BME 7390) Cr. 4**
Prereq: BME 5370, and CHE 7100 or BME 5020. Seminar and project based approach to the design, development, analysis and application of organ and tissue replacement systems which incorporate processed materials and living cells. (F)
- 7400 Advanced Kinetics and Reactor Design. Cr. 4**
Prereq: CHE 2800, 3400. Basic properties of reacting systems including the steady state approximation, the relationship of thermodynamics to kinetics, the treatment of coupled reaction problems and design of chemical reactors. Material fee as indicated in the Schedule of Classes. (W)
- 7990 Directed Study. Cr. 1-9**
Prereq: written consent of adviser, chairperson and engineering graduate officer for master's students; written consent of adviser, chairperson and Dean of Graduate Studies for Ph.D. students. Library investigation of an approved project in chemical engineering. Independent study, conferences with supervisor and preparation of a comprehensive written and oral report. (T)
- 7995 Special Topics in Chemical Engineering II. Cr. 1-4**
Prereq: CHE 3800, 3400. Maximum of six credits in Special Topics in any one degree program. A consideration of special subject matter in chemical engineering. Topics to be announced in Schedule of Classes. (F,W)
- 8200 Advanced Transport Phenomena II. Cr. 3**
Prereq: CHE 7200. Coupled transport phenomena in engineering systems; simultaneous fluid flow with heat and mass transfer, transport in multiphase systems and review of correlation methods. (I)
- 8400 Advanced Kinetics. Cr. 3**
Prereq: CHE 7400. Chemical kinetics; reactions in flow fields (shock waves and flames), photochemical and chemiluminescent reactions, diffusion controlled reactions and the numerical solution of coupled chemical reactions. (I)
- 8450 Advanced Plant Design Concepts. Cr. 2**
Prereq: CHE 4200, 6997. New techniques in design of plants: profit analysis, productivity, cost estimation, new methodologies. (I,W)
- 8500 Graduate Engineering Internship. Cr. 0**
Offered for S and U grades only. Engineering practice under supervision in cooperative education program. (T)
- 8510 Graduate Co-op Experience. Cr. 1**
Offered for S and U grades only. Presentation of oral and written reports to peer group describing co-op experience. (T)
- 8991 Advanced Topics in Environmental Engineering and Waste Management. Cr. 3**
Open only to Ph.D. students. Maximum of 12 credits may be elected in any one degree program. Advanced topics in transport phenomena involving hazardous waste, process design for waste minimization, bioremediation and bioseparations involving hazardous waste. New experimental techniques and models. (Y)
- 8992 Advanced Topics in Spectroscopic Techniques in Engineering. (MSE 8992) Cr. 3**
Open only to Ph.D. students. Maximum of 12 credits may be elected in any one degree program. Engineering applications of spectroscopic techniques including light scattering, absorption spectroscopy, scanning tunneling, atomic force microscopy. (Y)

8993 (MSE 8993) Advanced Topics in Polymer Science and Engineering. Cr. 3

Open only to Ph.D. students. Maximum of 12 credits may be elected in any one degree program. Advanced topics in characterization, rheology, and dynamics of polymer melts and solutions. New experimental techniques, theory, and simulations used in current research. (Y)

8994 Advanced Topics in Biochemical Engineering. Cr. 3

Open only to Ph.D. students. Maximum of 12 credits may be elected in any one degree program. Advanced topics in tissue engineering, biomaterials and transport phenomena in artificial organs. New experimental techniques and models. (Y)

8996 Research. Cr. 1-9 (Max. 30)

Prereq: consent of adviser. Library and laboratory investigation of an approved proposal for advanced research project. Conferences and periodic oral progress reports. Comprehensive report of entire project upon completion. (T)

8997 Chemical Engineering Graduate Seminar. Cr. 1

Prereq: CHE 7400 and 7200. Normally requires more than one semester; deferred grade accepted. Advanced concepts in chemical engineering; presentation of research results. Must attend and present evidence of attending 30 hours of seminar over two-year period, and present one seminar. (T)

8999 Master's Thesis Research and Direction. Cr. 1-10 (Max. 10)

Prereq: consent of adviser. (T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16

Prereq: consent of chairperson of student graduate committee. No more than ten credits may be elected before doctoral candidacy is obtained. Offered for S and U grades only. (T)

HAZARDOUS WASTE MANAGEMENT (HWM)

5320 (OEH 7650) Chemistry of Industrial Processes. (CHE 5320) Cr. 3

The mechanical and theoretical similarities of various kinds of process equipment are studied with respect to the OSHA and EPA standards of measurement of worker exposure. Emphasis is placed on the operation of actual processes components with respect to the likelihood of mechanical failure. (W)

5510 Introduction to Environmental Management. Cr. 2

Prereq: senior standing in engineering, biological or physical sciences; MAT 2030, CHM 1240, PHY 2140, CHM 5420 or CHE 2800. Overview of science of hazardous materials management, laws and regulations, technology involved in treatment, storage and disposal of hazardous waste, management principles. (T)

5520 (OEH 7510) Air Sampling and Analysis. (CHE 5520) Cr. 3

Classical methods of obtaining samples of the air, recent developments in the field of portable direct reading devices. Theory underlying the use of impingers, impactors, electrostatic and thermal precipitators, filtration media and other sampling devices. Material fee as indicated in the Schedule of Classes. (F,W)

5530 (CHE 5530) Thermal Processing of Hazardous Waste. Cr. 2

Prereq: HWM 5510. Thermal processing technologies, such as combustion fundamentals, thermal incineration equipment and hardware, chemical reaction and recovery systems for hazardous waste control. (W,S)

5540 Law and Administration Issues in Hazardous Waste Management I. Cr. 2

Prereq: senior standing. Management guidelines for industrial waste control including: cradle-to-grave concepts, RCRA, Superfund, the Solid Waste Disposal Act, identification, modification, reporting, standards, permits and rules. (T)

5560 Transportation of Hazardous Materials. Cr. 2

Prereq: HWM 5510, 5540. Overview of air, rail, maritime and highway transportation of hazardous materials. Applicable regulations and management (interstate, intrastate, and international). Standard procedures and guides for shippers (manifesting, labeling, packaging, marking, placarding, and shipment). (T)

5570 Emergency Spill Response. Cr. 2

Prereq: HWM 5510, 5540, 5560. Overview of regulations, management and methodologies for emergency spill response to hazardous material incidents, hazard recognition, analysis and evaluation, safety contingency planning, hazmat incidents, response techniques, clean-up and follow-up. (T)

5580 Land Disposal of Hazardous Waste. (C E 5580) Cr. 2

Prereq: HWM 5510. Industrial landfill, biological methods of disposal, land disposal techniques, ocean disposal techniques, disposal of flue gas cleaning wastes. (F,W)

5590 Biological Methods for Waste Disposal. (C E 5590) Cr. 2

Prereq: HWM 5510. Biological treatment of industrial wastes, including unit operations, solids handling and activated carbon processes. (F,W)

5610 National Environmental Policy Act. Cr. 2

Prereq: HWM 5510. Principles and requirements of National Environmental Policy Act (NEPA), regulations and guidance of Council on Environmental Quality (CEQ) and role of Environmental Protection Agency (EPA). Actual environmental impact statements used for review and comment. (Y)

5620 Chemistry of Reactive and Toxic Materials. Cr. 2

Prereq: HWM 5510. Principles of reactive chemical hazards, including key physical and chemical properties which identify material hazards and the migration of hazardous materials. (Y)

5630 (CHE 5630) Waste Treatment Technologies. (MET 5550) (MSE 5550) Cr. 3

Prereq: CHE 3300, CHE 3400, CHE 3800. Characterization and analysis of waste components in gas emissions, liquid and solid streams, and suitability for treatment technologies vs. management and remediation of hazardous waste sites. (Y)

5650 Chemical Weapons Convention Management. Cr. 2

Prereq: CHE 5510. Basics of 1996 Chemical Weapons Convention, applicable to U.S. statutes and their impact on American businesses. (Y)

5670 Safety and Health for Hazardous Waste Sites. Cr. 2

Prereq: HWM 5510 and 5540. Overview for occupational safety and health programs at inactive hazardous waste sites including hazard assessments, planning and organization, safety inspections, training, medical program, air monitoring and site emergencies; American Red Cross Aid/CPR training. (Y)

5810 (GEG 5810) Locational Issues in Hazardous Waste Management. (CHE 5810) (GPH 5810) Cr. 3

Analyses of spatial aspects of hazardous waste sites; corporate and public considerations and reactions; regulatory impacts. (S)

5995 Special Topics in Hazardous Waste Management. Cr. 1-4

Prereq: graduate standing, consent of instructor. Maximum nine credits of Special Topics in any one degree program. Special subject material in hazardous waste or materials management. (T)

6200 Environmental Site Characterization I. Cr. 2

Prereq: HWM 5510, 5540. Methodology to determine whether land is contaminated, to provide basic understanding of multimedia flow from a contaminated site both in general and specific applications, and to provide sampling strategies and hands-on experience in sampling. (Y)

6210 Preliminary Assessments under CERCLA. Cr. 1

Prereq: HWM 5510 and 5540. Performance of preliminary assessment per EPA and BLM guidelines in compliance with CERCLA (Superfund). (Y)

- 6220 Negotiated Procurement in Hazardous Materials Management (HMM). Cr. 1**
Prereq: HWM 5510 and 5540. Definition of HAZMAT contract, government procedures, format, elements, instructions, evaluation criteria, and cost estimation; how to evaluate and select contractors; administrative dispute resolution. (Y)
- 6230 Preparation of Statements of Work. Cr. 1**
Prereq: HWM 5510. Writing statements of work for CERCLA project management providing for adequate project development, organization, management overview, contract type selection for hazardous waste investigations. (Y)
- 6250 Law Enforcement in Hazardous Waste Management. Cr. 1**
Prereq: HWM 5510. Priorities and safe procedures for investigations and mitigations of hazardous materials incidents on public lands. (Y)
- 6260 Geodata Collection and Use. Cr. 2**
Prereq: HWM 5510, B E 1010. Interrelationships of data collection and spatial analysis, integration of geoscience technologies with natural resource issues; coordinate values, data standards, geopositioning techniques. (Y)
- 6270 (C E 6270) Environmental Management and Sustainable Development. Cr. 3**
Prereq: C E 4220. Review and application of techniques and practices. (Y)
- 6520 (CHE 6520) Chemodynamics: Environmental Transport. Cr. 3**
Prereq: CHE 3300, CHE 3400, CHE 3800. Application of chemical engineering fundamentals and transport phenomena to study the movement and fate of chemicals within the environment (air, water, soil). (S)
- 6530 Pollution Prevention: Waste Minimization. Cr. 2**
Prereq: HWM 5510, 5540. Case-study approach to hazardous waste management in industrial processes through process design to minimize or eliminate chemical waste production. Solvent recovery, process change and recycle concepts included. (S,F)
- 6540 Insurance and Risk Management for Environmental Liabilities. Cr. 2**
Prereq: HWM 5510, 5540. Use of insurance and other risk management techniques to anticipate, reduce, or respond to environmental hazards. Coverage issues, financial responsibility prerequisites of various environmental laws, and various policy forms and coverages. (Y)
- 6550 Fundamentals of Environmental Auditing. Cr. 2**
Prereq: HWM 5540, 5510. Introduction to the fundamentals and techniques in environmental auditing with special emphasis on auditing protocols, verification of findings and interpretation. (W)
- 6570 (CHE 6570) Safety in the Chemical Process Industry. Cr. 3**
Prereq: CHE 3400, CHE 3800. Fundamental and practical experience necessary for safe operation of a chemical process plant. Actual industrial case studies conducted under industry supervision. (W)
- 6580 Principles of Environmental Sampling. Cr. 2**
Prereq: I E 3220, HWM 6550. Introduction to environmental sampling with emphasis on statistical design, quality control and quality assurance, and interpretation of data. (Y)
- 6590 (CHE 6590) Bioremediation of Hazardous Waste. Cr. 3**
Prereq: CHE 3040, CHE 3400, and CHE 3800. The movement of pollutants through underground matrices by means of transport models. Analysis, identification, assessment and selection of remedial programs. Types of microorganisms, the food chain, oxygen supply and operating conditions will be described. (Y)
- 6600 Air Pollution Control Management. Cr. 2**
Prereq: HWM 5510 or 5550. Elements as dictated by 1990 Clean Air Act and related state and local legislation to prepare practitioner for analysis, auditing, permitting, policy making, and implementation of control programs; including comparative studies with at least one other country. (Y)
- 6610 Risk Assessment. (CHE 6610) Cr. 3**
Prereq: MAT 2030, I E 3220, and CHM 1240. Introduction to risk assessment in environmental hazard management with emphasis on the chemical industry, including hazard identification, exposure analysis and risk characterization. (W)
- 6700 Environmental Information Management via Internet. Cr. 2**
Prereq: HWM 5510. Introduction to use of personal computers and networks to obtain and use environmental data from public and commercial sources; use of Internet, WSUnet, E-mail, government and commercial bulletin boards; interaction of networks and CD-ROM resources. (Y)
- 6800 Principles of Ecosystem Management. (BIO 6800) Cr. 2**
Prereq: BIO 2200. Fundamentals and concepts of ecosystem management: ecological, legal, economic, sociological, and institutional factors, management tools, and practical considerations. (Y)
- 6810 Industrial Ecology. Cr. 2**
Prereq: HWM 5510, 7994. How human involvement in industry fits the ecology model; automotive industry used as case study. (Y)
- 6820 Environmental Economics. Cr. 2**
Prereq: HWM 5510. Statistical analysis and engineering economics used for investigation and remediation projects; cost minimization. (Y)
- 6993 (CHE 6993) Process System Waste Minimization. Cr. 3**
Prereq: CHE 3400, CHE 3800, CHE 4200, CHE 4600. Waste minimization using process systems engineering technologies. Basic chemical engineering principles and design experience utilized. Computer simulations to identify economical incentives and environmentally-acceptable solutions. (Y)
- 7200 Environmental Site Characteristics II. Cr. 2**
Prereq: HWM 6200. Rapid, low-cost, hazardous material assessments emphasizing state of the art analytical techniques and interactive tools, including XRF, GPS and remote sensing. (Y)
- 7260 Waste Management Internship. Cr. 1-3**
Prereq: HWM 5510, 5560. Intensive work period (about 40 hours per credit) at Wayne State Occupational Environmental and Safety Laboratory or equivalent facility; hazardous waste analysis and handling. (T)
- 7270 Hazardous Waste Laboratory. Cr. 2**
Prereq: HWM 5510, 5560. Demonstration of laboratory experiments in analysis and disposal techniques concerned with hazardous waste control. Material fee as indicated in the Schedule of Classes. (Y)
- 7420 (OEHS 7420) Environmental Science I: Introduction to Air Pollution. (CHE 5550) Cr. 3**
Prereq: CHE 2800, MAT 2350. Man's natural environment as well as nature's cleansing processes; man-made and natural contamination processes and man's control over these phenomena through both technological and legal processes. (T)
- 7510 Public Issues of Hazardous Waste. Cr. 2**
Prereq: HWM 5510, 5540. Discussion and analysis of current issues related to hazardous waste management. Discussions led by outside experts. (Y)
- 7540 Law and Administration Issues in Hazardous Waste Management II. Cr. 2**
Prereq: HWM 5510 and 5540. Advanced management guidelines for hazardous waste control with case studies. (Y)
- 7560 Facilities Compliance Auditing. Cr. 2**
Prereq: HWM 6550. Examples of real estate transaction, environmental compliance and workplace audits. Emphasis on audits involving solid and hazardous waste, non-residential property transfer,

environmental discharge, and health and safety laws and regulations. Case studies. (Y)

7570 Process Safety Management and Risk Management Programs. Cr. 2

Prereq: HWM 6570. Implementation OSHA Process Safety Regulations and EPA Risk Management Program. Regulations, case studies, mock process hazards analysis. (Y)

7620 Environmental Auditing: Real Estate Transactions. Cr. 2

Prereq: HWM 6550. Elements that should be included in a professionally-accepted real estate transaction audit; sources and procedures for audit. (Y)

7990 Directed Study. Cr. 1-9

Prereq: written consent of adviser, chairperson, and engineering graduate officer for M.S. program. Library investigation of approved project. Independent study, conferences with supervisor, comprehensive written and/or oral report. (T)

7994 ISO 14000: Global Environmental Management Standard. (FBE 7994) Cr. 2-3

Prereq: FBE 7991. Hazardous waste management students must elect the two credit option. Review of global environmental management international standard, based on quality management principles embodied in ISO 9000, covering management systems; operations including natural resource and energy use; and environmental systems. Implementation and certification procedures. (Y)

8010 Life Cycle Management. Cr. 2

Prereq: HWM 5510 or 7994. Cradle-to-grave strategy for management of products, services, and processes; incorporation of full cost recovery (FCR) and life cycle assessment (LCA) to properly include quality, safety, and environmental impact into the real cost of societal design. (Y)

8997 Hazardous Waste Management Graduate Seminar. Cr. 1

Prereq: HWM 5560, 7510. Normally requires more than one semester; deferred grade accepted. Advanced topics in hazardous waste management; presentation of research results. Must attend and present evidence of attending thirty hours of seminar over two-year period, and present one seminar. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (Max. 8)

Prereq: HWM 5510, 5540, 5560, 7510, and consent of adviser. (T)

MATERIALS SCIENCE and ENGINEERING (MSE)

5010 Materials for Engineering. Cr. 4

Prereq: CHM 1220 and 1230, PHY 2180, MSE 1300, senior or graduate standing. Properties and applications of materials in design and manufacturing; emphasis on metals, ceramics, and polymers. Atomic arrangement, bonding, cell structure and microstructure. Mixing, blending, and alloying to meet needs of advanced technology. (F)

5090 Physical Ceramics. (CHE 5090) Cr. 3

Prereq: MSE 2300. Physical nature and behavior of vitreous and crystalline non-metals. Crystallography and atomic bonding relationships relative to mechanical, thermal, optical, magnetic and electrical properties. Phase equilibria and transformations, interactions in liquid-solid systems, surface properties and diffusional phenomena. (W)

5180 (BME 5370) Introduction to Biomaterials. (M E 5180) Cr. 4

Prereq: MSE 1300, BME 5010 or PSL 5550. Introduction to study of both biological materials (bone, muscle, etc.) and materials for medical applications. Topics include tissue properties and effects of pathology, biocompatibility, and design considerations. (Y)

5350 (CHE 5350) Polymer Science. (MET 5350) Cr. 3

Prereq. or coreq: MAT 2150. Fundamental relationships between chemical structure and physical properties of high polymers. Basic

structures, states, and transitions of polymers. Polymerization reactions and processes. Molecular weight, viscous flow and mechanical properties of polymers. (F)

5360 (CHE 5360) Polymer Processing. Cr. 3

Prereq: CHE 3200 or equivalent undergraduate fluid mechanics. A detailed analysis of polymer processing. Rheology of polymers, flow in tubes, calendaring, extrusion, coating and injection molding. Material fee as indicated in the Schedule of Classes. (W)

5420 Advanced Materials Laboratory. Cr. 2

Prereq: MSE 3420, 3700, ENG 3060. Experiments in materials science utilizing advanced processing, characterization and testing techniques. (F)

5600 Composite Materials. (CHE 5600) Cr. 3

Prereq: MSE 3700; coreq: 5350. Introductory course emphasizing a physical understanding of composites: fiber and polymer matrix properties, interfacial adhesion, manufacturing, elastic and strength properties of unidirectional and random laminae. Other topics include various performance properties and plastic design applications. (F)

5620 Electron Microscopy. Cr. 4

Prereq: MSE 3400. Theory and practice of electron image formation, sample preparation, diffraction principles and interpretation of effects. (B)

5650 Surface Science. Cr. 3

Prereq: MSE 2300; CHM 5420 or MSE 3300. An introduction to the science and technology of surface phenomena, including surface structure, surface energy, surface diffusion, crystal growth and selected applications of technological importance. (I)

5800 Processing of Powder Materials. Cr. 3

Prereq: MSE 4400. Basic analysis of the various processing steps involved in the manufacture of products from metal powders including powder manufacture, compaction and sintering of metal powders and the forming of powder metallurgy (P/M) preforms. Ceramics and metal powders, metal matrix composites, processed by techniques such as sol-gel, SHS. (B)

5995 Special Topics in Materials Science I. Cr. 1-4

Prereq: MSE 3400, 3700. Maximum of twelve credits in Special Topics may be elected in any one degree program. Consideration of special subject matter in materials science. Topics to be announced in Schedule of Classes. (Y)

6500 Fatigue and Fracture of Metals. Cr. 3

Prereq: MSE 3700. A detailed examination of the ways in which engineering materials fail under both static and cyclic loading conditions. Emphasis is on the metallurgical aspects of failure and the underlying mechanisms of fracture and fatigue. (B)

6700 (CHE 6700) Fundamentals of Fractals. Cr. 3

Thorough introduction to fundamentals of fractal theory; application of fractal geometry to solve engineering and materials problems. (B)

6850 Corrosion. (CHE 6850) Cr. 3

Prereq: senior standing in engineering. Advanced study of the theories of corrosion of materials; application of these theories in the engineering field. Analysis of industrial problems. Comprehensive engineering reports. (B)

7100 (CHE 7100) Advanced Engineering Mathematics. (MET 7100) Cr. 3

Prereq: MAT 2150 or equiv. Presentation, evaluation and use of mathematical methods within the framework of engineering problems, including ordinary and partial differential equations, transforms and vector operations. (F)

7180 (M E 7180) Advanced Topics in Biomaterials. Cr. 4

Prereq: M E 5180 or MSE 5180. Seminar format: advanced topics presented to the class; lectures by the instructor and by the participants based on literature reviews. Topics dictated by student interest. (B)

7200 Phase Transformations. Cr. 3

An advanced treatment of phase transformations, based on thermodynamics, kinetics and crystallography. Nucleation, basic mechanisms of transformations, and applications of statistical mechanics.

(W)

7300 (CHE 7300) Advanced Thermodynamics. Cr. 3

Prereq: CHE 3300, MSE 3300 or CHM 5420. Advanced presentation of the principles of thermodynamics; application to open systems, phase diagrams and chemical equilibria.

(F)

7330 (CHE 7330) Polymer Rheology. Cr. 3

Prereq: CHE 5200 or CHE 7200 or graduate fluid mechanics background. Flow properties of polymer solutions; methods of measuring fundamental rheological parameters using viscometric devices; prediction of material properties from theoretical principles. Correlation between theoretical and experimental results.

(B)

7350 (CHE 7350) Polymer Solutions. Cr. 3

Prereq: CHE 5350. Solubility of polymers, configuration of chain molecules, colligative properties of dilute polymer solutions, spectroscopy, optical activity, light and x-ray scattering of polymer solutions, frictional properties of dissolved polymers, solution properties of polyelectrolytes.

(B)

7400 Mechanical Behavior of Materials. Cr. 3

Prereq: MSE 3700. Analysis of elastic and plastic deformation of single crystals and polycrystalline materials, emphasizing the relations between metallurgical microstructure and material properties.

(I)

7600 Structure of Materials and Principles of Diffraction.

Cr. 3

Coreq: MSE 7100. Advanced treatment of structure of materials: crystalline, amorphous, liquid. Methods of structure determination including x-ray, neutron and electron diffraction and scattering.

(Y)

7990 Directed Study. Cr. 1-6

Prereq: written consent of adviser. Library investigation of an approved project in materials science and engineering. Independent study, conferences with supervisor and preparation of a comprehensive report.

(T)

7995 Special Topics in Materials Science II. Cr. 1-4

Maximum of twelve credits in Special Topics may be elected in any one degree program. A consideration of special subject matter in materials science. Topics to be announced in Schedule of Classes.

(I)

8992 (CHE 8992) Advanced Topics in Spectroscopic Techniques in Engineering. (MSE 8992) Cr. 3

Open only to Ph.D. students. Maximum of 12 credits may be elected in any one degree program. Engineering applications of spectroscopic techniques including light scattering, absorption spectroscopy, scanning tunneling, atomic force microscopy.

(Y)

8993 Advanced Topics in Polymer Science and Engineering. (CHE 8993) Cr. 3

Open only to Ph.D. students. Maximum of 12 credits may be elected in any one degree program. Advanced topics in characterization, rheology, and dynamics of polymer melts and solutions. New experimental techniques, theory, and simulations used in current research.

(Y)

8994 Advanced Topics in Mechanical Properties of Metals. Cr. 3

Open only to Ph.D. students. Maximum of 12 credits may be elected in any one degree program. Advanced topics in physical metallurgy and mechanical behavior of materials; metals, intermetallic alloys, ceramics, and composites of these materials. Current research areas, new testing and analysis techniques.

(Y)

8996 Research. Cr. 1-10

Prereq: consent of adviser. Library and laboratory investigation of an approved proposal for advanced research project. Conferences and periodic oral progress reports. Comprehensive report of entire project upon completion.

(T)

8997 Seminar. Cr. 1

Prereq: consent of adviser.

(F,W)

8999 Master's Thesis Research and Direction. Cr. 1-6 (10 req.)

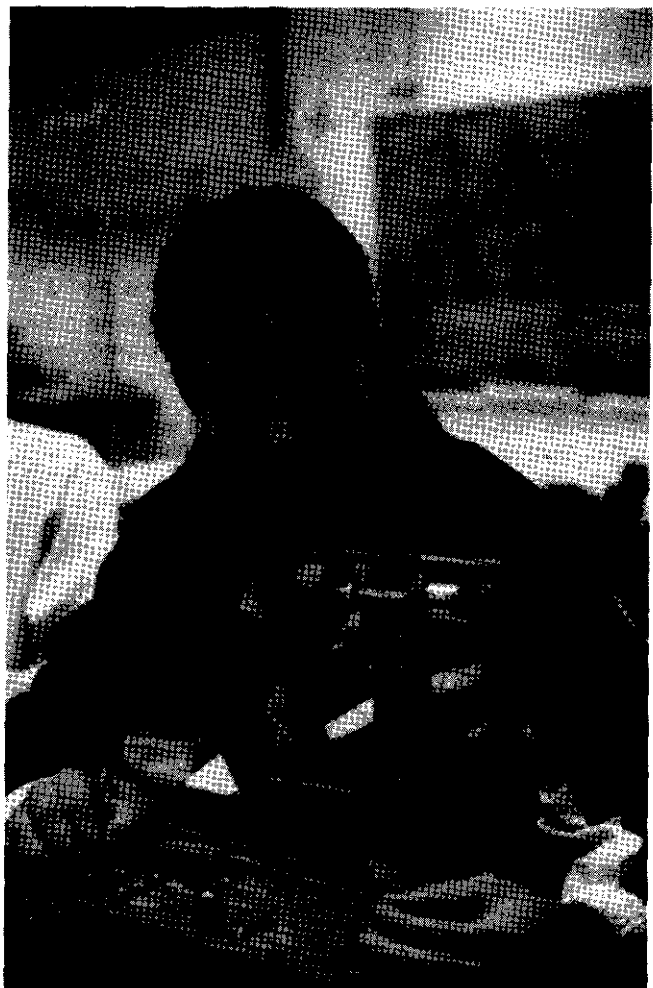
Prereq: consent of adviser.

(T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16

Prereq: consent of chairperson of departmental graduate committee. No more than ten credits may be elected before doctoral candidacy is obtained. Offered for S and U grades only.

(T)



CIVIL and ENVIRONMENTAL ENGINEERING

Office: 2172 Engineering Building; 577-3789
Chairperson: Mumtaz A. Usmen

Professors

H. M. Aktan, F. W. Beaufait, L.T. Cheney (Emeritus), T.K. Datta, S. Khanabis, C.Y. Kuo, J. M. Paulson (Emeritus), M. A. Usmen

Associate Professors

G. Fu, T. M. Heidtke, T. Kagawa, C. J. Miller

Assistant Professors

H.C. Nu, N. Yesiller

Adjunct Faculty

Majeed Bhatti, Nihar Biswas, Brian Dening, Utpal Dutta, Dennis Grylicki, John Hartig, Byung Kim, Phillip Mansour, John Raad, Hassan Saab, Kevin Zielinski

Graduate Degrees

MASTER OF SCIENCE in Civil Engineering

DOCTOR OF PHILOSOPHY with a major in Civil Engineering

The urban crisis in America has brought into sharp focus the profession of civil engineering and the responsibilities of its practitioners. The civil engineer is a leader in such diverse areas of concern as the design of structural systems; water resources planning; the treatment and ultimate disposal of noxious solid and liquid wastes; design of building systems which will provide adequate housing for urban dwellers, commerce and industry; the development of adequate transportation systems; construction methods and management; and the implementation and management of public works infrastructure projects designed to improve the urban environment. Obviously, the responsibilities of the civil engineer directly involve the health, safety and welfare of the public.

The Department of Civil and Environmental Engineering offers graduate degree programs in which students may specialize in the following areas: structures, geotechnical engineering, environmental engineering, transportation, and construction.

Master of Science in Civil Engineering

The civil engineering graduate program at Wayne State University has traditionally attracted students employed by local industries and government. This program is designed to accommodate the needs of both full-time on-campus students and part-time students concurrently employed by local industry or government. To this end, a majority of graduate classes are held in the evening. Alternatively, full-time students have the opportunity to participate in research and experimental work with the faculty, while pursuing their graduate courses.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Additionally, all applicants must satisfy the following:

1. The student must have an undergraduate engineering degree from an institution accredited by the Accrediting Board for Engineering and Technology (ABET) or from a comparable foreign institution. In the event that the degree is in some field other than civil engineering, the student may be required to complete a set of prerequisite undergraduate courses before graduate degree credit may be accrued. Only in exceptional cases will students without an undergraduate engi-

neering background be admitted to the civil engineering graduate program, but in such cases appropriate undergraduate prerequisite course work will be necessary.

2. The student must have an overall honor point average (h.p.a.) of 3.0 for regular admission. Qualified or probationary admission may be granted to students with a lower h.p.a. Conditions of such admissions are specifically mandated and applicants should contact the Department for details.

DEGREE REQUIREMENTS: The Master of Science is offered by this department under the following options:

Plan A: *Thirty-two credits including an eight credit thesis.*

Plan C: *Thirty-two credits of course work.*

For either plan, credits must be distributed as follows: at least twenty credits must be taken in the major (C E courses), of which six credits must be earned in courses numbered 7000-8999, and twelve credits will constitute a core to be selected from one of the following areas: Environmental Engineering, Geotechnical Engineering, Structures, Transportation, Construction.

For specific departmental requirements, students should consult the current issue of the *Civil and Environmental Engineering Graduate Student Handbook*.

Students must maintain a grade of 'B' or better in all core courses. The credit distribution requirements do not include thesis credit for Plan A candidates.

Within the first eight to twelve credits in graduate work, the student should file an adviser-approved *Plan of Work*. All course work must be completed in accordance with the regulations of the Graduate School and the College of Engineering governing graduate scholarship and degrees; see pages 16 - 30 and 118-120, respectively..

Doctor of Philosophy with a Major in Civil Engineering

The Department offers doctoral programs in all the major areas listed as core specializations under the Master of Science degree (see above).

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. For admission to the Ph.D. program, the student's overall honor point average must be 3.2 or better, and 3.4 in the last two years as an undergraduate student. Students who do not satisfy these minimum standards will not be considered for admission to the program until they have completed an M.S. degree and have earned an honor point average in courses taken for graduate credit which is not less than 3.5. Fellowship and assistantship support is available for qualified graduate students; see page 30.

DEGREE REQUIREMENTS: Candidates for the doctoral degree must complete ninety credits beyond the baccalaureate, including thirty credits of dissertation direction, and sixty credits of course work and directed study. All doctoral students are required to submit a *Plan of Work* indicating their course work (with major/minor designation), and developed in consultation with an adviser. Additionally, students should consult page 27 for Graduate School regulations governing doctoral study.

For specific departmental requirements, students should consult the current issue of the *Civil and Environmental Engineering Graduate Student Handbook*.

GRADUATE COURSES (C E)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

5220 Sanitary Chemistry. Cr. 3

Prereq: C E 4210. Fundamentals of chemical principles and their application to unit operations and processes encountered in the treatment of water and waste water. Material fee as indicated in the Schedule of Classes. (B)

5280 Sanitary Engineering Design. Cr. 3

Prereq: C E 4220. Design principles of water and waste water treatment plants. Plant layouts and the design of elements of the plant. Material fee as indicated in the Schedule of Classes. (W)

5350 Introduction to Structural Dynamics. Cr. 3

Prereq: M E 3400, C E 4310. Dynamic properties of structures, nature of dynamic loads, response of structures to dynamic loading, design codes for dynamic loads. (W)

5370 Finite Elements for Structural Engineers. Cr. 4

Prereq: C E 4310 or M E 5600. Matrix structural analysis, discretization of continuous structural systems, stress analysis. Commercial finite element software preprocessing for developing finite element models; postprocessing for evaluating analysis results. (F)

5510 Foundation Engineering. Cr. 3

Prereq: C E 4510. Student computer account required. Site investigation: exploration, sampling and testing techniques. Site preparation: compaction, dewatering. Design of shallow and deep foundations: bearing capacity and settlements. (F)

5520 Earth Retaining Systems. Cr. 3

Prereq: C E 5510. Application of soil mechanics principles to the analysis, design and construction of unbraced and braced excavations, bulkheads, retaining walls and earth slopes. (B)

5580 (HWM 5580) Land Disposal of Hazardous Waste. Cr. 2

Prereq: CHE 5510. Industrial landfill, biological methods of disposal, land disposal techniques, ocean disposal techniques, disposal of flue gas cleaning wastes. (Y)

5590 (HWM 5590) Biological Methods of Waste Disposal. Cr. 2

Prereq: CHE 5510. Biological treatment of industrial wastes, including unit operations, solids handling and activated carbon processes. (S)

5610 Highway Design. Cr. 3

Prereq: C E 4640. Application of standards, theory and practice in design of streets and highways. Design of streets and highways including cross section elements, shoulder and roadside features. Pavement design and rehabilitation work. (Y)

5810 Legal Aspects of Engineering Problems. Cr. 3

Open only to seniors and graduate students. Business of contracting, construction, liabilities of owner, architect, engineer and contractor. Rights in land, boundaries and foundations. Case studies. Material fee as indicated in the Schedule of Classes. (F)

5995 Special Topics in Civil Engineering I. Cr. 1-4

Prereq: consent of chairperson. Student computer account required. Topics to be announced in Schedule of Classes. (I)

6010 Construction Organization and Management. Cr. 3

Prereq: C E 4010 or consent of instructor. An introduction to the organization and management of design and construction firms. Organizational and managerial theories. Problems of organization management, operation and control of engineering systems, case studies. Material fee as indicated in the Schedule of Classes. (W)

6020 Construction Safety. Cr. 3

Prereq: C E 4010 or I E 5560. Safety problems in construction industry and their technical and managerial solutions. Accident and hazard analysis and control techniques; safety program design and implementation.

6050 Construction Estimating. Cr. 3

Prereq: C E 4850. Estimating construction costs of engineering projects including materials, manhours, equipment and overhead. Emphasis on construction equipment, including productivity and planning. Bidding and bid documents. (B)

6130 Engineering Hydraulics. Cr. 3

Prereq: C E 3250 or equiv. Student computer account required. Fluid mechanics applied to engineering problems. Dimensional analysis and similitude. Open channel flow, non-uniform flow and hydraulic structures. (W)

6150 Hydrology. Cr. 3

Prereq: C E 6130. Student computer account required. Precipitation and runoff, probability applications to hydrological data. Stream flow and storage reservoirs; flood control and flood routing; drainage; ground water and well flows; evaporation and water budgets. (B)

6190 Ground Water. Cr. 4

Prereq: C E 3250. Historical background, aquifers and aquitards, saturated and unsaturated flow, sources of ground water contamination, artificial recharge of ground water, development of ground water basins and efficient use of ground water resources. (Y)

6270 Environmental Management and Sustainable Development. (HWM 6270) Cr. 3

Prereq: C E 4220. Review and application of techniques and practices. (Y)

6330 Advanced Structural Analysis I. Cr. 3

Prereq: C E 4310. Student computer account required. Effect of axial loads on stiffness of flexural members. Buckling of trusses and rigid frames. Introduction to plastic analysis. Matrix method of analysis. Computer applications. (F)

6340 Bridge Analysis and Design. Cr. 3

Prereq: C E 4350. Structural engineering lecture course: description and demonstration of principles, procedures and techniques used in analysis and design of modern structural steel and prestressed concrete highway bridges. (B)

6370 Reinforced Concrete II. Cr. 3

Prereq: C E 4360. Theory and design of two-way slabs, footings, retaining walls, shear walls, and composite beams using ultimate strength design. (W)

6380 Prestressed Concrete. Cr. 3

Prereq: C E 4360. Theory and design of pretensioned and post-tensioned concrete members. (F)

6410 Structural Steel Design II. Cr. 3

Prereq: C E 4350. Student computer account required. Advanced topics in steel design, connections, thin walled built up members, thin

walled cold rolled members, flexural buildings, lateral torsional buckling, steel design project. (W)

6450 Nondestructive Testing of Structures. Cr. 3

Prereq: C E 4350, 4360, 4450. Nondestructive testing methods applicable to appraisal of structures and materials; visual, optical, holographic imaging, magnetic flux, eddy current, acoustic, ultrasonic, and radiographic techniques. (Y)

6520 Earth Dams. Cr. 3

Prereq: C E 5520. Student computer account required. Design, analysis and construction of earth dams, rockfill dams and sheetpile cofferdams; control of seepage and piping; cracking of earth dams; case histories. (I)

6550 Geosynthetics. Cr. 4

Prereq: C E 4510. Fundamental principles for testing, design, and construction of geosynthetics in civil engineering applications. (B)

6580 Landfill Design. Cr. 4

Prereq: C E 4510. Properties and test methods for natural and synthetic materials used in landfills; analysis of chemical interactions, flow mechanisms, stability and settlement for the design of landfill components. (Y)

6660 Pavement Management Systems: Principles and Practices Cr. 3

Prereq: C E 4600, 4640. Principles and practices used in pavement management systems, including pavement serviceability, pavement design, priority programming. (Y)

7010 Civil Engineering Decision Processes. Cr. 3

Prereq: I E 3220. Student computer account required. Application of probability, statistics and decision processes to civil engineering problems. (B)

7100 Water Resources Systems Analysis and Economics. Cr. 4

Prereq: C E 4220 or consent of instructor. Student computer account required. Water resource and planning. Application of probability and operation research techniques for planning of water resources including engineering analysis, economic objective and water resource principles. (B)

7190 Advanced Groundwater. Cr. 3

Prereq: C E 6190. Analytical and numerical models of groundwater flow and contaminant transport. Advanced theory of groundwater hydraulics. (Y)

7200 Environmental Engineering Operations and Processes. Cr. 4

Prereq: C E 4220. Theoretical aspects and applications of various operations and processes of importance in pollution and control including sedimentation, flotation, coagulation, softening and filtration through granular media. Material fee as indicated in the Schedule of Classes. (B)

7220 Industrial Waste Treatment. Cr. 4

Prereq: C E 7200. A study of the sources of specific industrial waste waters and their treatability by physical, chemical and biological processes, including the industries' obligation in the prevention of stream pollution. Problems and solutions involved in combined treatment of industrial and domestic waste waters. Material fee as indicated in the Schedule of Classes. (B)

7260 Stream Sanitation. Cr. 3

Prereq: C E 5250 and 7210. Student computer account required. The study of natural watercourses in relation to natural and man-made pollution. Techniques of evaluating the self-purification capacity of streams and the determination of permissible waste water effluent levels. (I)

7300 Structural Mechanics. Cr. 3

Prereq. or coreq: C E 6330. Student computer account required. Theory of bending and torsion of bars, beams on elastic foundations. Introduction to theory of thin plates. (F)

7350 Behavior of Structures Under Dynamic Loads. Cr. 3

Prereq: C E 5350 or consent of instructor. Student computer account required. Dynamic analysis of civil engineering structures, lumped-mass and distributed mass systems, linear and non-linear systems, approximate methods of analysis, computer applications. (B)

7370 Advanced Finite Elements for Structural Engineers. Cr. 3

Prereq: C E 5370. Student computer account required. Advanced topics in finite element analysis; stability analysis and vibrations of structural systems. Modelling of shell structures, dynamic analysis, nonlinear structural problems. (W)

7410 Assessment and Upgrade of Structures. Cr. 3

Prereq: C E 6370, 6410. Methods of determining deficiencies of existing structures, experimental assessment/appraisal of structures, analytical computer assessment/appraisal of existing structures, upgrade methodology of existing structures. (Y)

7510 Soil-Structure Interaction. Cr. 3

Prereq: C E 5520. Student computer account required. Numerical analysis of effects of interaction between structure and surrounding soil. Static and dynamic responses of pile foundations; dynamic soil-structure interaction; settlement analyses. (B)

7520 Soil Dynamics. Cr. 4

Prereq: C E 4510 or consent of instructor. Student computer account required. Fundamental theories and numerical techniques for vibration analysis and their application to solution of dynamic and earthquake problems in geotechnical engineering. (B)

7530 Advanced Soil Mechanics. Cr. 4

Prereq: C E 4510 or consent of instructor. Stress-strain and volume-change behavior of sands and clays for both drained and undrained loading conditions, to gain insight in mechanical behavior of foundation soils. Material fee as indicated in the Schedule of Classes. (B)

7540 Soil Plasticity. Cr. 3

Prereq: C E 5510, 5520, or consent of instructor. Fundamental theories of plasticity, various plasticity models in geotechnical engineering, numerical implementation of plasticity models, and lower- and upper-bound solutions in geotechnical engineering. (Y)

7600 Highway Safety Analysis. Cr. 3

Prereq: C E 4640. Safety aspects of highways; emphasis on design, implementation and evaluation of highway safety measures. Material fee as indicated in the Schedule of Classes. (B)

7620 Traffic Engineering Control and Operation. Cr. 3

Prereq: C E 7610. Traffic control theory and application. Traffic regulation rationales, laws and ordinances; speed control, intersection control, flow control, parking control. Evaluation techniques, investigations, design and application of control devices, statistical analysis, administration. Material fee as indicated in the Schedule of Classes. (Y)

7630 Urban Transportation Planning. Cr. 3

Prereq: C E 4600. Analyses of urban transportation characteristics and studies. System demand and origin-destination study techniques, land use, parking, demand projections. System capabilities; use studies; transit surveys, terminals, economics. System selection, streets and freeways, transit systems, administration, city planning, finance. Material fee as indicated in the Schedule of Classes. (F)

7640 Economic Analysis in Transportation Systems Planning. (I E 7640) Cr. 3

Prereq: C E 4850 or I E 5870. Application of engineering economy and price theory in optimization of transportation system designs functioning primarily in an urban environment; analysis of congestion costs, externalities, primary and secondary costs and benefits, and peak period pricing, case studies. Material fee as indicated in the Schedule of Classes. (Y)

7650 Mass Transportation Systems. Cr. 3

Prereq: C E 7630. Student computer account required. Design and operation of alternate systems of mass transportation. Rail rapid

transit, bus systems, other systems; service capabilities, operating characteristics, public demand, advantages and disadvantages, economics, system coordination. (B)

7660 Highway Risk Management System. Cr. 3

Prereq: C E 7600. Methods and procedures in highway risk management system analysis; implementation and evaluation. (Y)

7670 Advanced Traffic Signal Systems. Cr. 3

Prereq: C E 7620. Analysis and design of traffic signal systems. System hardware, computer analysis of signal systems, and conceptual design of microcomputer-based systems. (B)

7990 Directed Study. Cr. 1-4 (Max. 6)

Prereq: written consent of adviser, chairperson and engineering graduate officer for master's students; written consent of adviser, chairperson and Dean of Graduate Studies for Ph.D. students. (T)

7995 Special Topics in Civil Engineering II. Cr. 1-4

Prereq: consent of instructor. Student computer account required. A consideration of special subject matter in civil engineering. Topics to be announced in Schedule of Classes. (I)

7996 Research. Cr. 1-4 (Max. 6)

Prereq: consent of adviser and chairperson. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of adviser. (T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16

Prereq: consent of doctoral adviser. Offered for S and U grades only. Maximum of ten credits may be elected before doctoral candidacy is obtained. (T)

ELECTRICAL and COMPUTER ENGINEERING

Office: 3100 Engineering Building; 577-3920

Chairperson: Franklin H. Westervelt

Professors

R. Arrathoon (Emeritus), R. D. Barnard (Emeritus), F. E. Brammer (Emeritus), M.H. Hassoun, J. Meisel, V. Mitin, A.W. Olbrot, M. B. Scherba (Emeritus), M. P. Shaw (Emeritus), D. J. Silversmith, H. Singh, F. Westervelt

Associate Professors

G.W. Auner, J. S. Bedi, R. F. Erlandson, F. Lin, S. Mahmud, P. Siy, L. Y. Wang, J. R. Woodyard, Y. Zhao

Assistant Professors

I. Avrvisky, V. Chaudhary, G. Edjlali, L.J. Schwiebert, C.Z. Xu

Adjunct Professors

G.R. Gerhart, R. Pryor, A.R. Spitzer, P. Watta

Adjunct Faculty — Part-Time

M. Berri, S. Farinwata, N. Hachem, Y.H. Lee, A. Makki, I. Makki, S. Qusar, S. Salem, A. Youssef

Graduate Degrees

MASTER OF SCIENCE in Computer Engineering

MASTER OF SCIENCE in Electrical Engineering

DOCTOR OF PHILOSOPHY with a major in Computer Engineering

DOCTOR OF PHILOSOPHY with a major in Electrical Engineering

In the field of electrical and computer engineering, basic physical and mathematical principles are utilized to develop new devices, technologies, and techniques of constantly broadening application. Examples are the development, stemming from advances in solid-state and integrated circuit technology, of smaller, less expensive and more powerful large computers, parallel processing systems, minicomputers, microprocessors, and other data processors, and their utilization in a growing range of system applications; the growing use of data communication and sophisticated satellite communication networks; the discovery of lasers and the development of fiber optic and integrated optical devices for various applications ranging from optical data processing to communication; development of sophisticated control techniques, remote sensors and transducers for advanced automation and electric power systems; the application of electronics to health care and diagnostics (such as noninvasive measurements and ultrasound imaging); and energy conversion devices such as solar cells.

Part-time study in courses offered in the evening allows professionals working in local industry to pursue graduate degrees concurrently with their employment. A number of graduate courses are offered at off-campus locations and may be taken on a credit or non-credit basis.

Master of Science Degrees in Computer Engineering and Electrical Engineering

Admission to these programs is contingent upon admission to the Graduate School; for requirements, see page 16.

Students from a wide variety of undergraduate programs not specifically related to this discipline may be admitted into the master's program after completing a sequence of undergraduate courses



designed to prepare them for the graduate curriculum. (See Department for recommendations.)

DEGREE REQUIREMENTS: In the areas of electrical engineering and computer engineering the Master of Science degree is offered by this department under the following options:

Plan A: *Thirty-two credits including an eight credit thesis.*

Plan C: *Thirty-two credits of course work.*

For either plan, students must complete one of the following sets of core requirements related to a specialization:

Master of Science in Computer Engineering: General, Computer Architecture and Digital Design, Parallel and Distributed Systems, Machine Intelligence and Applications.

Master of Science in Electrical Engineering: Biomedical Systems, Communications and Circuits, Control Systems, Solid State Devices, Power Systems, Optical Engineering.

For course requirements in the various core areas, students should consult with their department advisers.

Doctor of Philosophy Degrees with Majors in Computer Engineering and Electrical Engineering

Admission to these programs is contingent upon admission to the Graduate School; for requirements, see page 16. Applicants must have an overall honor point average of 3.6 in a Master of Science degree program. It is possible for outstanding students to enter the Ph.D program with only a Bachelor of Science degree.

DEGREE REQUIREMENTS: Candidates for the doctoral degree must complete ninety credits beyond the bachelor's degree, including thirty credits of dissertation direction. A minimum of thirty credits must be earned in courses numbered 7000 and above. Credits accrued in a Master of Science degree program may be applied as part of the doctoral requirements. A written Ph.D preliminary examination should be taken within the first two semesters of residency as a Ph.D. applicant. A written and oral Ph.D. qualifying examination to attain doctoral candidacy is given after completion of most of the course work at a time recommended by the candidate's adviser. No more than ten dissertation credits may be elected before doctoral candidacy is attained. (All graduate students are required to register for dissertation credits for any semester in which they utilize campus facilities or are under faculty supervision.) Students should consult page 27 for Graduate School regulations governing doctoral study.

GRADUATE COURSES (ECE)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

5020 (CSC 6620) Matrix Computation I. Cr. 4 (LCT: 4)

Prereq: CSC 2110, CSC 2060 or equiv.; and CHE 3040 for engineering students. Background matrix algebra; linear system sensitivity; basic transformations; Gaussian elimination; symmetric systems; positive definite systems; Householder method for least squares problems; unsymmetric eigenvalue problems; the QR algorithm. (I)

5040 Numerical Methods for Engineers. (CHE 5040) Cr. 4 (LCT: 4)

Prereq: MAT 2150, CHE 3040. Student computer account required. Solution of ordinary and partial differential equations of engineering by modern numerical methods, including digital computation aspects. (B)

5100 (BME 5100) Engineering Physiology. (CHE 5100) (I E 5100) (M E 5100) Cr. 4 (LCT: 4)

Prereq: ECE 4330 or M E 3400. The basic principles of human physiology presented from the engineering viewpoint. Bodily functions, their regulation and control discussed in quantitative terms and illustrated by simple mathematical models when feasible. (I)

5120 Artificial Neural Systems I. Cr. 4

Prereq: ECE 4330 or M E 5000. Introduction to theory, architecture and application of artificial neural systems. Supervised, unsupervised and reinforcement learning in single- and multiple-layer neural networks. Associative neural memory recording and retrieval dynamics. Self-organizing maps. Learning capacity and generalization. Hardware implementations. (Y)

5170 (BME 5570) Design of Human Rehabilitation Systems. (I E 5170) (M E 5170) Cr. 4

Prereq: M E 4450; senior standing. Design, fabrication and testing of customized hardware to aid handicapped patients. (W)

5310 Active Filters. Cr. 4 (LCT: 4)

Prereq: ECE 4330, 4340. Introduction to active filter design. Basic concepts in filter theory. Op. Amp. and applications. Active-RC filter synthesis. Multiloop feedback design. Computer-aided design and sensitivity optimization. (Y)

5360 Computer-Aided System Analysis and Design. Cr. 4 (LCT: 4)

Prereq: ECE 4330, 4340. Student computer account required. Generation of nodal and mesh equations using computers, graph theory, advanced formulation methods, numerical solution of the network equation in the frequency and time domain, computer generation of the sensitivities, and introduction to circuit optimization. (Y)

5370 Mechatronic System Design I. Cr. 4

Prereq: ECE 4330 and consent of instructor. Students work in small groups to design and build "smart" devices or systems. These products will integrate sensors, digital logic and/or microprocessors, and user interfacing. The products will be requested by "clients" and the student will work as part of a cross-disciplinary team. (F)

5380 Mechatronic System Design II. Cr. 4

Prereq: consent of instructor. Students work in small groups to design and build "smart" devices or systems. These products will integrate sensors, digital logic and/or microprocessors, and user interfacing. The products will be requested by a "client" and the students will work as part of a cross-disciplinary team. (F)

5410 Power Electronics and Control. Cr. 4 (LCT: 3)

Prereq: ECE 4330. Control of electric energy using solid-state devices, diodes, thyristors, triacs; mathematical analysis of circuits containing these devices; power converters and control; solid-state drives for motor control. (I)

5420 Electromechanical Energy Conversion. Cr. 4 (LCT: 4)

Prereq: ECE 4330 and 4800. Formulation of equilibrium equations for electromechanical systems in both classical and state-space form, using Lagrange's equation. Linear incremental concepts, general numerical solutions. (I)

5430 Electric Energy Systems Engineering. Cr. 4 (LCT: 4)

Prereq: ECE 4330. Student computer account required. Transmission capacity, load characteristics, power frequency control. Energy

system component analysis and modeling. Steady-state analysis, load-flow problem and algorithms, optimal dispatch. Transient stability by simulation and direct methods. (I)

5440 Computer-Controlled Systems. Cr. 4

Prereq: ECE 4470 or CHE 4600 or M E 4400. Introduction to z-transform and sampling theory. Digital controller design using both transfer function techniques and state space methods. Implementation aspects of computer-controlled systems. (Y)

5460 Stochastic Processes in Engineering. Cr. 4

Prereq: I E 3220; and ECE 4330 or M E 5000. Elements of probability theory. Random variables. Random sequences. Convergence concepts, limit theorems and sampling. Gaussain processes and Brownian motion. Martingales and Markov Processes. Frequency-domain analysis. White noise representations. Sampling Theorem. Wiener Filtering. Recursive Filtering. Linear and nonlinear differential systems. Likelihood ratios and applications. (B)

5470 Control Systems II. Cr. 4 (LCT: 4)

Prereq: ECE 4470; prereq. or coreq: 4480. Student computer account required. Continuation of cascade and feedback compensation techniques using root-locus and frequency-response methods, describing functions and phase-plane techniques; introduction to the state-space formulation, Liapunov's direct method, pole-placement using state-variable feedback. (Y)

5480 Power Electronics Laboratory. Cr. 2

Prereq. or coreq: ECE 5410. Laboratory study of basic power electronic circuits for control of flow and mode of electric energy. Digital instrumentation and correlation of theoretical models with observed data. Applications include basic motor drive controllers. Material fee as indicated in the Schedule of Classes. (Y)

5500 Current Electronic and Photonic Materials Technology. Cr. 4

Prereq: ECE 4570, MSE 1300, or consent of instructor. Introduction to new and innovative technologies for electronic and photonic materials synthesis and processing. New semiconducting materials. Growth of single crystals of semiconducting materials. Semiconducting material processing techniques. (F)

5510 Electronic and Photonic Materials Laboratory. Cr. 2

Prereq: ECE 5500 and written consent of instructor. Laboratory experience in state-of-the-art techniques for electronic and photonic materials synthesis, processing, and characterization. (W)

5550 Solid-State Electronics I. Cr. 4 (LCT: 4)

Prereq: ECE 4570, 4800. Physical basis for the energy band structure of solids with particular emphasis on semiconductors and insulators. Basic principles associated with solid-state devices. Extrinsic and intrinsic semiconductors. Behavior of P-N junctions, bi-polar and field-effect transistors. (Y)

5600 Design of Computer Languages. Cr. 4 (LCT: 4)

Prereq: ECE 4600, 4680. Student computer account required. Statement structure, algorithmic structure, as well as list processing, string and array manipulation; and special topics in programming languages. (Y)

5610 Introduction to Parallel and Distributed Systems. Cr. 4

Prereq: ECE 4680. Fundamentals of parallels and distributed systems. Programming experience in both computing environments. (F,W)

5620 Mini- and Microcomputers. Cr. 4 (LCT: 4)

Prereq: ECE 4600 and 4680. Student computer account required. Treatment of the architecture and organization of microcomputers. The configuration, application and programming of several microcomputers. Design and applications of minicomputers. Processor organization, instruction set selection, memory structure and addressing methods, controller designs, hardware arithmetic functions, I/O interface, peripheral devices, applications and required software systems. Personal computers and their applications. (T)

5630 Microcomputer Laboratory. Cr. 2 (LCT: 1;LAB: 3)

Prereq: ECE 4340, 4600. Study of interrupt structures, interfacing with teletypes, floppy disks, cassettes, keyboards and displays, testing and evaluation of microprocessors. Design and development of complete digital systems using a microprocessor development system. Material fee as indicated in the Schedule of Classes. (T)

5640 (CSC 6280) Advanced Operating Systems. Cr. 4

Prereq: CSC 4420 or graduate standing. Design issues in advanced operating systems; distributed real-time operating systems; discussion of case studies such as UNIX, MACH, and AMOEBA. (I)

5650 Network Programming for Engineers. Cr. 4

Prereq: ECE 5600 or CSC 5050 or consent of instructor; junior standing or above. Fundamentals of ethernet protocols, shell programming, network programming using sockets, remote command execution, other topics. Programming assignments give students hands-on experience. (W)

5680 Switching Circuits. Cr. 4 (LCT: 4)

Prereq: ECE 4610. Threshold, symmetric functions, and iterative networks. Multivalued and fuzzy logic. Complex sequential machine realization. State equivalence and minimization. Automata and linear machines. State identification and fault detection. (T)

5700 Analog and Digital Communication Circuits. Cr. 4 (LCT: 4)

Prereq: ECE 4570 and 4700. Student computer account required. Amplitude, frequency, pulse modulation and digital modulation. Detection, operational amplifiers; introduction to linear integrated circuits. Digital modulation. (I)

5730 Communications Laboratory. Cr. 2 (LAB: 2)

Prereq: ECE 4700; coreq: 5700. Analog and digital modulation techniques, pulse code modulation, delta modulation, FSK, PSK and ASK, data communication, signal processing. Material fee as indicated in the Schedule of Classes. (Y)

5770 Digital Signal Processing. Cr. 4 (LCT: 4)

Prereq: ECE 4700. Student computer account required. Analysis of discrete signals and systems. Applications to digital filtering, active filters, digital communication and encoding. (Y)

5870 Optical Communication Networks. Cr. 4 (LCT: 4)

Prereq: ECE 4700; 4850. Laser and detectors; modulation and demodulation; optical transmitters and receivers; optical filters; optical amplifiers; architecture and network control; multiaccess networks; FDDI networks, SONET/SDH, ATM, system performance. (Y)

5990 Directed Study. Cr. 1-4 (Max. 4) (IND: 1)

Prereq: admission to M.S. program, written approval of proposed study outline by adviser and chairperson prior to registration. Supervised study and instruction in the field selected by the student. (T)

5995 Special Topics in Electrical and Computer Engineering I. Cr. 1-4 (LCT: 1)

Prereq: written consent of instructor. Maximum of eight credits in Special Topics may be elected in any one degree program. Special subject matter in electrical and computer engineering. Topics to be announced in Schedule of Classes. (T)

6100 Enabling Technology. (OT 6620) Cr. 4

Prereq: consent of instructor. Principles of application of enabling technology: across life stages, for differing ethnic and cultural backgrounds, for individuals with varying functional abilities. (Y)

6180 (BME 6480) Biomedical Instrumentation. (I E 6180) (M E 6180) Cr. 4 (LCT: 4)

Prereq: ECE 3300, BME 5010 or PSL 5550, and BME 5020. Engineering principles of physiological measurements, signal conditioning equipment, amplifiers, recorders and transducers. Recent advances in instrumentation. (I)

6550 Solid State Electronics II. Cr. 4 (LCT: 4)

Prereq: ECE 5550. Advanced concepts on the electronic properties and fabrication of solid state devices. Semiconductor surface devices and their technology. Charge-coupled devices and inte-

grated circuit configurations. Solid state devices in the microwave region. Avalanche diodes. Magnetism and magnetic bubbles. Solar cells and optoelectronic devices. (Y)

6600 Engineering Software Design. Cr. 4 (LCT: 4)

Prereq: CSC 3700 or ECE 5620. Software engineering principles developed and integrated to identify, modify, extend, and apply computational and information-processing methods in a variety of systems applications. Structural analysis, design and programming is assumed and integrated into an engineering systems design context. (Y)

6640 Database Machines. Cr. 4 (LCT: 4)

Prereq: ECE 5620. Theory, design, and applications of database machines. Hardware implementation of database functions; search, sort, relation operations, and the like. Example of early and current machines: RAP, CASSM, DBC, DIRECT, RDBM, SABRE, VERSO. (Y)

6660 Design of Digital Systems. Cr. 4 (LCT: 4)

Prereq: ECE 4610, 5620. Student computer account required. Introduction to computer hardware description languages. Computer design; data flow, ALU, control section, I/O section. Communication interfaces; handshaking. Special purpose hardware design. (T)

6690 Fuzzy Systems and Applications. Cr. 4

Prereq: I E 3220, CHE 3040. Fuzzy set theory, fuzzy measures, relations and graphs, extension principle, approximate reasoning, fuzzy neurosystems and applications in controller design, expert systems, robotics, and pattern recognition. (Y)

7030 Mathematical Methods in Engineering I. Cr. 4

Prereq: ECE 4330. Student computer account required. Introduction to functional analysis. Banach and Hilbert spaces. Fixed-point and projection theorem techniques. Approximation, estimation, and optimization theory. Applications to numerical and error analysis, nonlinear equations, and modeling system identification. (Y)

7100 (M E 7100) Mathematical Modeling in Bioengineering. (I E 7100) Cr. 4 (LCT: 4)

Prereq: M E 5100 or ECE 5100. Mathematical models that simulate physiological or anatomical function. Models of the nervous and vascular systems, models for impact acceleration and current topics in bioengineering. (I)

7120 Artificial Neural Systems II. Cr. 4

Prereq: ECE 5120. Select current topics. Capabilities of neural networks to carry general computations. Learning theory and information storage in ANNs. Generalization of a system's map from examples. Collective computations in search and optimization. Statistical neurodynamics. Applications to computationally complex problems. (Y)

7160 (M E 7160) Biomechanics II. (I E 7160) Cr. 4 (LCT: 4)

Prereq: M E 5160. Biomechanical response of bone, muscle, skin, artery and other soft tissues to load or deformation. Structural and physiological response of body systems to impact and steady state vibration. Biofluid mechanics of blood flow. Gait analysis.

7420 (M E 7590) Nonlinear Control Systems. Cr. 4

Prereq: M E 5550 or ECE 5470. Review of nonlinear control problems in industries, analysis of nonlinear systems using phase plane, Lyapunov describing function methods, design of nonlinear controllers, applications to the control of robots, aircrafts and automobiles. (W)

7430 Control of Discrete Event Systems. Cr. 4

Prereq: ECE 5470 or M E 5550. Automation model of discrete event systems; logical model of processes; permissive and forceful control; communicating sequential processes (CSP); calculus of communicating systems (CCS); timed discrete event systems; performance analysis. (B)

7440 Dynamic Systems and Optimal Control. Cr. 4 (LCT: 4)

Prereq: ECE 5470. Formulation of optimal control problems. Pontryagin's maximum principle and necessary conditions for optimality,

with applications. Dynamic programming; Hamilton-Jacobi equation; optimal feedback control; stochastic systems. (I)

7450 System Identification and Adaptive Control. Cr. 4

Prereq: ECE 5470 or 7470 or M E 5550. Problem formulations for system identification and adaptive control. Identification for nonparametric models and parametric models. Online identification controls. Design of self-tuning and model reference adaptive control schemes. Stability, robustness and performance analysis of adaptive control systems. (Y)

7460 Stochastic Control. Cr. 4

Prereq: ECE 5460; and 5470 or M E 5550. Elements of stochastic processes; properties of linear systems with stochastic inputs; control of Markov chain model; dynamic programming with partial observation; the linear quadratic Gaussian (LOG) problem and separation theorem; prediction and filtering theory; the Kalman filter and the Raccati-equation. (T)

7480 Advanced Control System Design. Cr. 4

Prereq: ECE 5470 or M E 5550. Analysis of robust stability under structured and unstructured uncertainties. Robust stabilization using coprime factorization and Youla parametrization. Analysis and design for robust performance. H-infinity optimization and its extension to slowly time-varying systems. (Y)

7530 Introduction to VLSI Systems. Cr. 4

Prereq: ECE 6660. Student computer account required. Survey of Very Large Scale Integrated Circuit components and design procedures. MOS fabrication, nMOS gates, circuit architecture, device design, manufacturing and interfacing techniques. (Y)

7540 Advanced Computational Electronics. Cr. 4

Prereq: ECE 5040, 5550 or consent of instructor. Computational Techniques and mathematical description of advanced semiconductor devices. Different approaches to semiconductor device simulation and appropriate numerical methods. Laboratory experience. Development of student projects. Special topics. (Y)

7550 Advanced Solid State Electronics I. Cr. 4 (LCT: 4)

Prereq: ECE 5550 or 6550. Review of solid state theories. Electrical conductivity, relaxation times and the Boltzmann equation. Mobility, Hall effect, contacts and application to negative differential conductivity devices such as the Gunn diode. (Y)

7610 Advanced Parallel and Distributed Systems. Cr. 4 (LCT: 4)

Prereq: ECE 5610. Review of parallel processing systems-models of parallel computation, mutual exclusion, parallel algorithms, parallel architectures. Problems in programming parallel systems. Parallel and distributed computing languages and features. Interconnection networks, wormhole routing, distributed load balancing, mapping strategies, problem decomposition, subcube allocation. Parallelizing compilers; other topics. (W)

7620 Real-Time Languages. Cr. 4

Prereq: ECE 6600. Study of computer languages such as Ada, Modula and/or Pearl, designed for the treatment of engineering applications of real-time computer processing systems. (Y)

7660 Parallel Processing Hardware. Cr. 4 (LCT: 4)

Prereq: ECE 6660. Student computer account required. Review of parallel processing system classifications: SIMD, MISD, and MIMD. Review of classical and contemporary architectures for realization of parallel computer hardware systems. Design issues in interaction of processor, memory, and inter-processor communication network design for high performance parallel processing systems. Influence of VLSI on parallel system designs. Programmable hardware: PROMs, PLAs, PGAs, PLCAs and other technologies. Micro-code and nano-code hardware. (Y)

7670 Pattern Recognition. Cr. 4 (LCT: 4)

Prereq: ECE 7030. Student computer account required. Statistical methods in pattern recognition. Estimation, feature extraction and classification. Applications of pattern recognition techniques. (Y)

7680 Robotics and Machine Intelligence. Cr. 4

Prereq: ECE 7030. Statistical methods in pattern recognition. Estimation, feature extraction and classification. Applications of pattern recognition techniques. (Y)

7690 Neural Fuzzy Systems. Cr. 4

Prereq: ECE 6690, 5120, or consent of instructor. Combination of fuzzy and neural networks concepts used in design of pattern recognition systems, speech recognition systems, and controllers. (Y)

7700 Statistical Communication Theory. Cr. 4 (LCT: 4)

Prereq: ECE 5700. Decision theory, binary decisions with single and multiple observations, signals in additive Gaussian noise, sequential decision theory, estimation theory, Kalman filtering. (Y)

7830 Nonlinear Optics. Cr. 4

Prereq: ECE 5550, 5870. Wave theory, wave-material interactions, harmonic generations, stimulated scattering, wave mixing and phase conjugation, optical switching and logic gates, quantum well structures, nonlinear fiber optics and applications. (Y)

7850 Fiber and Integrated Optics. Cr. 4

Prereq: ECE 5870. Student computer account required. Discussion of geometric optics and ray propagation in optical fibers. Extension to physical optics and Maxwell's equations. Analysis of mode coupling and graded index fibers. Integrated optical waveguides: dielectric slabs and integrated optic networks. Coupling phenomenon, light sources, and detectors. Photon statistics and their relation to bit error rates. Power budgets, fan-in, and fan-out as applied to data link design. (Y)

7870 Optical Information Processing. Cr. 4

Prereq: ECE 5870. Linear system theory, Fourier transformation, diffraction theory, Fourier transform properties of lenses and optical information processing. Coherent and incoherent optical processing: techniques and applications; interface devices and memory materials; holography. (Y)

7990 Directed Study. Cr. 1-8 (Max. 12) (IND: 1)

Prereq: written consent of adviser, chairperson and graduate officer for master's students; written consent of adviser, chairperson and Dean of Graduate Studies for Ph.D. students. Outline of proposed study and petition must be submitted to graduate committee in advance. Outline of proposed study and petition must be submitted to graduate committee in advance of registration. Supervised study and instruction in an advanced topic. (T)

7995 Special Topics in Electrical and Computer Engineering II. Cr. 1-4 (Max. 12) (LCT: 1)

Prereq: written consent of instructor. Maximum 12 credits in Special Topics may be elected in any one degree program. Student computer account required. A consideration of special subject matter in electrical and computer engineering. Topics to be announced in Schedule of Classes. (T)

7996 Research. Cr. 1-8 (Max. 8)

Prereq: written consent of adviser and chairperson. Design, investigation and experimental work on some phase of electrical and computer engineering. Written report required. (T)

7999 Master's Essay Direction. Cr. 2 (IND: 2)

Prereq: consent of adviser. (T)

8120 Advanced Artificial Neural Systems. Cr. 4

Prereq: ECE 7120; coreq: 7030. Current research topics in artificial neural systems; associative memory, self-organization, combinatorial optimization, data encoding, architecture, learning algorithms, network dynamics and performance, neurobiologic connections, and engineering applications. (B)

8550 Advanced Solid State Electronics II. Cr. 4 (LCT: 4)

Prereq: ECE 7550. Current topics in solid state phenomena, devices, and technology such as heterojunctions, metal-semiconductor barriers and junctions, photoemissive cathodes and amorphous devices used in electrical and optical memory units and solar cells. (I)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.) (IND: 1)

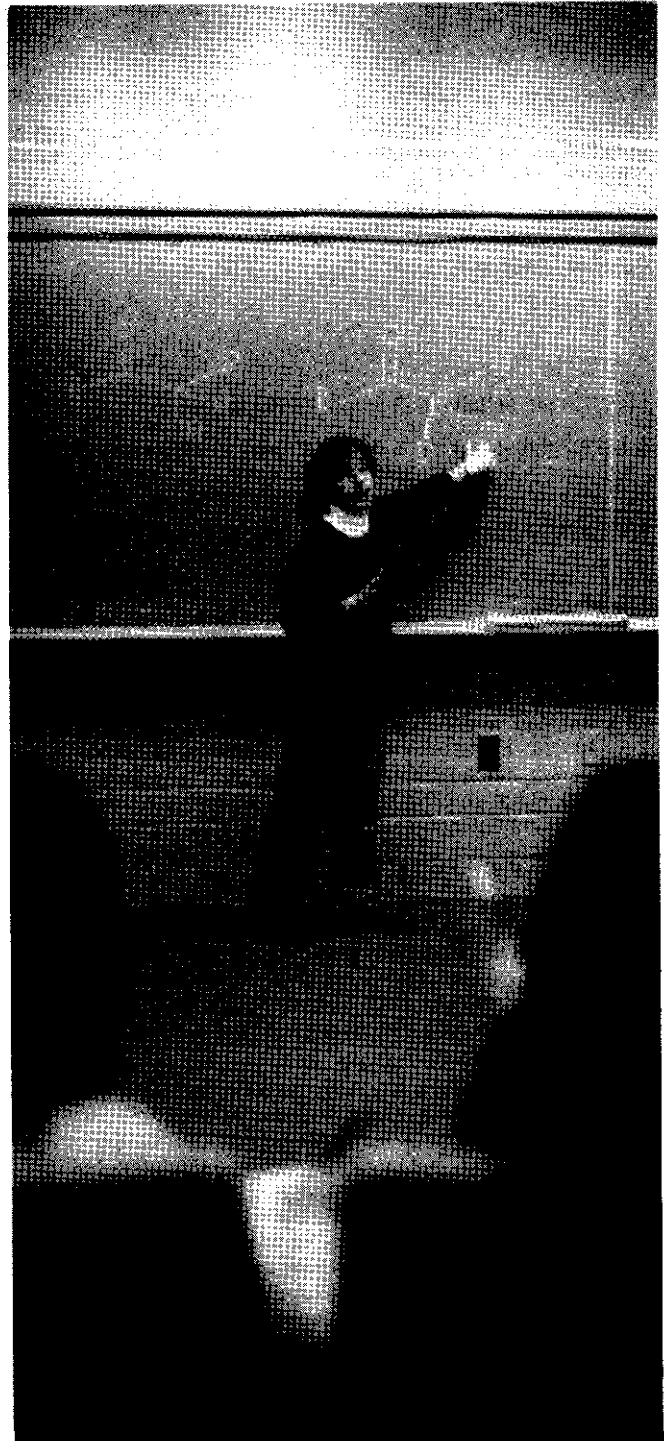
Prereq: written consent of graduate adviser. (T)

9997 Doctoral Seminar. Cr. 1-4 (Max. 4)

Prereq: written consent of doctoral adviser; coreq: ECE 9999. (T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16 (30 req.) (IND: 1)

Prereq: written consent of doctoral adviser. No more than seven credits may be elected before doctoral candidacy is obtained. Offered for S and U grades only. (T)



INDUSTRIAL and MANUFACTURING ENGINEERING

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Kenneth R. Chelst, Donald R. Falkenburg, H. Allan Knappenberger (Emeritus), Frank E. Plonka, Nanua Singh

Associate Professors

Herbert G. Ludwig (Emeritus), Olugbenga O. Mejabi, Gary S. Wasserman, Kai Yang

Assistant Professors

R. Darin Ellis, Jeffrey Lockledge, Leslie Monplaisir

Adjunct Professor

Marietta Baba

Graduate Degrees

MASTER OF SCIENCE in Industrial Engineering

MASTER OF SCIENCE in Manufacturing Engineering

MASTER OF SCIENCE in Operations Research

MASTER OF SCIENCE in Engineering Management

DOCTOR OF PHILOSOPHY with a major in Industrial Engineering

Traditionally, the manufacturing engineer was responsible for developing the process capability to realize the output of design engineering. Today, however, the boundary between design and manufacturing engineering is becoming blurred. Both groups work together in teams to assure the soundness of design and producibility of product. The manufacturing engineer must have an understanding of the design process, but the special expertise which is brought by the manufacturing engineer is the knowledge and understanding of the production process. Today's production is computer-based and provides flexibility through numerical control. The manufacturing engineer is responsible for designing and implementing the cells and production lines which become the basic units of manufacture. Increasingly, such production units are becoming parts of an integrated factory system, and are not simply islands of automation. The manufacturing engineer must understand the multi-layered control architecture of the integrated factory, and the computer-based technologies which enable it.

The industrial engineer is a broadly-trained integration engineer, concerned with enabling complex systems to function effectively. Managing the inventory of a production facility, for example, involves issues of production and stocking policy, manufacturing equipment, human resources, customer demand, and supplier relationships. The industrial engineer must understand the interaction of the components of a system, and coordinate the flow of materials and information to effectively manage the operation. The industrial engineer plays an important role in defining information needs and developing strategies for decision making based on incomplete knowledge. However, the skills of the industrial engineer have much greater application than to traditional production environments. In a growing service sector of the economy including health care delivery, public safety, air transportation, and banking, for example, issues of resource management, scheduling, quality of service, and systems design are important.

The Department maintains laboratories in systems simulation, computer-aided manufacturing, and concurrent engineering design.

Part-time programs of study allowing students to continue full-time employment in local industries are available. Most of the courses in these programs are offered in the evening, and some programs are offered at off-campus sites.

Master of Science in Industrial Engineering

The master of science degree program in industrial engineering is built on core courses designed to provide breadth of experience in systems modeling, analysis, and applications common in industrial engineering. Upon this foundation, the student constructs a specialization in one of three areas: manufacturing systems, quality engineering, or engineering management.

Admission to the master's program is contingent upon admission to the Graduate School; for requirements see page 16. Applicants whose admission credentials do not include an undergraduate major in Industrial engineering or preparation comparable to I E 6210 and I E 6310, will be required to take these courses as background work which will NOT count toward the thirty-two credit degree requirement.

DEGREE REQUIREMENTS: The Master of Science in Industrial Engineering and in Operations Research is offered under the following options:

Plan A: Thirty-two credits including an eight credit thesis.

Plan C: Thirty-two credits of course work.

Both options require a common core of sixteen credits including: IE 6420, 6430, 7560, and either 6260 or 7240. While the core provides breadth to the student's program, depth of understanding is acquired through completion of the required twelve credits in one of the following areas of specialization: Manufacturing Systems, Quality Engineering, Engineering Management.

Appropriate courses for specific specializations can be found in the departmental advising manual.

The remaining four credits may be selected from graduate courses in industrial engineering, business, economics, industrial psychology, or engineering. This elective must be approved by the graduate adviser.

Master of Science in Manufacturing Engineering

The master of science degree program in manufacturing engineering is built on an interdisciplinary core of courses designed to provide a foundation in the various elements of manufacture: engineering materials, process technologies, and production systems. Building on this preparation, the student constructs a specialization in one of three areas: computer integrated manufacture, quality engineering, or manufacturing equipment design.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16.

Because of the interdisciplinary nature of the program, applicants whose undergraduate education is deficient in prerequisites for graduate classes may be required to take background courses which will NOT count toward the thirty-two credit degree requirement. Students whose background preparation does not include manufacturing processes must take I E 3450.

DEGREE REQUIREMENTS: The Master of Science in Manufacturing Engineering is offered under the following options:

Plan A; Thirty-two credits including an eight credit thesis.

Plan C: Thirty-two credits of course work.

For either option, requirements include twelve credits of core course work: MSE 5010, I E 6310, and either I E 7850 or I E 6450; and at least twelve credits in one of the following areas of specialization: Computer Integrated Manufacture, Quality Engineering, and Mechanical Engineering.

Appropriate courses for specific specializations can be found in the departmental advising manual.

The remaining eight credits may be selected from any of the specialization areas, or may be in manufacturing-related courses outside the department of the student's chosen area of specialization, as approved by the graduate adviser.

If the thesis option (Plan A) is elected, eight credits of research (I E 8999) may be selected which integrates with the student's *Plan of Work* to create depth of understanding in an area relevant to the program objective.

Master of Science in Operations Research

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. The program is intended to provide an opportunity for students without undergraduate engineering degrees to pursue advanced studies in systems modeling, operations and management. Applicants must have an overall h.p.a. of 2.8 in an undergraduate major in mathematics, computer science, or the physical sciences completed at a regionally-accredited institution, and a 3.0 h.p.a. in the mathematics courses included in the program. Such preparation must include courses in (1) mathematics equivalent to an accredited engineering baccalaureate program; (2) computer programming in a high-level language such as FORTRAN, PASCAL, C, etc; and (3) a calculus-based course in probability theory.

DEGREE REQUIREMENTS: The Master of Science in Operations Research is offered under the following options:

Plan A: Thirty-two credits including an eight credit thesis.

Plan C: Thirty-two credits of course work.

The structure of this program is similar to that of the Master of Science in Industrial Engineering (see above), with an operations research focus. The program is particularly suited to students without an undergraduate engineering degree who have a strong mathematics background. Students lacking sufficient undergraduate preparation may be required to take I E 6210 and 6310, as well as additional credits to satisfy prerequisites, none of which may count toward fulfillment of the thirty-two credit degree requirement. All course work must be completed in accordance with the regulations of the Graduate School and the College governing graduate scholarship and degrees; see pages 16 - 30 and 118-120, respectively.

Master of Science in Engineering Management

The Master of Science in Engineering Management is designed to build both technical competence and business acumen. The program builds understanding and skills critical to the support of fast-to-market strategies, which also guarantee product quality, and cost minimization. A systematic analytical framework is developed and coupled with tools for managing the engineering and technical functions within manufacturing-based companies. This cross-disciplinary program draws from the expertise of the College of Engineering and the School of Business Administration.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. The program is intended for the practicing engineer or technical leader with an undergraduate degree from an accredited engineering program, who possesses at least six years of experience. This program is only available at the Fairlane Training and Development Center to Ford Motor Company employees. Students interested in the on-campus program should contact the Department; telephone: 313-577-3821.

DEGREE REQUIREMENTS: This program is offered under Plan B: forty-two credits including a six-credit master's essay. There are four core segments: engineering management, business cognate, engineering cognate, and capstone project. A detailed course outline is available from the Department.

Doctor of Philosophy Degree with a Major in Industrial Engineering

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. In general, applicants are required to have a Master of Science degree in industrial engineering or operations research with a minimum honor point average of 3.5. Students with an undergraduate degree in one of these areas and an honor point average of 3.5 or above may apply for direct admission to the Ph.D. program. In such cases direct admission will be predicated on the specific courses and strength of the undergraduate curriculum.

Applicants with an undergraduate major in mathematics, computer science, or the physical sciences, completed at an accredited institution, are also eligible for admission to this program, provided an evaluation concludes that the educational background includes sufficient background in analytically-oriented course work.

DEGREE REQUIREMENTS: Candidates for the doctoral degree must complete ninety credits beyond the baccalaureate, including thirty credits of dissertation direction. A preliminary examination as well as a written and oral qualifying examination and an oral dissertation defense are required. Students should consult page 27 for Graduate School regulations governing doctoral study.

GRADUATE COURSES (I E)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

5100 (BME 5100) Engineering Physiology. (CHE 5100) (ECE 5100) (M E 5100) Cr. 4

Prereq: ECE 4300 or M E 3400. The basic principles of human physiology presented from the engineering viewpoint. Bodily functions, their regulation and control discussed in quantitative terms and illustrated by simple mathematical models when feasible. (I)

5170 (BME 5570) Design of Human Rehabilitation Systems. (ECE 5170) (M E 5170) Cr. 4

Prereq: M E 4450; senior standing. Design, fabrication and testing of customized hardware to aid handicapped patients. (W)

5260 Principles of Quality Control. Cr. 4

Prereq: I E 3220. Statistical quality control including process capability, control charts, and acceptance sampling procedures. Procedures for measurement of dimensional tolerance are introduced. Computer-based data collection and analysis. (Y)

5560 Operations Research. Cr. 4

Prereq: I E 3220, MAT 2150. Student computer account required. An introduction to the philosophy of operations research. Formulation of linear programming models and their solution. Duality and sensitivity analysis. The transportation model. Introduction to probabilistic modeling and applications of queueing models. (F)

6140 Electronic Manufacturing. Cr. 4

Thick film hybrid, and printed wire board. Technologies, processes, materials, equipment; process design guidelines, electronics industrial standards, statistical process control methods. (Y)

6150 Semiconductor Manufacturing. Cr. 4

Wafer fabrication and IC packaging. Process design guidelines, standards, statistical process control methods. (Y)

6180 (BME 6480) Biomedical Instrumentation. (ECE 6180) (M E 6180) Cr. 4

Prereq: ECE 3300, BME 5010 or PSL 5550, and BME 5020. Engineering principles of physiological measurements. Signal conditioning equipment, amplifiers, recorders and transducers. Recent advances. (I)

6210 Probability Models and Data Analysis. Cr. 4

Prereq: MAT 2040. No credit after I E 5250. Student computer account required. Analysis of variability in engineering decision making; data analysis, probabilistic models, expectation, joint distributions, confidence limits and hypothesis testing. (F)

6240 Quality Management Systems. Cr. 4

Prereq: I E 3220 or 6210. Survey of topics relating to effective management of a product assurance organization. Two team-design projects assigned. (W)

6260 Reliability and Quality Control. Cr. 4

Prereq: I E 4250 or 6210. Introduction to product assurance in engineering design and manufacturing: system reliability models, life testing strategies, use of the exponential and Weibull distributions, process capability analysis, control charts, sampling plans, organization and economics. (F)

6270 Engineering Experimental Design. Cr. 4

Prereq: I E 4250 or 6210. The design of engineering experiments for manufacturing process analysis, human factors experimentation, societal systems analysis and life testing; basic experimental design models, blocking, factorial experiments, nested designs, covariance analysis, response surface analysis, estimation of effects. (W)

6310 Production Systems I. Cr. 4

Prereq: I E 6210. No credit after I E 4310 or I E 4330. Fundamental theories and concepts in the design and operation of production systems for manufacturing and service organization. (W)

6380 Material Handling Systems. Cr. 4

Prereq: I E 6420. Principles of material handling systems. Material handling systems analysis and design. Interfacing material handling systems. Principles of robotics. Robotic applications in manufacturing. (Y)

6400 Expert Systems in Manufacturing. Cr. 4

Prereq: M E 3450. Expert systems in manufacturing for diagnostics and design. Declarative and procedural nature of PROLOG, VP-Expert. Structure of expert systems in manufacturing, knowledge representation methods, solution space search algorithms, inference engine, forward and backward chaining. (Y)

6420 Computer Aided Manufacturing II. Cr. 4

Prereq: I E 4410 or consent of instructor. Student computer account required. The integration of automated manufacturing systems into large manufacturing cells with emphasis on distributed processing problems, hierarchical control structures and interaction with a manufacturing data base. (F)

6430 Computer Simulation Methods. Cr. 4

Prereq: I E 4250 or 6210 and computer programming experience. The application of discrete, continuous and combined simulation methods to the solution of a variety of production and service systems problems. Computer simulation and a term project involving an application are required. (F)

6450 (M E 6450) Advanced Manufacturing Processes and Methods. Cr. 4

Prereq: M E 3450, CHE 3040, or consent of instructor. Review of novel manufacturing processes, methods and systems; emphasis on

optimum design for manufacturability, technical, economic, and industrial limitations. Elements of computer-aided manufacturing, and numerical methods application. (W)

6470 Stochastic System Modeling: Queuing and Simulation. Cr. 2

Description of queuing systems; analytical solutions; discrete events systems; modeling framework and object models; terminating and non-terminating systems; statistical analysis; case studies. (Y)

6510 Information Systems for the Manufacturing Enterprise. Cr. 2

Methods for information flow modeling. Information needs of global manufacturer: design, testing, manufacture, delivery. Partnership relation to suppliers via information. (Y)

7100 (M E 7100) Mathematical Modeling in Bioengineering. (ECE 7100) Cr. 4

Prereq: I E 5100. Mathematical models that simulate physiological or anatomical function. Models of the nervous and vascular systems, models for impact acceleration and current topics. (I)

7160 (M E 7160) Biomechanics II. (ECE 7160) Cr. 4

Prereq: M E 5160. Biomechanical response of bone, muscle, skin, artery and other soft tissues to load or deformation. Structural and physiological response of body systems to impact and steady state vibration. Biofluid mechanics of blood flow. Gait analysis. Material fee as indicated in the Schedule of Classes.

7240 Reliability and Quality Assurance Systems. Cr. 4

Prereq: I E 6210. Product assurance activities in industry from early design stages to reliability modeling. Topics may include: organization and planning for quality, design for quality, quality function deployment, survey of process control methodologies, failure mode analysis. (W)

7250 Quality Engineering. Cr. 4

Prereq: I E 6270. Quality loss function; introduction to on-line and off-line quality control; product and process design optimization using Taguchi methods; fractional factorial designs using orthogonal arrays and linear graphs; robust design and signal to noise ratio. (Y)

7255 (BME 7250) Engineering Gerontology. Cr. 4

Introduction to mastery of basic tools and methods required for evaluating devices and environments for the elderly. Practical approach to redesign and implementation improvements for the elderly. Adoption of current gerontological literature. (B:F)

7270 Reliability Estimation. Cr. 4

Prereq: I E 6260. Student computer account required. Reliability measures, failure distributions, reliability block diagrams, reliability estimation using exponential and Weibull distributions, sequential life testing and Bayesian reliability. (W)

7280 Systems Design. Cr. 2

Methodology for approaching large-scale systems with many interacting components. Development of ability to decompose large system design problems into manageable stages. (Y)

7290 Quality and Productivity Management. Cr. 4

Topics in product assurance management including: definition, history, philosophy of quality. Strategic elements of proactive quality, design for quality, process project control, reliability program management. (Y)

7300 Topics in Systems Thinking and Technology-Based Strategies for Problem Solving. Cr. 2

Role of various technologies in engineering management. Topics may include: artificial intelligence and expert systems; world wide web; ergonomics; TRIEZ technical problem-solving technique; value engineering; mechatronics; systems thinking. (Y)

7320 Production Systems II. Cr. 4

Prereq: I E 5310 or 6310, 7520 and 7710. Student computer account required. Advanced concepts in the design and operations of production systems for manufacturing and service organizations. Determin-

istic and stochastic forecasting, inventory control, production control and scheduling models. (B)

7410 Agile Systems for the Manufacturing Enterprise. Cr. 2

Prereq: I E 6410, 6420, experience in computer programming in high level language. Factors that help define the agility of a system; greater workforce autonomy and changes in training and production of technical personnel. Main elements of operations management. (Y)

7420 Flexible Manufacturing Systems. Cr. 4

Prereq: I E 6380. Analysis and design of flexible manufacturing systems. FMS control and communication architecture, FMS material handling architecture. Flexibility analysis. Computer-integrated manufacturing (CIM). (Y)

7430 (CSC 7190) Theory of Modelling and Simulation. Cr. 3

Prereq: CSC 5180 or CSC 5190 or CSC 6180. Student computer account required. Elements of model theory; hierarchy of model relationships and validity, including homomorphism and structure-preserving morphism; simplification and aggregation. Design of software systems for multifaceted system simulation. (I)

7520 Optimization Methods. Cr. 4

Prereq: graduate standing. Student computer account required. Introduction to optimization theory and optimization problems. Necessary and sufficient conditions for optimality. Research methods. Duality in optimization problems. Geometric programming. (F)

7560 Deterministic Management Systems Analysis. Cr. 4

Prereq: graduate standing in engineering. Use of mathematical models in management decisions. Formulation of descriptive and optimization models for deterministic systems. Linear, nonlinear and integer programming, transportation and network models as decision tools. Sensitivity analysis; applications to advertising, product mix, manpower and production scheduling, budgeting and facility location. (F)

7570 Deterministic System Models and Optimization. Cr. 2

Prereq: graduate standing. Methods for quantifying impact of specific constraints on overall performance of a system; use of journal articles on corporate use of these models. (Y)

7640 (C E 7640) Economic Analysis in Transportation Systems Planning. Cr. 3

Prereq: I E 5870 or C E 6050. Application of engineering economy and price theory in optimization of transportation systems designs functioning primarily in an urban environment; congestion costs, externalities, primary and secondary costs and benefits and peak period pricing; case studies. Material fee as indicated in the Schedule of Classes. (I)

7710 Stochastic Service Systems I. Cr. 4

Prereq: I E 5770 or 6210. Advanced probability concepts and decision models. Functions of random variables, transforms and generating functions, Poisson process, order statistics, steady state and transient analysis of Markov chain models. Introduction to queueing models. Applications to reliability and quality control, inventory, transportation and emergency services. (W)

7720 Engineering Risk and Decision Analysis. Cr. 4

Complex decisions in face of major uncertainty; influence diagram, decision trees. Case studies from broad range of engineering applications. (Y)

7740 Advanced Manufacturing Data Analysis Techniques. Cr. 4

Prereq: I E 6270 or 7250; or consent of instructor. Advanced methods in quality and reliability engineering: information reduction technique, time series technique. (Y)

7810 Cost Control Systems. Cr. 4

Prereq: graduate standing. Advanced engineering economy, design and operation of cost control systems in manufacturing and service organizations. Design of systems to control labor, material and overhead costs. (F)

7820 Engineering Administration. Cr. 4

Prereq: I E 7810. Basic concepts of engineering management as a process of organizing, planning, controlling and activating. (F)

7830 Management of Technology Change. Cr. 2

Prereq: graduate standing. In-depth treatment of development and implementation of advanced technology; special attention to interaction among technology work process, organization, human resources, and culture. (Y)

7840 (MGT 7840) Project and Program Management. Cr. 3-4

Prereq: I E 7850 or B A 6020 or equiv.; or consent of instructor. Project management strategies, tools, and techniques. Development of management skills for team-building and corporate strategic planning. (Y)

7850 Manufacturing Strategies. Cr. 4

Prereq: sixteen graduate credits in engineering. Strategic approach to the management of manufacturing including: relationship to corporate strategy, operationalizing manufacturing concepts, impact of new technology and manufacturing concepts, impact of new technology and manufacturing as a competitive resource; case-studies approach. (Y)

7870 Quality Leadership and Process Improvements. Cr. 2

Prereq: graduate standing. Quality philosophies used as basis for quality process improvements; discussions and journal articles used to examine re-engineering, supply chain management, and the human side of quality; team project included. (Y)

7990 Directed Study. Cr. 1-6

Prereq: written consent of adviser, chairperson and graduate officer for master's students; written consent of adviser, chairperson and Dean of Graduate Studies for Ph.D. students. Student selects some field of industrial engineering for advanced study and instruction. An outline approved by the instructor must be presented before registration in this course. (T)

7995 Special Topics in Industrial Engineering II. Cr. 1-4

Special subject matter in industrial engineering. Topics to be announced in Schedule of Classes. (I)

7996 Research. Cr. 1-6

Prereq: consent of adviser and chairperson; outline approved by instructor prior to registration for this course. Advanced design, investigation or experimental work. (T)

7999 Engineering Management Leadership Project. Cr. 3 (6 req.)

Prereq: consent of adviser. Integration of knowledge from individual courses in M.S. engineering management curriculum. Team-oriented focus on major industrial problem. (T)

8200 Advanced Topics in Reliability and Quality Control. Cr. 4

Prereq: I E 7260 or 7270. An in-depth study of current literature in reliability and quality control research. (F)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of graduate adviser. (T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16

Prereq: consent of chairperson and departmental graduate committee. No more than ten credits may be elected before doctoral candidacy is obtained. Offered for S and U grades only. (T)

MECHANICAL ENGINEERING

Office: 2103 Engineering Building; 577-3845

Chairperson: Kenneth A. Kline

Associate Chairperson: Trilochan Singh

Professors

Victor Berdichevsky, Carl DeSilva (Emeritus), Ronald Gibson, Nacim Hencin, Raouf Ibrahim, Albert King, Kenneth Kline, Ming-Chia Lai, Golam Newaz, L. J. Patrick (Emeritus), Robert Piccirelli (Emeritus), Evgeny Rivin, Trilochan Singh, Dinu Taraza, Alan Whitman

Associate Professors

Emmanuel Ayorinde, John Cavanaugh, Nabil Chalhoub, M. G. Koenig (Emeritus), Jerry Ku, Sheng Liu, Chin-An Tan, Sean Wu, King-Hay Yang, Sheng-Tao Yu, E.C. Zobel (Emeritus)

Assistant Professors

Theresa Atkinson, Michele Grimm, Xin Wu

Adjunct Professors

Bashar Abdul-Nour, John Agapiou, David Ardayfio, Walter Bryzik, Bertram Ezenwa, Bruce Gans, Tawfik Khalil, Robert Levine, John Melvin, Kenneth Morman, Ali Ozbeki, David Schmueser, Subrata Sengupta, Arun Solomon, Robin Stevenson, David Viano, Ashraf Zeid

Visiting Professors

Minfu Lu, Valery Pylypchuk, Sheng-Tao Yu

Graduate Degrees

MASTER OF SCIENCE in Mechanical Engineering

DOCTOR OF PHILOSOPHY with a major in Mechanical Engineering

The opportunities and challenges in the field of mechanical engineering are diverse and virtually unlimited. The broad variety of career possibilities includes research and development, design analysis and synthesis, manufacturing and production engineering, testing, sales, engineering, maintenance and administration. The challenge of a mechanical engineer may lie in the perfection and reliability of a device that will be duplicated a million-fold or in the control optimization of a single complex system of unique design. The mechanical engineering curriculum is designed to prepare graduate students in many applied fields, including such important areas as biomechanics, energy conversion, combustion engines, emissions controls, machine tool design, manufacturing, computer graphics, structural analysis, automatic controls, vehicle dynamics and design, continuum mechanics, fluid dynamics, environmental design, mechanisms, acoustics and noise control, laser diagnostics, and composite materials. Faculty members in the Department are currently engaged in state-of-the-art research in all of these areas. Specialized areas of research support for graduate students include: manufacturing processes, composite material behavior, combustion, machine tool design, acoustics, vibrations, laser diagnostics, biomechanics, control of mechanical systems, and engine research.

Part-time study (with most courses offered in the evening) and cooperative programs allow professionals working in local industry to pursue graduate degrees while employed.

Master of Science in Mechanical Engineering

Program specializations at the master's degree level may be undertaken in many areas, including acoustics, vibrations, machine tool design, biomechanics, combustion engines, automatic controls, composite materials, and fluid and solid mechanics, among others. These program specializations are available to both part-time and full-time students, in either research or non-research degree programs.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16.

DEGREE REQUIREMENTS: The master's degree in mechanical engineering is offered under the following options:

Plan A: A minimum of thirty-two credits in course work including an eight-credit thesis.

Plan C: A minimum of thirty-two credits in course work.

Credit distribution includes: at least twenty-four credits in mechanical engineering courses, including a minimum of two courses on the 7000-level for Plan A students and three 7000-level courses for Plan C students. Directed study and directed research courses (M E 7990 and 7996) *cannot* be counted toward the satisfaction of the 7000-level course requirement. A maximum of four credits in directed study or directed research (M E 5990, 7990 and 7996) can be applied towards the degree. Every master's degree student (both Plan A and Plan C) must select at least four courses from one of the following areas: vibrations and acoustics, controls and dynamics, biomechanical engineering, solid mechanics, manufacturing/design, and thermal/fluid science. At least one of the four courses must be a core course in that area. A list of approved courses may be found in the *Handbook for Graduate Students in Mechanical Engineering*, available from the Department and listed on the M E home page. In addition, a minimum of four credits in engineering analysis is required, to be taken from the following list: M E 5000, 5010; MAT 5070, 5220, 5230, 5410. Thesis credit requirements are met by satisfactory completion of M E 8999. All course work must be completed in accordance with the regulations of the Graduate School and the College governing graduate scholarship and degrees; see pages 16 - 30 and 118-120, respectively.

Doctor of Philosophy with a Major in Mechanical Engineering

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. It is recommended that applicants submit Graduate Record Examination (GRE) scores, particularly if they are requesting financial assistance. In addition, applicants must have a graduate honor point average of 3.5 or above and must have completed an undergraduate major or substantial specialized work in his/her proposed doctoral major field. Students with an undergraduate honor point average of 3.5 or above may apply for direct admission to the Ph.D. program; students with less than a 3.5 undergraduate h.p.a. must complete a master's degree program in mechanical engineering prior to consideration for admission to a Ph.D. program.

DEGREE REQUIREMENTS: A minimum of ninety semester credits beyond the baccalaureate degree must be earned in the Ph.D. program. In addition, at least half of all course work credit exclusive of dissertation credits must be earned in the Department of Mechanical Engineering. All course work must be completed in accordance with the regulations of the Graduate School and the College governing graduate scholarship and degrees; see pages 16 - 30 and 118-120, respectively.

All Ph.D. students must satisfy the following qualifications:

1. **Preliminary Qualifying Examination:** This is a written examination administered each semester. All Ph.D. applicants must pass this examination within three semesters after admission to the Ph.D. program. Students must choose to be examined in mathematics and in two of the following fields: (a) Controls, (b) Dynamics and Vibrations, (c) Fluid Mechanics, (d) Solid Mechanics, and (e) Thermal Sciences. Each student has two chances to pass this examination. Students must register their choice of fields with the Director of Graduate Studies at least thirty days prior to the examination date.

2. *Final Qualifying Examination:* This examination consists of written and oral parts covering the student's major and minor areas and other related fields. The student is expected to take this examination before registration for more than ten credits in M E 9999, Doctoral Dissertation Research and Direction.

3. *An approved Plan of Work* should be filed with the Office for Graduate Studies. See page 28 for further information.

4. *A Doctoral Dissertation Outline*, approved by all members of the Doctoral Committee and the Departmental Graduate Program Committee should be filed by the student immediately after completing the oral part of the Final Qualifying Examination.

GRADUATE COURSES (M E)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

5000 Engineering Analysis I. Cr. 4

Prereq: MAT 2040 and senior standing. Applications of ordinary differential equations. The method of Frobenius, Bessel functions, Legendre polynomials. Orthogonality of characteristic functions. Fourier series and Fourier integrals. Characteristics and solutions of partial differential equations. Method of separation of variables. Applications to initial and boundary value problems in engineering. Material fee as indicated in the Schedule of Classes. (F)

5010 Engineering Analysis II. Cr. 4

Prereq: MAT 2040 and senior standing. Basic operations of complex numbers. Analytic functions and Cauchy-Riemann conditions. Cauchy and Goursat theorem. Residue theorem. Conformal mapping and its applications. Schwarz-Christoffel transformation. Basic properties of the Laplace transformation. Convolution integral. Applications to mechanical and electrical engineering problems. Material fee as indicated in the Schedule of Classes. (W)

5035 Applications of Finite Element Analysis in Design and Manufacturing. Cr. 4

Prereq: M E 3600. Finite element methods applied in design and manufacturing processes practiced through the usage of state-of-the-art software packages. Analyses will include static analyses, non-linear analyses, thermal and fluid analyses, and modal analyses. (F)

5040 Finite Element Methods I. Cr. 4

Prereq: M E 3600, MAT 2350. Student computer account required. Introduction to finite element methods. Energy theorems, variational methods, review of equations from solid mechanics, displacement model of a single element, assemblage of elements. Detailed examples of problems in structural analysis, in part using the NISA general purpose computer code. Plane strain and plane stress elements, solid elements. (F,W)

5100 (BME 5100) Engineering Physiology. (CHE 5100) (ECE 5100) (I E 5100) Cr. 4

Prereq: ECE 4330 or M E 3400. The basic principles of human physiology presented from the engineering viewpoint. Bodily functions, their regulation and control discussed in quantitative terms and illustrated by simple mathematical models when feasible. (F)

5160 (BME 5210) Musculoskeletal Biomechanics. Cr. 4

Prereq: BME 5010 or PSL 5550 Structure and properties of the major tissue components of the musculoskeletal system and evaluation of how tissues combine to provide support and motion to the body. (W)

5170 (BME 5570) Design of Human Rehabilitation Systems. (ECE 5170) (I E 5170) Cr. 4

Prereq: M E 4450; senior standing. Design, fabrication and testing of customized hardware to aid handicapped patients. (W)

5180 (BME 5370) Introduction to Biomaterials. (MSE 5180) Cr. 4

Prereq: MSE 1300, BME 5010 or PSL 5550 Introduction to study of both biological materials (bone, muscle, etc.) and materials for medical applications. Topics include tissue properties and effects of pathology, biocompatibility, and design considerations. (Y)

5210 Convective and Radiative Heat Transfer. Cr. 4

Prereq: M E 4200. Radiative processes and properties of solids. Radiative heat transfer among surfaces in an enclosure. Introduction to gas radiation. Derivation of the energy equation for laminar flows. Application of semi-empirical correlation for forced and free convection of laminar and turbulent flows. Some analytical methods for convective heat transfer. Heat exchange analysis. (F)

5300 Intermediate Fluid Mechanics. Cr. 4

Prereq: M E 3300. Student computer account required. Introduction to continua. Integral and differential equations of motion. Ideal flow theory. Flow over blunt bodies. Introduction to boundary layer. Sound waves. Compressible flows. (F)

5330 Advanced Thermal Fluid System Design. Cr. 4

Prereq: M E 2210, 4200; ENG 3050; CHE 3040 and senior standing in AGRAD program. Design of thermal fluid systems to meet system performance requirements, system simulation, design optimization and economics limitations. Material fee as indicated in the Schedule of Classes. (F/W)

5400 Dynamics II. Cr. 4

Prereq: M E 3400. Kinematics and rigid bodies in space. Classical particle solutions: central force, motion on a surface of revolution, spherical pendulum. Energy and momentum integrals. Equations of motion in general rotating coordinate frames. Euler angles, angular momentum and kinetic energy of rigid bodies. Fixed point motion, steady solutions. Applications to spatial motions of rigid bodies. Material fee as indicated in the Schedule of Classes. (F)

5410 Vibrations II. Cr. 4

Prereq: M E 3410. Multidegree-of-freedom systems. Eigenvectors and eigenvalues and orthogonality of normal modes. Mode-summation method. Solution to forced vibrations by Laplace transforms, numerical methods and Continuous Systems Modeling Program (CSMP). Rayleigh's principle and Dunkerley formula for approximate frequencies. Torsional geared and branched systems. Log ranges equations. Vibration of continuous systems: longitudinal and transverse vibrations of beams; torsional vibrations, vibrating string and membranes. (F)

5440 Industrial Noise Control. Cr. 4

Prereq: senior standing or consent of instructor. Nature and origin of noise in mechanical systems and design for their control. Measurement of sound pressure levels, sound power levels, sound intensity levels, reverberation time, absorption coefficients of materials. (B:W)

5450 Fundamentals of Vehicle Dynamics. Cr. 4

Prereq: M E 4450. Introduction to vehicle dynamics and their control systems for passenger cars and off-road vehicles. Design, analysis, and syntheses of suspension, brakes, and steering systems for ride

and handling optimization. Advanced large-scale computer models. Material fee as indicated in the Schedule of Classes. (I)

5460 Fundamentals of Acoustic Radiation. Cr. 4

Prereq: senior or graduate standing. Theory of sound generation and propagation. Acoustic source models, wave theory, principles of transducers and speakers. Architectural acoustics. (B:F)

5470 Creative Problem Solving in Design and Manufacturing. Cr. 4

Coreq: M E 4450. Concepts of laws of natural development of engineering systems. Algorithm for inventive (creative) problem-solving (AIPS-85). Creative use of physical and geometrical effects in design of mechanical and manufacturing systems. Concepts of strength, stiffness, vibratory effects, reliability in mechanical design. (W)

5500 Advanced Engineering Design. Cr. 4

Prereq: M E 5330 and ENG 3060. Team work on semester-long project, design concepts to be developed using various design theories, students perform patent literature search, design, fabricate and test prototypes. Final written report and public presentation required. Material fee as indicated in the Schedule of Classes. (F/W)

5540 Analysis and Control of Dynamic Systems. Cr. 4

Prereq: MAT 2350 or MAT 2040, M E 3400. No credit toward graduate degree in mechanical engineering. Mathematical modeling of linear, lumped, time-invariant systems, open and closed loop systems, single-input-single-output system design using root locus method. (F/W)

5600 Advanced Mechanics of Materials. Cr. 4

Prereq: M E 3600. Statically indeterminate problems. Force method. Displacement methods. The three-moment equation. Euler formulas for columns. Column formulas for concentric and eccentric loadings. Energy methods and applications. Unsymmetrical bending of beams. Shear center. Bending of curved bars. Thick-walled cylinders. Torsion of non-cylinders. Rotating discs. Torsion of non-circular shafts. Membrane analogy. (W)

5610 Experimental Mechanics of Materials. Cr. 4

Prereq: M E 3600. Experimental characterization of mechanical behavior. Instrumentation and measurement of load, strain, deflection, etc., characterization of creep, fracture toughness, dynamic-mechanical response (damping and vibration). Statistical analysis of data. (W)

5620 Fracture Mechanics in Engineering Design. Cr. 4

Prereq: M E 3600. Linear and nonlinear fracture mechanics principles and their applications to structural design. Stress-intensity factors, J-integral, CTOD concepts to develop fracture control plans. (Y)

5700 Introduction to Continuum Mechanics. Cr. 4

Prereq: MAT 5070. Cartesian tensor analysis, integral theorems, invariants. Kinematics: material derivative, transport theorem, streamlines, associated theorems, motion gradient and deformation measures; material derivative, transport theorem; stretching and spin; vorticity and circulation. Balance postulates: mass, linear momentum, angular momentum, energy. Constitutive equations: invariance, material isotropy group. Material fee as indicated in the Schedule of Classes. (F)

5720 Mechanics of Composite Materials. Cr. 4

Prereq: M E 3600, senior standing. Analytical modeling of micromechanical and macromechanical behavior of composite materials. Stiffness, strength, hydrothermal effects, laminate analysis, viscoelastic and dynamic behavior. Experimental characterization of mechanical behavior. (F)

5730 Tribology and Lubrication Technology. Cr. 4

Prereq: M E 3600. Friction, wear, and lubrication fundamentals: wear mechanisms, application of coatings, surface engineering fundamentals. (Y)

5800 Combustion Engines. Cr. 4

Prereq: M E 2200 and 2210 or equiv. Thermodynamics and cycle analysis of spark ignition, compression ignition, and gas turbine

engines. Combustion processes in actual systems, performance characteristics, combustion abnormalities. Analysis of intake, fuel and exhaust systems. (F)

5810 Combustion and Emissions. Cr. 4

Prereq: M E 5800; for chemical engineering students: senior standing or equiv. Fundamentals of emission formation in combustion systems, wall quenching and imperfect combustion, unburned hydrocarbons, carbon monoxide, aldehydes, nitrogen oxides, species stratification in the combustion chamber, particulates. Effect of design parameters and engine operating variables on emission formation. Emission controls and instrumentation. (W)

5820 Thermal Environmental Engineering. Cr. 4

Prereq: M E 3200 and 4200. Design and analysis of heating, ventilating and air-conditioning systems. Moist air properties calculations, heat transfer and transmission coefficients, heating load, cooling load, heating equipment and cooling equipment, duct design, fans, air distribution, systems design and analysis, refrigeration principles. (S)

5900 National Design Competition Projects. Cr. 1-4 (Max. 6)

Prereq: written consent of director of undergraduate studies or graduate students' adviser. (T)

5990 Directed Study. Cr. 1-4 (Max. 6)

Prereq: Senior or graduate standing; seniors: written consent of adviser and chairperson; graduates: written consent of adviser, chairperson, and Engineering Graduate Office for Master's students. Open only to seniors and graduate students. (T)

5992 Research Experiences for Undergraduates. Cr. 1-4 (Max. 6)

Prereq: written consent of instructor and director of undergraduate studies. (I)

5995 Special Topics in Mechanical Engineering I. Cr. 1-4

Prereq: consent of chairperson. Maximum of eight credits in special topics may be elected in any one degree program. Topics to be announced in Schedule of Classes. (I)

6180 (BME 6480) Biomedical Instrumentation. (ECE 6180) (I E 6180) Cr. 4

Prereq: ECE 3300, BME 5010 or PSL 5550, and BME 5020. Engineering principles of physiological measurements. Signal conditioning equipment, amplifiers, recorders and transducers. Recent advances. (B:F)

6450 Advanced Manufacturing Processes and Methods. (I E 6450) Cr. 4

Prereq: M E 3450, CHE 3040, or consent of instructor. Review of novel manufacturing processes, methods and systems; emphasis on optimum design for manufacturability, technical, economic, and industrial limitations. Elements of computer-aided manufacturing, and numerical methods application. (W)

6550 Modeling and Control of Dynamic Systems. Cr. 4

Prereq: M E 5540. Modeling and analysis of physical systems comprised of interconnected mechanical, electrical, hydraulic and thermal devices; bond graphs; introduction to state-space equations and closed loop system dynamics. Material fee as indicated in the Schedule of Classes. (W)

7020 Finite Element Methods II. Cr. 4

Prereq: M E 5040. Student computer account required. Continuation of M E 5040. Isoparametric elements, plate and shell elements. Dynamic analysis of structures. Hybrid variational techniques. Applications to solid mechanics, incompressible materials, heat transfer and fluid mechanics. Pre- and post-processing, use of computer graphics in analysis. (W)

7100 Mathematical Modeling in Bioengineering. (ECE 7100) (I E 7100) Cr. 4

Prereq: M E 5100 or ECE 5100. Mathematical models that simulate physiological or anatomical function. Models of the nervous and vascular systems, models for impact acceleration and current topics. (W)

7160 Biomechanics II. (ECE 7160) (I E 7160) Cr. 4

Prereq: M E 5160. Biomechanical response of bone, muscle, skin, artery and other soft tissues to load or deformation. Structural and physiological response of body systems to impact and steady state vibration. Biofluid mechanics of blood flow. Gait analysis. Material fee as indicated in the Schedule of Classes. (I)

7180 Advanced Topics in Biomaterials. (MSE 7180) Cr. 4

Prereq: M E 5180 or MSE 5180. Seminar format: advanced topics presented to the class; lectures by the instructor and by the participants based on literature reviews. Topics dictated by student interest. (B)

7195 (BME 7210) Tissue Biomechanics. Cr. 4

Prereq: BME 5010 or PSL 5550. Tissue-level mechanical properties. Analytical models of hard and soft tissue mechanics. Soft tissue viscoelasticity. Wolff's law and bone remodeling. Form and function relationships from microstructure to macrostructure. (B:F)

7200 Advanced Thermodynamics for Mechanical Engineers. Cr. 4

Prereq: M E 3200 or consent of instructor. Postulational basis of thermodynamics; potentials and transformation theory; method of calculating properties from basic data. Introduction to statistical thermodynamics; calculation of properties of gases and plasmas; equilibrium mixture calculations. Advanced energy analysis of systems. (F)

7240 Processes in Continuous Combustion Systems. (CHE 7240) Cr. 4

Prereq: M E 5240 or CHE 5240. Introduction to the physical processes in steady, burner-supported flames in furnaces, open burners and combustors. Premixed and diffusion type, laminar and turbulent type flames for all fuel types will be treated; some models will be developed. (I:W)

7250 Advanced Radiative Heat Transfer. Cr. 4

Prereq: M E 5210. Brief review of fundamental laws of energy transfer by radiation, and surface radiation problems. Electromagnetic theory and its application on radiative properties. Radiative properties of small particles. Radiative properties of gases. Radiative transport equation for emitting-absorbing-scattering media solution techniques for radiative transport equation, such as discrete ordinate and spherical harmonics methods. (B:W)

7260 Heat and Mass Transfer. Cr. 4

Prereq: M E 4200. Formulation of heat and mass transfer problems; lumped, differential and integral formulations. Solution of problems using the method of separation of variables, partial solutions, variation of parameters, superposition and Laplace transformation. Applications in different thermal and combustion systems. (F)

7290 Advanced Combustion and Emissions I. Cr. 4

Prereq: M E 3200 and 4200 or consent of instructor. Flame propagation theories, structure or pre-mixed hydrocarbon flames, mathematical formulations for flame propagation and emission formation in homogenous mixtures in engines. Material fee as indicated in the Schedule of Classes. (W)

7300 Advanced Fluid Mechanics. Cr. 4

Prereq: M E 5300 or consent of instructor. Student computer account required. Tensor derivation of conservation laws, transport theorem. Thermodynamics of continuous media and constitutive equations. Kinematics of vorticity, dynamics of flows; perfect fluids, compressibility effects. (F)

7310 Computational Fluid Mechanics and Heat Transfer. Cr. 4

Prereq: M E 5300 or consent of instructor. Introduction to numerical techniques for the solution of inviscid and viscous compressible and incompressible flows and the use of existing algorithms and mathematics libraries. (W)

7400 Advanced Dynamics. Cr. 4

Prereq: M E 5400. Modeling and development of governing equations of motion for discrete and continuous systems. Generalized coordinates. Principle of virtual work and Hamilton's theorems; Jacobi's integral and Routhian functions. Hamilton's canonical equa-

tions and Gibbs-Appell equations. Kinematics of deformable bodies and strains. Stress components and constitutive equations. Formulation of equations of motion for deformable bodies by Hamilton's Principle. Introduction to the stability of dynamic systems. Material fee as indicated in the Schedule of Classes. (W)

7410 Vibrations of Continuous Systems. Cr. 4

Prereq: M E 5400, 5410, 5600. Various exact and approximate solution methods for analyzing the vibrations of continuous systems. (B)

7420 Random Vibrations. Cr. 4

Prereq: M E 5410. Mathematical description of stochastic processes. Response analysis of mechanical systems. Frequency response, spectral density, filters. (I)

7460 Advanced Acoustic Radiation. Cr. 4

Prereq: M E 5000 or equiv., 5460 or consent of instructor. Advanced theoretical treatment of sound generation and transmission with exact and approximate theories. (B:W)

7480 Nonlinear Vibration. Cr. 4

Prereq: M E 5410, 7400. Classification of nonlinearities in mechanical systems and their qualitative effect on their dynamic response. Phase portrait, concept of limit cycle, Duffing's and Van der Pol oscillators, and parametric vibration. Harmonic balance, averaging methods, and multiple scales methods. Nonlinear modal interaction and chaotic dynamics. (B:W)

7490 Engineering Tribology. Cr. 4

Prereq: M E 5410. Physics and mechanics of interacting surfaces, where friction, lubrication, and wear have significant effect on mechanical systems performance. (B)

7550 Control of Dynamic Systems. Cr. 4

Prereq: M E 6550 or consent of instructor. Analysis and control of linear dynamic systems using state-space equations; stability, controllability, observability, modal control. Analysis and synthesis of nonlinear systems; describing functions, limit cycles, stability, introduction to adaptive control. Material fee as indicated in the Schedule of Classes. (W)

7570 Adaptive and Learning Control of Dynamic Systems. Cr. 4

Prereq: M E 5550. Adaptive signal processing; real-time parameter identification; MRAS control system design; self-tuning regulator design; stability and robustness of adaptive systems; repetitive control systems; adaptive learning rules (kernel method); fuzzy and neural controller. (Y)

7590 Nonlinear Control Systems. (ECE 7420) Cr. 4

Prereq: M E 5550 or ECE 5470. Review of nonlinear control problems in industries, analysis of nonlinear systems using phase plane, Lyapunov describing function methods, design of nonlinear controllers, applications to the control of robots, aircrafts and automobiles. (W)

7610 Theory of Elasticity I. Cr. 4

Prereq: M E 5700. Boundary value problems of classical infinitesimal elasticity. St. Venant bending and torsion. Plane stress, generalized plane stress, plane strain, for simply and multiply connected sections. Kolosov complex potentials. Material fee as indicated in the Schedule of Classes. (F)

7660 Theory of Plates. Cr. 4

Prereq: M E 7610. Bending of isotropic and orthotropic plates, continuous plates, plates of variable thickness, various approximate methods. Material fee as indicated in the Schedule of Classes. (B:F)

7680 Manufacturing Processing Mechanics. Cr. 4

Prereq: M E 5040. Electric packaging, composite curing, metal forming; modeling and verification by laser based techniques. (Y)

7720 Advanced Mechanics of Composite Materials. Cr. 4

Prereq: M E 5720. Review of tensor notation with application to stress strain and constitutive equations. Analytical models for viscoelastic and dynamic behavior of anisotropic composite materials

and structures. Experimental characterization of viscoelastic and dynamic behavior. (Y)

7820 Engineering Non-Destructive Evaluation (NDE) Methods and Industrial Applications. Cr. 4

Prereq: M E 4500. Basic and state-of-the-art methods utilized in NDE work at various engineering industries, enriched by hands-on laboratory work, audio visual and research projects as well as interaction with local industry. (Y)

7850 Dynamics and Vibration of Automotive Engines. Cr. 4

Prereq: M E 3410 and 5800. Kinematics, dynamics and balance of reciprocating engines, engine mounts and torsional vibrations of powertrains. (Y)

7990 Directed Study. Cr. 1-4 (Max. 4)

Prereq: written consent of adviser, chairperson and engineering graduate officer for master's students; written consent of adviser, chairperson and Dean of Graduate Studies for Ph.D. students. Student selects some field of engineering for advanced study and instruction. (T)

7995 Special Topics in Mechanical Engineering II. Cr. 1-4

Prereq: consent of chairperson. Maximum of six credits in Special Topics in any one degree program. A consideration of special subject matter in engineering. Topics to be announced in Schedule of Classes. (I)

7996 Research. Cr. 1-4 (Max. 4)

Prereq: consent of chairperson and adviser. A combined experimental and analytic study of a problem in a special field of engineering. (T)

7997 Mechanical Engineering Graduate Seminar. Cr. 0

Prereq: graduate standing. Offered for S and U grades only. Advanced concepts in mechanical engineering; presentation of research results and current developments. Written reports required. (F,W)

8020 Crashworthiness and Occupant Protection in Transportation Systems. Cr. 4

Prereq: M E 5160, 7100, 7020. Crashworthiness and occupant safety facts, computational environment influences, review of federal motor vehicle safety regulations, windshield impact response, modeling and simulation of restraint system, occupants, energy management, and barrier crash tests. (B)

8050 Variational Methods in Engineering. Cr. 4

Prereq: M E 7610. Simplest problems of calculus of variation. Euler equations, Hamilton's variational principle for systems with finite number of degrees of freedom and for continua. Variational methods in beam and plate theory. Legendre and Young transformation. Dual variational principles. (B)

8290 Advanced Combustion and Emissions II. Cr. 4

Prereq: M E 7290 or consent of instructor. Heterogeneous combustion theories, diffusion flames, droplet combustion, spray combustion, mechanisms of emission formation in compression ignition, stratified charge and gas turbine engines. (I:F)

8300 Advanced Topics in Fluid Mechanics. Cr. 4

Prereq: M E 5300. Advanced topics in fluid flow with heat and mass transfer. Review of analytical methods and conservation laws. Linear and nonlinear hydrodynamic instability. Dynamical systems and chaos in fluid flow. (B:F)

8310 Computational Fluid Dynamics II. Cr. 4

Prereq: M E 7310. Advanced CFD course for Ph.D. students. Development of CFD in past two decades; computation of high Reynolds number flow. Recent applications for turbulent reacting flow simulation summarized. (B)

8610 Theory of Elasticity II. Cr. 4

Prereq: M E 5700, 7610. Kinematics of deformation: Green, Cauchy and St. Venant strain tensors and geometric interpretation; strain ellipsoids, general rotation tensor, mean rotation. Compatibility. Rate measures. Balance principles: mass, momentum, energy;

entropy production inequality. Constitutive relations; invariance principles, material anisotropy. Thermodynamics of deformation, nonlinear non-isothermal theory of hyperelasticity. General theorems. Material fee as indicated in the Schedule of Classes. (B:W)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of adviser. (T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16

Prereq: consent of doctoral adviser; coreq: M E 9997. No more than ten hours may be elected before doctoral candidacy is obtained. Offered for S and U grades only. (T)



DIVISION OF ENGINEERING TECHNOLOGY

Office: 4855 Fourth Avenue; 577-0800
Director: Mulchand S. Rathod

Professors

Mulchand S. Rathod, Donald V. Stocker (Emeritus)

Associate Professors

Seymour Cuker (Emeritus), Vladimir Sheyman, Mukasa E. Ssemakula, Chih-Ping Yeh

Assistant Professors

Shamala Chickamenahalli, Akihiko Kumagai, Ece Yaprak, Chih-Ping Yeh

Adjunct Faculty — Part-Time

Lisa Anneberg, Abraham Choucair, Gary Cleary, Cedric Dukes, Abbas Enteshary, Roger Gay, Geoffrey Geisz, Bryce Grevemeyer, Jay Hazra, Mohsin Khan, Charles Loehner, Earnest Luttrell, Douglas Neeley, Richard Netzloff, Richard O'Connell, Sandra Overway-Freeman, Robert Opalinski, Anthony Slominis, Glenn Stahl, Bryan White, Tommy White

Graduate Degree

MASTER OF SCIENCE in Engineering Technology

The Division of Engineering Technology, founded in 1973, stresses the application of current technology to typical industrial problems. The curricula maintain a close relationship between theoretical principles taught in the classroom and their applications.

Engineering technology is a profession closely related to engineering. It deals with the application of knowledge and skills to industrial processes, production and management. Technologists are organizers of people, materials, and equipment for the effective planning, construction and maintenance of technical facilities and operations. Their responsibilities require technical and practical knowledge. Graduates of Wayne State's engineering technology programs are employed in such areas as manufacturing engineering, engineering production, marketing, maintenance, quality control, product testing, field engineering, consulting engineering, design, and technical supervision.

Master of Science in Engineering Technology

The Master of Science in Engineering Technology (M.S.E.T.) program is designed to meet the needs of adults who wish to expand or upgrade their knowledge within the areas of their previous training or current profession. It provides for highly individualized graduate study, and is designed to promote greater depth of understanding in a field of specialization beyond the bachelor's level. It allows more advanced coverage in specialized topics, develops more rigorous analytical skills, helps to advance expertise, and prepares graduates to perform more sophisticated and independent work.

Admission Requirements and Student Selection Procedures: Admission to the M.S.E.T. degree program is contingent upon admission to the Graduate School; for requirements, see page 16. Additionally, all applicants must:

- Hold a bachelor's degree in engineering technology or a related discipline from a college or university of recognized standing, or the equivalent;
- Have maintained at least a 'B' average (3.0 h.p.a.) in undergraduate coursework;

- Provide at least two letters of recommendation from persons acquainted with the applicant's academic achievement at the institution most recently attended (applicants whose academic references date back more than five years may substitute other references, if desired);

- Submit with his/her application a preliminary proposal for the intended plan of study which includes a general set of objectives and an outline of types of coursework or other educational projects to be pursued;

2. Applicants who do not meet the 3.0 h.p.a. requirement but whose h.p.a. does fall within the Graduate School's qualified admission span (2.2 to 2.9 h.p.a.) may be admitted with a conditional status. Immediately upon successful completion of two graduate-level courses with a grade of 'B' or above, the candidate must request in writing that his/her status be changed to regular status.

3. Students will be required to submit a finalized *Plan of Work*, listing all the courses the student intends to take to fulfill the degree requirements. The *Plan* must be developed with the aid of the student's faculty adviser and is generally submitted by the time the student has earned eight credits.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16.

DEGREE REQUIREMENTS: The Master of Science in Engineering Technology degree is offered only under the Plan B option. The M.S.E.T. degree requires twenty-six to twenty-eight semester credits in coursework in engineering technology and closely-related fields, and a four- to six-credit master's project appropriate to the student's plan of study under the supervision of a faculty adviser. All course work must be completed in accordance with the regulations of the Graduate School and the College governing graduate scholarship and degrees (see pages 16 - 30 and 118-120, respectively), in addition to fulfilling the general scholarship requirements of the Division.

Residency Requirement: Of the thirty-two semester credits required for the M.S.E.T. degree, twenty-four must be taken at Wayne State University, including eighteen credits from Division of Engineering Technology courses. Up to eight credits in graduate courses completed at Wayne State as a non-degree graduate student may be applied toward degree requirements and must be included in the applicant's preliminary *Plan of Work*. Minimum completion period for the degree is three semesters.

Curriculum Requirements:

a) Core Courses	credits
ET 7430 — Methods of Engineering Analysis I	4
ET 7450 — Methods of Engineering Analysis II	4
ET 7850 — Statistical Methods and Applications	4
	Total: 12
b) Elective Course	Credits: 14-16
Selected graduate-level courses <i>engineering technology</i> , engineering, science and/or applied sciences, based on program objectives.	
c) ET 7999 — Master's Project	Credits: 4-6
	Minimum credits required for M.S.E.T. degree: 32

Master's Project: The requirement of four to six credits in ET 7999 integrates the knowledge gained in coursework, laboratory studies, and prior work experience to provide a focused activity demonstrating the student's ability to perform master's-level work. The master's project should include elements of design, synthesis, fabrication, CAD/CAM, and empirical and theoretical analysis balanced in a manner appropriate to the student's specific project.

A member of the Division of Engineering Technology faculty holding a graduate faculty appointment chairs the student's Master's Project Advisory Committee. (Individuals outside the Division directing master's project research must hold an adjunct graduate faculty appointment.) An adjunct graduate faculty member may co-chair the Committee. Using the form provided by the Division, the student must submit a proposal indicating the scope of the project, the problem to be solved, the nature of the system to be studied, the plan of approach and work plan for the activity, facilities and resources to be

employed, and the student's qualifications for performing this work. The Master's Project Advisory Committee may accept, decline, or request resubmission of the proposal as explained to the student. Only students with accepted proposals are allowed to register for E T 7999. Requests to elect additional credits in E T 7999 beyond those originally allowed by the Master's Project Advisory Committee must also be approved by the Committee.

GRADUATE COURSES

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

ENGINEERING TECHNOLOGY (E T)

5500 Graduate Industrial Internship. Cr. 1-4 (Max. 4)

Prereq: graduate standing and consent of instructor. Offered for S and U grades only. Industrial practice under supervision in cooperative education. Oral presentation and written report describing professional experience required. (T)

7430 Methods of Engineering Analysis I. Cr. 4

Prereq: E T 3450. Applications of differential equations, partial derivatives, Laplace transforms, Fourier series, matrices, vectors. (F)

7450 Methods of Engineering Analysis II. Cr. 4

Prereq: CSC 1050; coreq: E T 7430. Computer applications and numerical methods of solving differential and integral equations, fast Fourier transforms, spectrum analysis, curve fitting, approximation of function. (W)

7850 Statistical Methods and Applications. Cr. 4

Prereq: E T 3850, coreq: 7430. Sampling techniques in production data analysis, correlation coefficients, regression analysis, control charts, design of experiments, analysis of variance, Factor analysis. (S)

7990 Directed Study. Cr. 1-8 (Max. 8)

Prereq: consent of instructor. Supervised study and instruction in an advanced topic. Outline of proposed study and petition must be submitted to graduate committee in advance of registration for approval. (T)

7995 Special Topics in Engineering Technology. Cr. 1-4 (Max. 8)

Prereq: consent of instructor. Topics to be announced in Schedule of Classes. (I)

7999 Master's Project. Cr. 1-6 (Min. 4, Max. 6)

Prereq: consent of instructor. Design, fabrication, system optimization, and applications of graduate level material. (T)

ELECTRICAL/ELECTRONIC ENGINEERING TECHNOLOGY (EET)

5720 Computer Networking Applications. Cr. 4 (LCT: 2; LAB: 2)

Prereq: EET 3100, 3720. Networking protocols, components, architecture, and standards. Data communication, data packet structure, data transmission methods and techniques, network topologies, and media access control methods. Material fee as indicated in the Schedule of Classes. (Y)

7150 Computer-Aided Circuit Design. Cr. 4

Prereq: E T 7430, EET 4150. Frequency and time-domain analysis of electronic circuits, linear and non-linear circuits, sensitivity analysis, circuit optimization. (I)

7200 Advanced Control Systems. Cr. 4

Prereq: E T 7430, EET 4200. Root-locus technique, signal-flow diagrams and feedback techniques, minor and multi-loop analysis and design. Stability criteria, modern control theory, multi-input/multi-output systems. (I)

7300 Communication Systems. Cr. 4

Prereq: E T 3850, E T 7430, EET 4180. Signal and system analysis, signal transmission and filtering, probability and random variables, random signals and noise, analog communication. Linear CW modulation, sampling and pulse modulation, error control coding and information theory. (I)

7720 Advanced Computer Networking. Cr. 4

Prereq: EET 5720; coreq: E T 7430. Latest advances in networking; internetworking with bridges, routers, and switches. LAN and WAN protocols, high speed networks. (B)

MANUFACTURING/INDUSTRIAL ENGINEERING TECHNOLOGY (MIT)

5500 Machine Tool Laboratory. Cr. 1 (LAB: 3)

Prereq: E T 1140. Laboratory experiences in manufacturing processes, machine tools, and mechanization. Calibration and part-setup. (F,W)

7320 Modeling and Control of Production Systems. Cr. 4

Prereq: E T 3850; coreq: E T 7430. Mathematical modeling for the control and management of production systems. Applications of linear programming. Project scheduling, forecasting, and Markov-process models. (Y)

7700 Robotics and Flexible Manufacturing. Cr. 4

Prereq: E T 7430, MIT 4700. Kinematics, dynamics and controls of the manipulators, their design and applications in flexible manufacturing cells. Computer-integrated manufacturing. (I)

MECHANICAL ENGINEERING TECHNOLOGY (MCT)

7230 Electronic Cooling and Packaging. Cr. 4

Prereq: E T 7430, MCT 3150. Fundamentals of heat transfer and fluid mechanics, heat exchangers, thermal control techniques, cooling of electronic systems and devices. (I)

7410 Applied Vibrations. Cr. 4

Prereq: E T 7430; and EET 4200 or MCT 3410. Free and damped vibrations of one and two degree-of-freedom systems. Vibration measurement instruments and data acquisition. Numerical analysis for equipped parameter systems. Computer techniques in vibration analysis. (I)

**College of Fine, Performing,
and Communication Arts**

INTERIM DEAN: Jack Kay

Foreword

The College of Fine, Performing and Communication Arts at Wayne State University has as its mission the provision of the highest quality education for practitioners, scholars and consumers in art, art history, communication, dance, music and theatre. This education leads to careers, uses for the arts in other disciplines, enhanced critical abilities, the enrichment of everyday life and the building of new generations of artists, professionals and scholars.

The College serves the University and the larger community by creating partnerships that emphasize its own rich, diverse curriculum, interdisciplinary studies, reciprocal professional interaction and outreach activities appropriate to each area of work. Special emphasis is placed on forging alliances with local, state and national constituencies such that the College is both a leader and a resource providing expertise, information and guidance.

Within an appropriate and attractive academic environment the College promotes an atmosphere conducive to intellectual and artistic growth, risk-taking and personal and professional development at all levels in both individual and collaborative endeavors. This environment also assists the College in its role as a national center for creative, research and teaching excellence.

As the cultural conscience of the University, the College provides public events and curricular offerings that nurture creative development, enrich aesthetic values and sensitivity, heighten awareness of the arts experience and reflect the disciplinary diversity of its areas of study. Cultural, racial, ethnic and gender diversity is an important commitment in public events and educational efforts.

Ultimately, the mission of the College is to focus on the integration of theory and practice through the creation, discovery, preservation and transmission of knowledge in the fine, performing and communication arts.

Campus Resources: Traditional courses of study are augmented by a variety of performance and presentation resources considered integral to many of the creative programs. Included in these are the Hilberry Repertory Theatre, the Wayne State University Dance Company, the Symphonic Band and University Orchestra, the Intercollegiate Debate Team, plus exhibitions in the Elaine L. Jacob Gallery and the Community Arts Gallery, which often feature work created by students and studio faculty. These are only a few of the campus resources that are especially important for majors in the College. A more comprehensive listing can be found under each of the specific departments.

Detroit Resources: The proximity of the Wayne campus to institutions of the Detroit Cultural Center (which includes the Detroit Institute of Arts, the Center for Creative Studies, the Museum of African-American History, and Orchestra Hall, among other institutions) provides further unique and enriching benefits for students; professional staff members of these institutions often serve as adjunct faculty in College of Fine, Performing and Communication Arts programs. Nearby, too, are major print and electronic communications resources that similarly provide both adjunct faculty and professional assistance to yet other programs in the college.

Accrediting Agencies: Programs offered by the Music Department are accredited by the National Association of Schools of Music, and the National Association of Music Therapy. Programs in the Theatre Department are accredited by the National Association of Schools of Theatre.

Graduate Degrees and Certificates

CERTIFICATE in Orchestral Studies

MASTER OF ARTS with majors in

Art
Art History
Communication
Design and Merchandising
Music
Radio-Television-Film
Theatre

MASTER OF MUSIC with concentrations in

Composition
Choral Conducting
Music Education
Performance
Theory

MASTER OF FINE ARTS with majors in

Art
Theatre

DOCTOR OF PHILOSOPHY with majors in

Communication
Theatre



ACADEMIC REGULATIONS

For complete information regarding graduate rules and regulations of the Graduate School, students should consult the general information section of this bulletin beginning on page 16. The following additions and amendments pertain to the College of Fine, Performing and Communication Arts.

Regular Admission

—See page 16.

In the selective admission of graduate students, preference is given to those students who have achieved superior undergraduate scholastic records and who evidence superior artistic abilities.

If a student's undergraduate preparation is considered deficient for advanced work in his/her major field, additional work may be required at the undergraduate level. All prerequisite credits must be earned prior to or concurrent with the first graduate credits. Certain degrees have additional requirements as stated in the following pages.

Graduate Scholarship

Graduate degrees are conferred not merely upon the completion of a prescribed number of courses nor necessarily after a given period of residence, but rather in recognition of each candidate's outstanding ability and high attainments as evidenced in all course work, research, scholarly writing, examinations, personal fitness for a chosen profession, and promise of professional competence. All course work must be completed in accordance with the academic regulations of the Graduate School (see pages 16-30), as well as College and Departmental regulations governing graduate scholarship and degrees.

GRADUATE DEGREE REQUIREMENTS

General requirements for graduate degrees may be found beginning on page 27. In addition to these and to the information below, other requirements are specified by the individual graduate departments. Students should consult the program and requirements of the departments in which they plan to major.

Candidacy is an advanced status which is recommended by the student's adviser and authorized by the Graduate School or the Dean of the College of Fine, Performing and Communication Arts upon evidence of the applicant's superior scholarship, appropriate personal qualities and promise of professional competence. Admission as an applicant does not assure acceptance as candidate for a degree. Also, candidacy is a necessary but not sufficient requirement for graduation.

To be eligible for candidacy, the student must file an official approved *Plan of Work*. The *Plan of Work* should provide for effective concentration in a major field, with proper supporting courses in related fields. All master's applicants should file the *Plan of Work* with the graduate officer of the College of Fine, Performing and Communication Arts. In preparing a *Plan*, students should evaluate with care their personal and professional objectives as well as all degree and departmental requirements. Normally, students enrolled in master's degree programs are expected to file a *Plan of Work* by the time the equivalent of eight to twelve graduate credits have been earned. In the Master of Fine Arts program, however, the *Plan of Work* should be filed by the time the equivalent of fourteen to eighteen credits have been earned. Candidacy must be authorized by the time twelve to eighteen graduate credits have been earned (dependent upon the applicant's degree program) or subsequent registration may be denied. Plans are filed with the College's graduate officer. Once the *Plan of Work* has been approved, the form to change the student's rank from 'applicant' to 'candidate' will be processed by the College Graduate Officer.

Ph.D. applicants should file the *Plan of Work* with the Graduate School, when approximately forty credits beyond the baccalaureate degree have been earned. In addition to filing the *Plan*, the student

must have satisfied the foreign language requirements, must have passed the Final Qualifying Examination (written and oral), and must have submitted and received the Graduate Dean's approval on the Dissertation Outline before the doctoral committee will recommend candidacy.

Commencement: Information concerning commencement announcements, caps and gowns, invitations, tickets, time and place, assembling and other relevant items will be mailed to graduates by the Class Board prior to the event. Candidates for advanced degrees are requested and expected to attend the commencement at which the University confers upon them the honor of the degree earned.

Master's Degree Requirements

In the Master of Arts and Master of Music programs, the minimum requirement for the degree is thirty-two credits under one of the following plans:

Plan A: Twenty-four credits in course work plus an eight-credit thesis.

Plan B: Twenty-nine credits in course work plus a three-credit essay.

Plan C: Thirty-two credits in course work. This plan is authorized only in selected areas. The essay or thesis is not required for this plan; however, most departments require a final comprehensive examination. Students should consult an adviser for details.

These requirements vary slightly depending on the department and major curriculum; students should see the degree programs outlined in the following pages for specific information.

COURSE REQUIREMENTS: At least twenty-four credits must be taken in residence. At least six credits in the major field, in addition to the essay or thesis, must be in courses open only to graduate students (7000 and above).

Master of Fine Arts Degree Requirements

In the Master of Fine Arts degree programs, the minimum requirement includes fifty-four to sixty graduate credits plus a final project completed under Plans B or C as follows:

Plan B: Sixty credits including a three-credit essay. This plan is open only to studio art majors.

Plan C: Fifty-four to sixty credits, depending on the student's major, including a final project. For specific requirements, students should consult the Art and Art History or Theatre departmental sections of this bulletin.

All M.F.A. degree requirements must be completed within three years.

Doctoral Degree Requirements

Candidates for the doctoral degree must complete ninety credits beyond the baccalaureate degree including thirty credits of dissertation direction.

— Examinations

Preliminary Qualifying Examinations: Responsibility for the requirement of a preliminary qualifying examination is vested in the graduate faculty of each department and specifically its committee on doctoral study. Accordingly, each committee may require this examination of all of its candidates or of any candidate at any time it may determine prior to the final qualifying examination.

Final Qualifying Examination: The final qualifying examination is required of each applicant. The applicant may request his/her doctoral committee to authorize the final qualifying examination after an approved *Plan of Work* has been filed with the Graduate School, AND after the Dean of the Graduate School has approved the *Dissertation Outline*. The examination will be in part written and in part oral. When this examination has been passed, the applicant will be advanced to the status of 'doctoral candidate'.

The Written Qualifying Examination will cover the applicant's major and minor areas and may include such other related matters as the doctoral examining committee may prescribe. Within thirty days after

the written examination has been passed, the *oral qualifying examination* will be conducted by the doctoral examining committee, in the presence of the chairperson of the departmental committee on doctoral study or his/her designee and a graduate examiner approved by the Graduate School. This examination will relate to the subject matter of the written examination, the applicant's major and minor areas and other pertinent matters.

If an examining committee does not certify that the applicant has been passed in either the written or oral examination, it must make specific recommendations with reference to admitting the applicant to a second examination and specify any additional work that should be completed prior to such an examination. If a second examination is held, it must be scheduled within one calendar year and shall be considered final.

The student's doctoral committee is selected at the time the doctoral *Plan of Work* is prepared. At this time, and upon consultation with the chairperson of the student's doctoral committee, a member outside of the student's major department is appointed to the committee by the Graduate School. This appointed representative is expected to meet as a member of the student's committee while the research and preparation of the dissertation are in process. He/she, along with all members of the committee, will also be present at the final oral presentation. The graduate examiner files a brief report to the Graduate School detailing the conduct of the oral presentation.

— Essays, Theses, and Dissertations

There is no prescribed form for the essay. Title page format as given in the Graduate School's *Guide for Preparing Theses and Dissertations* may be used for essays. Standard style manuals may be consulted for form, as desired by the student or department.

The original copy of the essay should be submitted to the Fine, Performing and Communication Arts Graduate Officer after it is approved and signed by the adviser. This copy will be returned to the department within a reasonable time after the student's graduation date.

The thesis or dissertation *must be an original work, either in or definitely related to the student's major area of specialization*. If proper standards of quality, objectivity, originality, and independence are maintained, the candidate may use data which he/she has derived from his/her University research. Neither the results of the research nor the publication of findings can be restricted by any non-university agency nor can they be published prior to acceptance by the Graduate School, unless prior approval of such publication has been secured from both the adviser and the Graduate School. Advisers have primary responsibility for approval of the essay or thesis, but every member of a doctoral committee must read, approve and sign the dissertation.

A student may not begin work on a manuscript until he/she has submitted an approved *Plan of Work* and outline form. He/she may then register for the thesis or dissertation and pay regular fees in the same manner as for all other course work.

Master's degree candidates under the essay plan register for the course numbered 7999, *Master's Essay Direction*, in the department of their major; a total of three credits must be elected.

Master's candidates under the thesis plan register for the course numbered 8999 in the department of their major. This course is entitled *Master's Thesis Research and Direction* and must be elected for a total of eight credits. Ph.D. candidates register for thirty credits in the course numbered 9999 in their major field, *Doctoral Dissertation Research and Direction*. All credit used toward meeting dissertation requirements must be earned in this course.

The publication and dissemination of research findings will not be restricted by the University after the manuscript has been received and accepted by the Graduate School.

— Outline and Record Form

Before a student begins work on the thesis or dissertation, he/she must file an outline and record form. Master's candidates must prepare three copies which, after receiving departmental approval, will

be forwarded to the Fine, Performing and Communication Arts Graduate Officer. Doctoral candidates must prepare four copies which, after receiving departmental approval, will be forwarded to the Graduate School.

FINANCIAL AID

General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 30. Additional information may be found in the College departmental sections, below. The following scholarship is also available:

Sol Nathan Cohen Memorial Scholarship: An award of variable amount open to any full-time student majoring in the fine and performing arts who has maintained a minimum 3.0 h.p.a. and who demonstrates financial need. Application deadline is May 15; contact the Office of Scholarships and Financial Aid for further information.

DIRECTORY OF THE COLLEGE

INTERIM DEAN:

Jack Kay 5104 Gullen Mall; 577-5342

ASSOCIATE DEAN:

Richard J. Bilaitis 5104 Gullen Mall; 577-5747

ASSISTANT DEAN:

Joan M. Ferguson 5104 Gullen Mall; 577-5362

BUDGET

Janine Dunlop 5104 Gullen Mall; 577-5206

DEVELOPMENT OFFICER 5104 Gullen Mall; 577-5363

ASSISTANT TO THE DEAN

Lezlie H. Stivale 5104 Gullen Mall; 577-5337

DEGREE CERTIFICATION:

Susan T. Tamm 5104 Gullen Mall; 577-5364

PERSONNEL RECORDS 5104 Gullen Mall; 577-5365

INFORMATION OFFICER:

Roger D. Wareham 5104 Gullen Mall; 577-5448

DEPARTMENTAL OFFICES

ART AND ART HISTORY:

Marion Jackson 150 Art Building; 577-2980

COMMUNICATION:

Jack Kay 585 Manoogian Hall; 577-2943

DANCE:

Eva Powers 3226 Old Main; 577-4273

MUSIC:

Dennis J. Tini 105 Schaver Music Building; 577-1800

THEATRE:

James Thomas 3225 Old Main; 577-3508

MAILING ADDRESS FOR ALL OFFICES:

(Department Name), College of Fine, Performing and Communication Arts, Wayne State University, 5980 Cass Avenue, Detroit, MI 48202.

ART and ART HISTORY

Office: 150 Art Bldg., 450 Reuther Mall; 577-2980

Chairperson: Marion Jackson

Associate Chairperson: Carolyn J. Hooper

Graduate Officer: Stanley L. Rosenthal

Slide Collection Curator: Terry Kirby

Interim Gallery Director: Sandra Dupret

Professors

William A. Allen (Emeritus), Richard J. Bilaitis, Robert Broner (Emeritus), Peter J. Gilleran (Emeritus), Bernard M. Goldman (Emeritus), Joseph Gutmann (Emeritus), John G. Hegarty, Marion Jackson, Robert J. Martin, David A. Mitchell (Emeritus), James Nawara, Louise J. Nobili (Emerita), Thomas C. Parish, William E. Pitney (Emeritus), Patricia A. Quinlan (Emerita), Melvin Rosas, Horst Uhr, Robert J. Wilbert (Emeritus)

Associate Professors

Jeffrey Abt, Phyllis A. Ashinger (Emerita), Thomas P. Fitzgerald, Urban Jupena, John C. Mills, Judith Moldenhauer, James M. Raymo, Stanley L. Rosenthal, Peter Williams, Joseph B. Zajac, Marilyn Zimmerman

Assistant Professors

Kelly Deines, Pamela DeLaura, Sarah Guberti-Bassett, Jane Hooper, Nancy Locke, Brian Madigan, John Richardson

W. Hawkins Ferry Endowed Chair in Twentieth Century Art History and Criticism

Erika Wolf

Graduate Degrees and Certificates

MASTER OF ARTS with a major in art and a specialization in one of the following: ceramics, drawing, fibers, graphic design, industrial design, interior design, metalsmithing, painting, photography, printmaking, or sculpture

MASTER OF ARTS with a major in art history

MASTER OF ARTS with a major in design and merchandising

MASTER OF FINE ARTS with a major in art and a specialization in one of the following: ceramics, drawing, fibers, metalsmithing, painting, photography, printmaking, or sculpture

Master of Arts in Art

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. The applicant must hold a Bachelor of Fine Arts degree or another degree and equivalent course work. Admission by the Graduate School of the University means only that the applicant has satisfied the academic standards required for general admission. Final admission is determined by the Department based on the following ranked criteria: 1) portfolio, 2) personal interview, 3) academic record.

DEGREE REQUIREMENTS: A minimum of thirty-two credits in art, including at least eighteen credits in the studio major, six credits in electives, three credits in art history, two credits in the seminar in art, and three credits in master's essay. This program is offered under the following options:

Plan A: Thirty-two credits in course work, including eight credits for the thesis.

Plan B: Thirty-two credits in course work, including three credits for an essay.

Candidacy: All graduate students begin their work as Master's Applicants. After twelve credits have been completed, a *Plan of Work* must be signed by the adviser and submitted to the College graduate office (or the College of Liberal Arts graduate office if electing the

master's program in art history in that college). If the student has maintained a 3.0 honor point average and the *Plan* is accepted, his/her status is changed to Master's Candidate.

Master of Arts in Art History

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. The applicant must have an undergraduate or equivalent degree in art history, a minimum " average in undergraduate art history, and two years of college-level work in one foreign language with a 'B' (3.0) average (a minimum of four semester courses; German or French is required).

DEGREE REQUIREMENTS: This master's degree is offered under the following options:

Plan A: Thirty-two credits in course work, including at least six credits on the 7000-level and eight credits in thesis.

Plan B: Thirty-three credits in course work, including at least six credits on the 7000-level and three credits in essay.

Students may concentrate in one of the following areas, but must take at least one course in each: ancient, medieval, Renaissance/Baroque, modern (nineteenth and twentieth centuries). All students are required to take A H 5090, (WI) Theory and Methods of Art Historical Research, in their first year. Students must pass a comprehensive slide examination before the essay or thesis topic can be approved by the adviser.

Applicants should obtain from the Department a copy of *Guidelines for M.A. Degree Candidates in Art History* for more details.

Candidacy: see above under Master of Arts in Art degree.

Master of Arts in Design and Merchandising

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Applicants for a graduate degree in design and merchandising must have at least a 2.80 h.p.a. Persons lacking a limited number of prerequisites may be admitted on probation until completion of certain courses specified by the adviser. Undergraduate preparation should include a minimum of twelve credits in clothing and textiles, merchandising, and consumer affairs, with supporting courses in closely-related fields. The Graduate Record Examination (general section only) is required of all applicants. Additional requirements depend upon area of specialization.

Fashion Design and Merchandising: Undergraduate preparation must include a minimum of twelve credits in the area of merchandising, clothing and textiles, with supporting courses in art (including basic design), science, social science or business.

DEGREE REQUIREMENTS: The master's degree is offered under the following options:

Plan A: Requires a total of thirty-two credits, including a total of eight credits for a thesis.

Plan B: Requires a total of thirty-two credits, including a minimum of three credits for an essay.

The thesis or essay and at least one-half of all other credits, including the final seminar, must be in the major field. At least six credits in work in the major field, in addition to the essay or thesis, must be in courses numbered 7000-7999. It is strongly recommended that at least two courses be elected outside the Department of Art and Art History, and include a course in statistics.

Candidacy: see above under Master of Arts in Art degree.

Master of Fine Arts in Art

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Applicants who present a superior portfolio and hold a Bachelor of Fine Arts degree or a Master of Arts degree in art may apply for direct admission. During the semester in which an applicant in the Master of Arts in Art program will be completing a minimum of fifteen credits, the student

may be invited by the graduate review committee to apply for admission to the Master of Fine Arts program. If accepted, the applicant's fifteen credits in graduate study may apply toward the Master of Fine Arts degree.

In either case, the M.F.A. degree program demands superior qualification, potential, and commitment as an artist.

Candidacy must be established by the time eighteen credits have been earned. The applicant must file a copy of the *Plan of Work* with the adviser. An applicant becomes a degree candidate only upon recommendation by the graduate review committee.

DEGREE REQUIREMENTS: The Master of Fine Arts degree is offered under the following options:

Plan B: Sixty credits in art, including an essay.

Plan C: Sixty credits in art, including a specific project determined by the candidate's area of specialization.

Both Plan B or Plan C must be completed within three years. A minimum of sixty credits in art should include at least thirty-six credits in the studio major, nine credits in electives, six credits in art history, and three credits in the M.F.A. Seminar (ACS 8998), plus three credits in a contemporary theory and criticism course (usually A H 6730), and three credits in either Master's Essay or Fine Arts Project.

Full-time attendance is required in the program which generally requires four semesters of study, excluding the summer term. All M.F.A. candidates must also meet the following requirements:

1. A satisfactory review of the candidate's work.
2. An exhibition of the work produced for M.F.A. credit.
3. Submission for departmental files of twelve or more photographs or slides of the work and a brief, relevant, written statement.

This program provides the student with the opportunity for intensive work toward personal artistic goals. The entire graduate staff is available to the student for consultation and instruction.

ASSISTANTSHIPS and SCHOLARSHIPS

General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 30. See also the Academic Regulations of the College, above. The following information pertains to the Department of Art and Art History.

Graduate Teaching Assistantships are offered for a full academic year and include a stipend and a waiver of tuition for up to ten credits in the Fall and Winter terms. They are available on a limited basis and selection is determined by a combination of merit and the teaching needs of the Department. Consequently, assistantships are usually reserved for students on the advanced level of the M.F.A. program.

Departmental Scholarships: The scholarships listed below pertain to the Department. In addition, other private and institutional donors make scholarship funds available to the Department for students in art and art history. Detailed information on scholarships is available in the Art and Art History Office.

Albert and Peggy DeSalle Scholarship Fund: An award of variable amount open to any student in the Department specializing in metals or photography; based on financial need, artistic talent, and scholastic achievement.

Mary Kirk Haggarty Memorial Scholarship: An award of variable amount open to any student in the Department specializing in art history; based on past academic achievement and scholarly potential.

Linda Marlene Iden Scholarship: An award of variable amounts open to any student in the department specializing in one of the studio art areas; based on artistic talent, academic performance, and financial need.

John and Irene Sowinski Scholarship: An award of variable amount open to any student in the Department specializing in one of the studio art areas; based on financial need, artistic talent, and scholastic achievement.

Albert L. and Alice W. Steinbach Scholarship: An award of variable amount open to any student in the Department specializing in art history; based on past academic achievement and scholarly potential.

Presidential Scholarship: An award of \$1,000 offered to an incoming graduate student in recognition of outstanding past achievement and exceptional artistic potential.

GRADUATE COURSES

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

GRAPHIC DESIGN (AGD)

5250 Graphic Design III: Complexity and Variety in Design. Cr. 3 (Max. 18)

Prereq: AGD 4250, junior standing. Complex design situations. Research and methodology. Project may include package design, instruction manuals, book and brochure design, publication design. Material fee as indicated in the Schedule of Classes. (F,W)

5260 Senior Seminar. Cr. 3

Prereq: senior standing. Issues affecting the theory, history, and practice of design; impact of design on society and impact of society on design. Required readings, student presentations, class discussion, slide lectures, guest speakers. (W)

5700 Special Topics. Cr. 3 (Max. 6)

Prereq: AGD 4250, senior standing or junior standing with consent of instructor. Examination of specific issue in design theory, history or practice. Topics may include: corporate identity, globalization of design, exhibition design, design history. (Y)

5890 Directed Projects: Graphic Design. Cr. 3-6 (Undergrad. max. 9; grad. max. 18)

Prereq: consent of instructor. Individual problems. (F,W)

5990 Field Study: Internship. Cr. 3-6

Prereq: AGD 5250, consent of instructor. Written consent of instructor required if elected for more than three credits. Supervised field experience designated to correlate classroom theory with practical work. (T)

5997 Graphic Design IV: Systems, Series, and Advanced Studies in Visual Communication. Cr. 3

Prereq: AGD 5250, senior standing. Extended student projects such as identity systems with various applications, families of package design, series of form design, or poster series. Possible collaborative projects; extensive research. (F)

6260 Advanced Graphic Design Concepts. Cr. 3 (Max. 6)

Prereq: AGD 5250. Problem/solution exercises addressing advanced design in the following areas: corporate identity, packag-

ing, architectural, environmental, print advertising, publication, collateral, out-of-home, TV/video. (F,W)

6270 Graphic Design Practicum. Cr. 3

Prereq: senior standing, acceptance of portfolio. Students work on actual graphic design projects with clients from non-profit organizations. Initial discussion with client through delivery of printed work.

(Y)

7250 Graduate Problems in Graphic Design. Cr. 3-9 (Max. 24)

Prereq: AGD 5250. Election of more than three credits per semester requires consent of instructor. Individual problems in advanced advertising design. Material fee as indicated in the Schedule of Classes.

(F,W)

CERAMICS (ACR)

5550 (ACR 2550) Advanced Ceramics. (ACR 2560) (ACR 3550) (ACR 4550) (ACR 7550) Cr. 3-6 (Max. 12)

Prereq: ACR 4550. Open only to art majors in ceramics. Election of more than 3 credits per semester requires consent of instructor. Individual research including kiln building, firing and studio management. Individual philosophy and group critiques emphasized. Material fee as indicated in the Schedule of Classes.

(T)

5880 Directed Projects: Ceramics. Cr. 3-6 (Undergrad. max. 15; grad. max. 30)

Prereq: consent of instructor. Individual problems. Material fee as indicated in the Schedule of Classes.

(F,W)

7550 (ACR 2550) Graduate Problems in Ceramics. (ACR 2560) (ACR 3550) (ACR 4550) (ACR 5550) Cr. 3-9 (Max. 24)

Prereq: ACR 5550. Election of more than three credits per semester requires consent of instructor. Individual problems in advanced ceramics. Material fee as indicated in the Schedule of Classes.

(T)

8880 M.F.A. Studio: Ceramics. Cr. 3-9 (Max. 36)

Open only to M.F.A. students. Extended problems in ceramics; individual research with eighteen to twenty-seven hours of laboratory per week. Material fee as indicated in the Schedule of Classes.

(F,W)

DRAWING (ADR)

5060 Advanced Drawing. (ADR 7060) Cr. 3-6 (Max. 15)

Prereq: ADR 3070. Emphasis on individual projects using any appropriate medium. Students select subjects and approaches under faculty guidance; may include lectures, demonstrations, off-campus visits.

(Y)

5070 (ADR 2070) Advanced Life Drawing. (ADR 3070) (ADR 7070) Cr. 3-6 (Max. 24)

Prereq: ADR 3070. Election of more than three credits per semester requires consent of instructor. Continued study of human figure based on observation. Composition. Expressive interpretation of the figure through broad range of media. Material fee as indicated in the Schedule of Classes.

(F,W)

5080 Landscape Drawing and Painting. (ADR 7080) Cr. 3-6 (Max. 12)

Prereq: ADR 1060. Election of more than 3 credits per semester requires consent of instructor. Drawing and/or painting outside at a variety of urban and rural sites in the metropolitan Detroit area; students are expected to drive or carpool to locations within an hour of Detroit. Interpretation of landscape subjects through observation and imagination in any appropriate drawing or painting medium. This course will fulfill drawing or painting major requirements.

(S)

5090 Anatomy. Cr. 3

Prereq: ADR 2070. Superficial human anatomy including effects of muscular and skeletal systems. Drawing from both models and skeletons, lectures, demonstrations. Material fee as indicated in the Schedule of Classes.

(Y)

5800 Directed Projects: Drawing. Cr. 3-6 (Undergrad. max. 15; grad. max. 30)

Prereq: consent of instructor. Individual work supervised by faculty on arranged basis.

(F,W)

7060 (ADR 5060) Graduate Problems in Drawing. (ADR 7060) Cr. 3-9 (Max. 24)

Prereq: ADR 5060. Emphasis on self-directed projects with advice from faculty. May include lectures, demonstrations, and visits to off-campus sites.

(Y)

7070 (ADR 2070) Graduate Life Drawing. (ADR 3070) (ADR 5070) Cr. 3-9 (Max. 24)

Prereq: ADR 5070. Election of more than three credits per semester requires consent of instructor. Individual projects based upon study of the human figure. Broad range of media encouraged. Material fee as indicated in the Schedule of Classes.

(F,W)

7080 (ADR 5080) Landscape Drawing and Painting. Cr. 3-6 (Max. 12)

Prereq: ADR 1060. Election of more than 3 credits per semester requires consent of instructor. Drawing and/or painting outside at a variety of urban and rural sites in the metropolitan Detroit area; students are expected to drive or carpool to locations within an hour of Detroit. Interpretation of landscape subjects through observation and imagination in any appropriate drawing or painting medium. This course will fulfill drawing or painting major requirements.

(S)

8800 M.F.A. Studio: Drawing. Cr. 3-9 (Max. 36)

Open only to M.F.A. students. Extended self-directed work in drawing (eighteen to twenty-seven hours per week). Consultation with appropriate graduate faculty on an arranged basis.

(F,W)

FASHION DESIGN and MERCHANDISING (AFA)

5420 Fashion Design: Tailoring. Cr. 3

Prereq: AFA 2420. Tailoring techniques applied to coats and suits.

(F)

5430 History of Costume. Cr. 3

Prereq: one art history course or consent of instructor. Survey of historic costumes from prehistoric to present.

(F)

5440 Fashion Design: Flat Pattern. Cr. 3 (Max. 6)

Prereq: AFA 2420. Original designs from a basic sloper. Material fee as indicated in the Schedule of Classes.

(Y)

5450 Fashion Design: Draping. Cr. 3 (Max. 6)

Prereq: AFA 2420. Creation of an original garment by draping on a form. Material fee as indicated in the Schedule of Classes.

(I)

5460 Merchandising II. Cr. 3

Prereq: AFA 3460. Current trends in merchandising. Lectures by specialists.

(F)

5470 Visual Merchandising: Display. Cr. 3

Prereq: ADE 1200, ADE 1210, or consent of instructor. Visual merchandising concepts and trends. Relationship of design elements and principles to the tools and structures used in display. Creative experimentation in the various media. Material fee as indicated in the Schedule of Classes.

(F,W)

5490 Economics of Merchandising. Cr. 3

Prereq: completion of Math Proficiency Requirements. Application of business theory to merchandising; design and implementation of the merchandise plan.

(W)

5992 Supervised Field Experience. Cr. 2-4

Prereq: senior standing. Supervised field experience designed to correlate classroom theory with practical work.

(F)

5997 Seminar. Cr. 3

Prereq: junior standing. Topics to be announced in Schedule of Classes.

(F,W)

6440 Computer-Aided Design for Apparel Design. Cr. 3

Prereq: AFA 5440 or consent of instructor. Use of computer-aided design software applied to apparel design concepts; garment designing, grading, and marker-making. (W)

6993 Study Tour. Cr. 3

Prereq: consent of instructor. Group tour to major market sources; observation and analysis of products and marketing procedures. Topics to be announced in Schedule of Classes. (B:S)

7410 Practicum in Textile Testing. Cr. 3

Prereq: one course in textiles, one course in chemistry, or consent of instructor. No credit after AFA 3410. Recent developments in textiles; advanced physical testing techniques. (W)

7850 Seminar. Cr. 3

Prereq: consent of instructor. Topics to be announced in Schedule of Classes. (W)

7990 Directed Study. Cr. 1-4 (Max. 8)

Prereq: consent of instructor, adviser, and graduate officer. (F,W)

7991 Advanced Workshop: Selected Topics. Cr. 2-4 (Max. 6)

Application of theoretical principles in selected areas of design and merchandising. Topics and prerequisites to be announced in Schedule of Classes. (B)

7996 Research. Cr. 2-6 (Max. 6)

Prereq: consent of adviser.

FIBERS (AFI)

5650 (AFI 3650) Weaving: Senior Project. (AFI 7650) Cr. 3-6 (Max. 12)

Prereq: AFI 3650. Election of more than three credits per semester requires consent of instructor. Directed project in weaving. Research and written evaluative statement required. Material fee as indicated in the Schedule of Classes. (T)

5660 (AFI 3660) Fabric Printing and Dyeing: Senior Project. (AFI 7660) Cr. 3-6 (Max. 12)

Prereq: AFI 3660. Election of more than three credits per semester requires consent of instructor. Extensive project or series of works determined by student; research and written statement. Material fee as indicated in the Schedule of Classes. (T)

5870 Directed Projects: Fibers. Cr. 3-6 (Undergrad. max. 15; grad. max. 30)

Prereq: consent of instructor. Individual problems. (F,W)

7650 (AFI 3650) Graduate Problems in Weaving. (AFI 5650) Cr. 3-9 (Max. 24)

Prereq: AFI 5650. Election of more than three credits per semester requires consent of instructor. Advanced problems in weaving. Material fee as indicated in the Schedule of Classes. (T)

7660 (AFI 3660) Graduate Problems: Fabric Printing and Dyeing. (AFI 5660) Cr. 3-9 (Max. 24)

Prereq: AFI 5660. Election of more than three credits per semester requires consent of instructor. Individual problems in fibers. Material fee as indicated in the Schedule of Classes. (T)

8860 M.F.A. Studio: Fibers. Cr. 3-9

Open only to M.F.A. students with concentration in fibers. Supervised creative work done in the major concentration. (F,W)

INDUSTRIAL DESIGN (AID)

5300 (AID 3300) Industrial Design. Cr. 3-6 (Max. 15)

Prereq: AID 3300. Election of more than three credits per semester requires consent of instructor. Product design problems with emphasis on workability and form design. Sketches and three-dimensional models. Material fee as indicated in the Schedule of Classes. (F,W)

5310 (AID 3310) Advanced Presentation. Cr. 3-6 (Max. 18)

Prereq: AID 3310. Election of more than three credits per semester requires consent of instructor. Professional techniques in wet and dry media. Full size tape drawings and renderings. Sketch techniques in black and white and color. (F,W)

5997 Senior Seminar. Cr. 3

Prereq: senior standing in industrial design concentration. Seminar on contemporary issues in industrial design including professional concerns in transportation and product design, presentation, and production. (W)

6300 Transportation Design. (AID 7300) Cr. 3-6 (Max. 18)

Prereq: AID 3300. Election of more than three credits per semester requires consent of instructor. Materials fee announced in Schedule of Classes. Form and proportion investigations of various transportation systems. Repetition of course allows a more comprehensive development of a particular project. Material fee as indicated in the Schedule of Classes. (F,W)

6320 History of Industrial Design I. Cr. 3

Modern design in architecture, furniture, decorative and graphic arts, transportation forms, in terms of style. 1850-1910: Victorian sub-styles, Art Nouveau, Arts and Crafts movement, Beaux Arts, Vienna Secession. (F)

6330 History of Industrial Design II. Cr. 3

Period of 1910 to present: de Stijl, the Bauhaus, Art Deco, Streamlining, the International School, contemporary design directions. Twentieth century developments: aircraft, automobiles, industrial design, architecture, decorative and graphic arts. (W)

7300 (AID 6300) Graduate Industrial Design. Cr. 3-9 (Max. 24)

Prereq: AID 5300 or 6300. Election of more than three credits per semester requires consent of instructor. Individual problems in industrial design. Material fee as indicated in the Schedule of Classes. (F,W)

INTERDISCIPLINARY ELECTRONIC ARTS (AIN)

5220 Interactive Art. Cr. 3

Prereq: AIN 4220 Overview of multimedia software for visual and performing arts; improvised and controlled interaction between the artist, the computer, and interactive devices. Background and methodology for new media: web pages, CD-ROM's MIDI sound design, and virtual reality as art. Material fee as indicated in the Schedule of Classes. (F)

5830 Directed Projects: Computer/Video/Multimedia. Cr. 3

Prereq: consent of instructor. Individual problems in electronic arts. Material fee as indicated in the Schedule of Classes. (F,W)

6830 Internship: Computer/Video/Multimedia. Cr. 3

Prereq: consent of instructor. Supervised field experience in the area of creative computer graphics, computer animation, video, and multimedia and/or interactive media, that correlate with classroom theory and practical work. (F,W)

7220 Graduate Studio: Computer/Video/Multimedia. Cr. 3

Prereq: B.A. or B.F.A. degree. Course for M.A. and M.F.A. students. Material fee as indicated in the Schedule of Classes. (F,W)

INTERIOR DESIGN (AIA)

5010 Furniture/Product Workshop. Cr. 3

Prereq: AIA 1610; consent of instructor. Open only to interior design or industrial design majors. Design process of furniture and product design. Projects involve quarter-scale models, drawing, and shop techniques. (Y)

5600 History of Interiors. Cr. 3

Prereq: junior standing or consent of instructor. History of interiors from ancient periods to the present. Material fee as indicated in the Schedule of Classes. (F)

5610 Interior Materials and Systems. Cr. 3

Prereq: junior standing or above in interior design concentration. Estimating, specifying, and the techniques used in the application of materials and systems used in interior design. Lectures, guest speakers, and field trips. Material fee as indicated in the Schedule of Classes. (F)

5620 Building Construction Systems in Architecture I. Cr. 3

Prereq: AIA 2610. Open only to interior design majors. Introduction to modern structural systems, basic documentation of architectural details. (Y)

5630 Environmental Design Theory II: Lighting. Cr. 3

Prereq: AIA 3600 and 4600. Light sources, fixtures, selection and application in architectural interiors; energy efficiency, comfort, basic calculations. (W)

5640 Building Construction Systems in Architecture II. Cr. 3

Prereq: AIA 4600 and 5620. Preparation of detailed architectural working drawings for interior spaces. Material fee as indicated in the Schedule of Classes. (W)

5660 Supervised Field Experience. Cr. 3

Prereq: consent of program adviser. Open only to interior design majors. Supervised field study experience designed to correlate classroom theory with professional practice. (F,W)

5991 Directed Projects: Interior Design. Cr. 3-6 (Max. 9)

Prereq: consent of program coordinator. Open only to interior design majors. Individual problems. (F,W)

5997 Senior Seminar. Cr. 3

Prereq: consent of instructor. Senior standing. Topics to be announced in Schedule of Classes. (F,W)

6610 Interior Design Studio IV. Cr. 3

Prereq: AIA 4610. Projects involving large-scale facilities, adaptive re-use, and retail spaces. Integration of human factors as they relate to specific environments. Portfolio development. Material fee as indicated in the Schedule of Classes. (W)

6650 Business Practicum. Cr. 2

Prereq: AIA 4610. Open only to interior design majors. Examination of different types of business formations and their characteristics; professional practices and procedures, professional ethics, contemporary topics in interior design practice. (W)

7600 Research in Environmental Design. Cr. 3

Prereq: three courses in sociology and/or psychology. Experimental and theoretical work on the influence of the physical environment on human behavior: group and institutional setting. Individual research problems, verbal and graphic, applied to sample behavior settings. (W)

7850 Graduate Seminar: Contemporary Designers. Cr. 2

Prereq: consent of instructor. Topics to be announced in Schedule of Classes. (F,W)

7990 Directed Study. Cr. 1-4

Prereq: consent of adviser, instructor, and graduate officer. (Y)

METALS (AME)**5600 (AME 3600) Advanced Metal Arts and Jewelry Design. (AME 7600) Cr. 3-6 (Max. 24)**

Prereq: AME 3600. Election of more than three credits per semester requires consent of instructor. Comprehensive project development on an individual basis. Workshops in specialty areas. Material fee as indicated in the Schedule of Classes. (F,W)

5860 Directed Projects: Metal Arts.

Cr. 3-6 (Undergrad. max. 15; grad. max. 30)

Prereq: consent of instructor. Individual problems. (F,W)

7600 (AME 3600) Graduate Study in Metal Arts. (AME 5600) Cr. 3-9 (Max. 24)

Prereq: AME 5600. Election of more than three credits per semester requires consent of instructor. Individual problems. Directed study and project development in metal arts. Material fee as indicated in the Schedule of Classes. (F,W)

8860 M.F.A. Studio: Metal Arts. Cr. 3-9 (Max. 36)

Prereq: Open only to M.F.A. students with a graduate concentration in metals. Extended problems in metalsmithing; individual research with eighteen to twenty-seven hours of laboratory per week. (F,W)

PAINTING (APA)**5100 Painting Seminar. Cr. 3 (Max. 6)**

Philosophical and analytical inquiry into painting issues, past and present. Current values in art criticism and practice. Visits to studios, museums, galleries and private collections. (Y)

5110 (APA 2110) Advanced Painting: Water Media.

(APA 3110) Cr. 3-6 (Max. 18)

Prereq: APA 3110. Election of more than three credits per semester requires consent of instructor. Individual development of work in water media. Representational or abstract compositions. Material fee as indicated in the Schedule of Classes. (T)

5120 (APA 2120) Advanced Painting: Oil and Other Media.

(APA 3120) Cr. 3-6 (Max. 18)

Prereq: APA 3120. Election of more than three credits per semester requires consent of instructor. Individual development in painting. Material fee as indicated in the Schedule of Classes. (T)

5130 (APA 3130) Figure Painting Advanced: Water Media.

(APA 7130) Cr. 3-6 (Max. 12)

Prereq: APA 3130. Election of more than three credits per semester requires consent of instructor. Individual development in water media based on observation of human figure. Material fee as indicated in the Schedule of Classes. (Y)

5140 (APA 3140) Figure Painting Advanced: Oil and Other Media. (APA 7140) Cr. 3-6 (Max. 12)

Prereq: APA 3140. Election of more than three credits per semester requires consent of instructor. Individual development based on the human figure using any appropriate medium. Material fee as indicated in the Schedule of Classes. (Y)

5810 Directed Projects: Painting.

Cr. 3-6 (Undergrad. max. 15; grad. max. 30)

Prereq: consent of instructor. Self-directed work in consultation with graduate faculty on an arranged basis. (F,W)

7110 Graduate Problems in Painting: Water Media.

Cr. 3-9 (Max. 18)

Prereq: APA 5110. Election of more than three credits per semester requires consent of instructor. Individual development in water media painting. (T)

7120 Graduate Problems in Painting: Oil Media.

Cr. 3-9 (Max. 18)

Prereq: APA 5120. Election of more than three credits per semester requires consent of instructor. Individual work in painting. (T)

7130 (APA 3130) Graduate Problems in Figure Painting:

Water Media. (APA 5130) Cr. 3-9 (Max. 18)

Prereq: APA 5130. Election of more than three credits per semester requires consent of instructor. Individual development of images based on the human figure. Material fee as indicated in the Schedule of Classes. (Y)

7140 (APA 3140) Graduate Problems in Figure Painting:

Oil Media. (APA 5140) Cr. 3-9 (Max. 18)

Prereq: APA 5140. Election of more than three credits per semester requires consent of instructor. Individual development of images based on the human figure. Material fee as indicated in the Schedule of Classes. (Y)

8810 M.F.A. Studio: Painting. Cr. 3-9 (Max. 36)

Open only to M.F.A. students. Extended self-directed work in painting (eighteen to twenty-seven hours per week). Consultation with appropriate graduate faculty on an arranged basis. (F,W)

PHOTOGRAPHY (APH)**5420 (APH 4420) Advanced View Camera. Cr. 3-6 (Max. 9)**

Prereq: APH 4420. Election of more than three credits per semester requires consent of instructor. Refinement of view camera techniques and advanced lighting techniques. Material fee as indicated in the Schedule of Classes. (Y)

5430 (APH 4430) Advanced Color Photography. Cr. 3-6 (Max. 9)

Prereq: APH 4430. Election of more than 3 credits per semester requires consent of instructor. Open only to photography majors. Use of color as an expressive medium through a variety of color materials and lighting situations, and non-traditional use of color materials. (Y)

5440 Experimental Photography. Cr. 3-6 (Max. 9)

Prereq: APH 3410. Election of more than 3 credits per semester requires consent of instructor. Open only to photography majors. Work in non-traditional processes including image and emulsion transfer, hand-applied emulsions, laser copy and xerographic transfer. Material fee as indicated in the Schedule of Classes. (I)

5450 Selected Topics in Photography. Cr. 3-6 (Max. 9)

Prereq: APH 4410. Election of more than three credits per semester requires consent of instructor. Topics to be announced in Schedule of Classes. Material fee as indicated in the Schedule of Classes. (I)

5460 Photography Seminar. Cr. 3-6 (Max. 9)

Open only to photography majors. Election of more than 3 credits per semester requires consent of instructor. Independent work in advanced photography discussed in seminar format. Emphasis on major ideational concerns and execution and development of a critical vocabulary. (Y)

5850 Directed Projects: Photography. Cr. 3-9 (Undergrad. max. 15; grad. max. 30)

Prereq: consent of instructor. Individual problems. (F,W)

7400 Graduate Photography. Cr. 3-9 (Max. 24)

Election of more than three credits per semester requires consent of instructor. Individual problems in advanced photography. (F,W)

8850 M.F.A. Studio: Photography. Cr. 3-9 (Max. 36)

Open only to M.F.A. students. Extended problems in photography; individual research with eighteen to twenty-seven hours of laboratory per week. (F,W)

PRINTMAKING (APR)**5480 Advanced Intaglio Printmaking. (APR 7480) Cr. 3-6 (Max. 21)**

Prereq: APR 3480. Election of more than three credits per semester requires consent of instructor. Advanced problems in intaglio. Multi-plate and rollup color printing. Photo intaglio techniques, experimental media. Material fee as indicated in the Schedule of Classes. (F,W)

5490 (APR 3490) Advanced Lithography. (APR 7490) Cr. 3-6 (Max. 21)

Prereq: APR 3490. Election of more than three credits per semester requires consent of instructor. Advanced problems in lithography. Black and white, multicolor, transfer methods. Material fee as indicated in the Schedule of Classes. (F,W)

5500 (APR 3500) Advanced Serigraphy. (APR 7500) Cr. 3-6 (Max. 15)

Prereq: APR 3500. Election of more than three credits per semester requires consent of instructor. Advanced problems in screen printing.

Photo transfer, multi-media approaches. Material fee as indicated in the Schedule of Classes. (I)

5510 (APR 3510) Advanced Relief Printmaking. (APR 2510) (APR 7510) Cr. 3-6 (Max. 21)

Prereq: APR 3500 and 5490. Election of more than three credits per semester requires consent of instructor. Specialized problems involving experimental use of various print media and technologies; relief, collagraph, intaglio. Material fee as indicated in the Schedule of Classes. (I)

5840 Directed Projects: Printmaking. Cr. 3-6 (Undergrad. max. 15; grad. max. 30)

Prereq: consent of instructor. Individual problems. (F,W)

7480 (APR 5480) Graduate Intaglio. Cr. 3-9 (Max. 21)

Prereq: APR 3480. Election of more than three credits per semester requires consent of instructor. Advanced problems in intaglio. Multi-plate and rollup color printing. Photo intaglio techniques, experimental media. Material fee as indicated in the Schedule of Classes. (F,W)

7490 (APR 3490) Graduate Lithography. (APR 5490) Cr. 3-9 (Max. 21)

Prereq: APR 3490. Election of more than three credits per semester requires consent of instructor. Advanced work in lithography. Material fee as indicated in the Schedule of Classes. (F,W)

7500 (APR 3500) Graduate Serigraphy. (APR 7500) Cr. 3-9

Election of more than 3 credits per semester requires consent of instructor. Advanced work in serigraphy. Material fee as indicated in the Schedule of Classes. (I)

7510 (APR 3510) Graduate Relief and Collograph Printmaking. (APR 2510) (APR 5510) Cr. 3-6

Prereq: graduate standing in art. Graduate-level problems in woodcut, linocut, constructed relief and collograph printmaking. (Y)

8840 M.F.A. Studio: Printmaking. Cr. 3-9 (Max. 36)

Open only to M.F.A. students. Extended problems in printmaking; individual research with eighteen to twenty-seven hours of laboratory per week. (F,W)

SCULPTURE (ASL)**5160 (ASL 3160) Advanced Sculpture: Non-Figurative. (ASL 6160) (ASL 7160) Cr. 3-6 (Max. 18)**

Prereq: ASL 3160. Election of more than three credits per semester requires consent of instructor. Continuation of ASL 3160. Emphasis on advanced and self-directed problems in non-figurative sculpture. Material fee as indicated in the Schedule of Classes. (T)

5170 (ASL 3170) Advanced Sculpture: Figurative. (ASL 6170) (ASL 7170) Cr. 3-6 (Max. 18)

Prereq: ADR 3090 and ASL 3170. Election of more than three credits per semester requires consent of instructor. Emphasis on advanced and self-directed problems in figurative sculpture. Material fee as indicated in the Schedule of Classes. (Y)

5180 Sculpture: Advanced Technology. Cr. 3-6 (Max. 18)

Prereq: ASL 5160 or 5170. Election of more than three credits per semester requires consent of instructor. One major project which explores the application of non-traditional materials and technologies: research, industrial liaisons, equipment. Material fee as indicated in the Schedule of Classes. (I)

5820 Directed Projects: Sculpture. Cr. 3-6 (Undergrad. max. 15; grad. max. 30)

Prereq: consent of instructor. Individual problems. (F,W)

6160 (ASL 3160) Non-Figurative Sculpture. (ASL 5160) (ASL 7160) Cr. 3-6 (Max. 18)

Prereq: ASL 5160. Open only to sculpture majors. Election of more than 3 credits per semester requires consent of instructor. Continuation of ASL 5160. Expansion of concepts and expressive form.

Emphasis on portfolio of work and professional plans. Material fee as indicated in the Schedule of Classes. (T)

6170 (ASL 3170) Figurative Sculpture. (ASL 5170) (ASL 7170) Cr. 3-6 (Max. 18)

Prereq: ASL 5170 and 5180. Open only to sculpture majors. Election of more than 3 credits per semester requires consent of instructor. Continuation of ASL 5170. Emphasis on concepts and expressive form, portfolio of work and professional plans. Material fee as indicated in the Schedule of Classes. (Y)

7160 (ASL 3160) Graduate Problems in Non-Figurative Sculpture. (ASL 5160) (ASL 6160) Cr. 3-9 (Max. 18)

Prereq: ASL 5160 or equiv. Election of more than three credits per semester requires consent of instructor. Self-directed problems. Emphasis on graduate study and exhibition awareness. Material fee as indicated in the Schedule of Classes. (T)

7170 (ASL 3170) Graduate Problems in Figurative Sculpture. (ASL 5170) (ASL 6170) Cr. 3-9 (Max. 18)

Prereq: ASL 6170 or equiv. Election of more than three credits per semester requires consent of instructor. Self-directed problems. Emphasis on graduate study and exhibition awareness. Material fee as indicated in the Schedule of Classes. (Y)

8820 M.F.A. Studio: Sculpture. Cr. 3-9 (Max. 36)

Open only to M.F.A. students. Extended problems in sculpture; individual research with eighteen to twenty-seven hours of laboratory per week. (F,W)

COLLOQUIA, SEMINARS, and SPECIAL CLASSES (ACS)

5997 Senior Seminar in the Visual Arts. Cr. 3

Prereq: senior standing in a BFA degree program. Must be taken in final 15 credits before graduation. Interdisciplinary seminar on contemporary issues in the visual arts including studio practices, history, and criticism. (F,W)

7998 Seminar in Art. Cr. 2

Directed reading, research, bibliography. Offered fall semester only. (F)

7999 Master's Essay Direction. Cr. 1-3

(F,W)

8700 Master of Fine Arts Projects. Cr. 3

Open only to M.F.A. candidates. Execution of specific advanced projects as determined by adviser and M.F.A. candidate's advisory committee under Plan C. (F,W)

8998 Master of Fine Arts Seminar. Cr. 3

Open only to M.F.A. students. Concepts of art; contemporary art problems. (F)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

(F,W)

ART HISTORY (A H)

5010 Alternative Media. Cr. 3

Exploration of media not normally dealt with in courses on modernism: such as video, performance, installations, and computer technologies. (I)

5090 (WI) Theory and Methods of Art Historical Research. Cr. 3

Prereq: consent of instructor. Introduction to the methods of research in art history. History of the discipline's methodology examined through selected readings. (I)

5200 Early Greek Art. Cr. 3

Prereq: A H 1110, 1120. Aegean and Greek Art from the beginning of the Bronze Age (c. 3000 B.C.) to end of the Archaic period (c. 480 B.C.). (B)

5210 Hellenistic and Roman Art. Cr. 3

Prereq: A H 1110, 1120. Sculpture and painting in the Hellenistic kingdom and in Republic and Imperial Rome. (I)

5220 Ancient Greek Architecture. Cr. 3

Prereq: A H 1110. Architecture in the Greek world, c. 900 - 30 B.C. Design and function of buildings, sanctuaries and cities and how these relate to aesthetic, religious, political and social traditions. (I)

5250 Ancient Rome. Cr. 3

Prereq: A H 1110, 1120. Development of Rome into an imperial capital. Design, function and political significance of public monuments in the city. (I)

5260 Classical Greek Art. Cr. 3

Prereq: A H 1110, 1120. Greek painting, sculpture and architecture of the fifth and fourth centuries B.C. Emphasis on decorative programs of temples and cult statues. (I)

5300 Early Christian Art and Architecture. Cr. 3

Prereq: A H 1110, 1120. Art and architecture of the Mediterranean and Western Europe, A.D. 200-700. Formation and development of distinctive Christian tradition in context of the later Roman world. Emphasis on interaction between pagan, Christian and Jewish traditions. (B)

5310 The Ancient City of Athens. Cr. 3

Prereq: A H 1110, 1120. The history of Athens as an urban center in antiquity. Public monuments, buildings and landscape as reflecting the city's aspirations and fortunes. (I)

5320 Classical Architecture in Britain and the United States. Cr. 3

Prereq: A H 1110, 1120. Imitation and manipulation of ancient Greek and Roman architectural forms in Britain, its North American colonies and the United States from the seventeenth through the early nineteenth centuries. (I)

5400 Art and Architecture of the Early Middle Ages. Cr. 3

Art and architecture in Western Europe from the Dark Ages through the twelfth century. (I)

5410 Gothic Art and Architecture. Cr. 3

Gothic art and architecture in Western Europe from 1140 to 1400, including manuscripts, metalwork, stained glass, as well as the architectural context in which they were used. (I)

5420 Art and Architecture of Medieval Spain. Cr. 3

Prereq: A H 1110, 1120. Art and architecture of the Iberian Peninsula from sixth to 13th century: Christian, Jewish, Muslim; interplay between these cultures; impact on the visual arts will be stressed. (I)

5450 Romanesque Art and Architecture. Cr. 3

Prereq: A H 1110, 1120. The arts in western Europe (France, Germany, Italy, England) between 1050 and 1150; origins and spread of the Romanesque style in the milieu of monasticism and the Crusades. Metalwork, ivories, book illumination, stained glass and sculpture in the monastic church and cloisters. (I)

5500 Early Renaissance in Italy. Cr. 3

Art and architecture from Giotto to Botticelli; transformation of late medieval art prior to Black Death, classical revival in Florence; North Italian artists such as the Bellinis and Mantegna. (B)

5510 High Renaissance and Mannerism in Italy. Cr. 3

The art of Leonardo, Raphael, Michelangelo, Titian, and their contemporaries. (I)

5530 Northern European Painting in the Fourteenth and Fifteenth Centuries. Cr. 3

Northern painting from its sources in the Franco-Flemish manuscript tradition and Bohemian schools to the great masters of the fifteenth century. (B)

5550 Flemish and German Painting in the Sixteenth Century. Cr. 3

Development of Flemish and German painting from 1475 to 1600, with emphasis on the art of Bosch, Breugel, Durer, Grunewald and Holbein. (B)

5600 Baroque Art and Architecture in Italy, Spain and France. Cr. 3

Art and architecture in Papal Rome and at the courts of Madrid and Versailles, including Caravaggio, Bernini, Borromini, Velasquez, and Poussin. (B)

5700 Nineteenth Century European Painting. Cr. 3

Prereq: A H 1110, 1120. Major styles, developments and masters. (B)

5710 Trends in Nineteenth Century Art. Cr. 3

Prereq: A H 1110, 1120. Topics to be announced in Schedule of Classes. (B)

5720 Twentieth Century Art. Cr. 3

Prereq: A H 1110, 1120. Specific topics to be announced in the Schedule of Classes. (B)

5750 Contemporary American Art. Cr. 3

Prereq: A H 1110, 1120. Major developments in American painting and sculpture from the Armory Show to the 1970s. (I)

5760 German Expressionism. Cr. 3

German Expressionist painting and sculpture in Imperial Germany, the Weimar Republic, and the Nazi regime; members of Die Brucke, and Der Blaue Reiter and the independents such as Beckman, Kokoschka, and Barlach. (B)

5770 Paris in the Nineteenth Century. Cr. 3

Prereq: A H 1120. Social and economic change in nineteenth century Paris; impact on art from Romantics to Post-Impressionists. Reading in major works of literature and history. Dawn of modernism in painting. (B)

5780 Seminar: Topics in Twentieth Century Art History. Cr. 3

Prereq: A H 5720, 5750. Current issues in history and criticism of twentieth-century art. (Y)

5820 Precolumbian Art of South and Central America. Cr. 3

Prereq: A H 1110, 1120. Lecture-survey of art and architecture produced by the Precolumbian civilizations of Peru, Central America and Mexico, including the traditions of Chavin, Tiahuanaco, Inca, Maya, Olmec, Teotihuacan, Toltec and Aztec. (B)

5890 Museums in Art History. Cr. 3

Prereq: A H 1110, 1120. The development and function of the art museum from 300 B.C.E. to the present with emphasis on the museum's role in the institutionalization of art history, collection and criticism. (B)

5990 Directed Study. Cr. 1-3

Prereq: consent of instructor. Open only to art history majors. Supervised advanced reading and research in the history of art. (F,W)

5994 Undergraduate Seminar in Art History. Cr. 3

Prereq: A H 1120. Readings and discussion of a problem or issue in art history in a seminar format. Topics to be announced in Schedule of Classes. (B)

5997 Seminar. Cr. 3

Prereq: A H 1110, 1120. Readings, discussion, and research paper on special topics in art history; topics to be announced in Schedule of Classes. Graduate student s undertake research paper in addition to other assignments. (Y)

6010 (A H 6010) Women in the Visual Arts. (W S 6010) Cr. 3

Prereq: A H 5720 or consent of instructor. Women's role as both creator and subject in art of the contemporary period. (I)

6730 Contemporary Theory and the Visual Arts. Cr. 3

Undergrad. prereq: consent of instructor. Methodological application of post-structuralist critical theory to the study of art and art history. (Y)

7200 Seminar in Greek and Roman Art. Cr. 3-6 (Max. 9)

Election of more than three credits requires consent of instructor. Topics to be announced in Schedule of Classes. (B)

7300 Seminar in Medieval Art. Cr. 3-6 (Max. 9)

Election of more than three credits per semester requires consent of instructor. Topics to be announced in Schedule of Classes. (B)

7500 Seminar in Renaissance Art. Cr. 3-6 (Max. 9)

Election of more than three credits per semester requires consent of instructor. Topics to be announced in Schedule of Classes. (Y)

7700 Seminar in Modern Art. Cr. 3-6 (Max. 9)

Election of more than three credits per semester requires consent of instructor. Topics to be announced in Schedule of Classes. (F,W)

7999 Master's Essay Direction. Cr. 1-3

(F,W)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

(F,W)



COMMUNICATION

Office: 585 Manoogian Hall; 577-2943
Chairperson: Jack Kay
Graduate Officer: Matthew Seeger
Academic Services Officer: Victoria Dallas

Professors

Bernard L. Brock (Emeritus), Benjamin J. Burns, Jack Kay, Edward J. Pappas, Raymond S. Ross (Emeritus), George W. ZiegeImueller

Associate Professors

Jackie Byars, Larry D. Miller, Matthew W. Seeger, Lawrence Silverman (Emeritus), John W. Spalding (Emeritus), Robert Steele, Jack W. Warfield (Emeritus), Richard Wright

Assistant Professors

Nancy Baym, Sandra Berkowitz, Hayg Oshagan, Laura A. Wackwitz

Lecturers

Sandra Birdiett, Gerald A. Bluhm, Jack Lessenberry, Michele Najor, Christopher J. Schroll, Ruth A. Seymour

Graduate Degrees

MASTER OF ARTS with a major in *Communication and emphases in public relations and organizational communication; studies in radio-television-film; professional issues in radio-television-film; communication education; speech communication; or communication studies.*

DOCTOR OF PHILOSOPHY with a major in *Communication and emphases in speech communication; radio-television-film; or communication studies.*

The Department of Communication, organized administratively into Communication Studies and Professional Studies, offers several graduate degree programs. Most of these are housed in Communications Studies. Graduate level courses are offered regularly, however, through Professional Studies and are highly recommended, especially for those seeking M. A. degrees with a professional issues emphasis. Some M.A. degree emphases require cognate work, usually one course, in an allied department.

At the M.A. level, students may develop programs emphasizing communication and rhetoric, public relations and organizational communication, or communication education. Students may emphasize Professional Issues In Radio, Television and Film, which prepares them for a career in broadcast and cable television production and management, or a position in the corporate film and video industry. Studies in Radio, Television and Film is an emphasis designed for students who expect to pursue doctoral work.

The Ph.D. program stresses research courses and seminars in preparation for careers emphasizing a high degree of creativity and analytic facility with messages and message mediums across a variety of contexts. Theoretical grounding is essential at the doctoral level as is methodological diversity. Doctoral students, working with a faculty adviser and a research committee, develop programs of study which facilitate individual interests within a rigorous and stimulating intellectual climate. The Ph.D. program requires cognate course work, usually three courses, in allied departments. This is especially true if film studies is the major focus.

Facilities for individual research programs include radio/television studios, a film laboratory, small-group laboratories and extensive access to microcomputers and the Internet. Graduate students are encouraged to participate in faculty research projects as well as to initiate their own. The Department uses the cultural, industrial, and

scientific resources of the entire metropolitan area to enrich its programs and to spur research.

Master of Arts with a Major in Communication

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. The Department requires that the applicant have a minimum 3.0 ('B'=3.0) honor point average. A minimum of fifteen semester credits in the area of specialization is prerequisite. Applicants must also provide a one-page statement of career and educational objectives.

DEGREE REQUIREMENTS: The Master of Arts degree is offered by this Department under the following options:

Plan A: *Thirty-two credits, including an eight credit thesis.*

Plan B: *Thirty-two credits, including a three credit essay.*

Plan C: *Thirty-five to forty-eight credits in course work, plus written and/or oral comprehensive examinations over appropriate course content areas (total credits determined by major area of study).*

The graduate program should be planned as early as possible with the student's adviser. Candidacy must be established by filing an approved *Plan of Work* by the time twelve credits have been earned. SPB 7000 must be included in all *Plans of Work* and must be taken at the earliest opportunity. The Graduate Officer must approve all *Plans of Work*.

All course work must be completed in accordance with the academic procedures of the College of Fine, Performing and Communication Arts and the Graduate School governing graduate scholarship and degrees; see pages 153-154 and 16-30, respectively.

Essays or theses may be written in any of the principal fields in which students have an interest and faculty have expertise. A final oral examination is normally required of those writing theses.

CONCENTRATION REQUIREMENTS

Speech Communication: Students in this area are required to take SPB 7000 and at least one methodology course from the approved departmental list. The *Plan of Work* must be approved by the adviser and the Graduate Officer.

Communication Studies: The M.A. degree in communication studies is flexible and encourages students to sample broadly from the courses offered in the Department, while allowing a student to construct a program related to his/her particular interests. Students must complete appropriate content courses in speech communication, radio-television-film, and journalism as well as course work in theory and research methods. Courses which relate to the student's particular area of interest are chosen with the adviser upon filing the *Plan of Work*. Required courses include: SPB 7000 and two methods courses from the approved departmental list available from the Graduate Officer. One theory course is required as well as a minimum of three 7000-level courses beyond SPB 7000. The *Plan of Work* must be approved by the adviser and the Graduate Officer.

Plan A requires three credits in electives and an eight-credit thesis. Plan B requires eight credits in elective courses and a three-credit essay.

Public Relations and Organizational Communication: The M.A. degree in public relations and organizational communication is a professional degree emphasizing the theory and application of communication in a variety of contexts. The following courses (eighteen credits) are required: SPB 7000, SPC 5100, SPC 5160, SPC 6250, SPJ 6300, SPC 7160 or SPC 7240. One methods course should be selected from the approved departmental list, in consultation with an adviser. Two courses should be selected from the following electives (except for students under Plan A, who should select one course): SPC 5200, SPC 7110, SPC 6170, SPC 6190, SPC 6200, SPC 7102, SPC 7210, SPC 7260, SPC 8250. One course should be selected from the following radio-television-film and journalism electives: SPR 5400, SPR 5996, SPR 5530, SPR 7590, SPJ 5020. At least one additional elective is required from Marketing, or other Departments as appropriate.

The total minimum required credits, including the electives above, is thirty-two. Plan A requires the student complete an eight-credit thesis for a total minimum of thirty-two credits. Plan B requires the student complete a three-credit essay for a total minimum of thirty-two credits. Plan C requires the student to enroll in SPC 7220, Professional Issues in Applied Communication for a total minimum of thirty-five credits. Plan C is highly recommended.

Professional Issues in Radio, Television, and Film: This professionally-oriented degree program is for students interested in working in the radio, television, film and other mass communication or related industries. The program emphasizes the role of mass media in society, production, criticism, and the legal and economic environments of radio, television, and film.

Required Courses: A minimum of thirty-five credits in course work is required (plus a final written comprehensive examination), under the Plan C option, as follows: SPB 7000, SPR 5996, and SPR 7210 (ten credits); three to four credits in law-related courses: SPJ 5020 or FPC 5020; three credits in management courses: SPR 5550 or SPJ 5996; six to eight credits in criticism courses: SPF 5020, SPF 5060, SPR 7500, and/or SPR 7590; eight to eleven elective credits, selected with adviser's approval, from the following or other appropriate courses: SPR 5530, SPR 6670, SPC 5996, SPC 5040, SPC 6250, SPF 5460, SPJ 5310, SPJ 5700. The terminal seminar SPR 7220, Professional and Applied Issues (two credits) must be taken in the student's last semester of course work.

Studies in Radio, Television, and Film: This academically-oriented master's degree program is for students interested in radio, television, film, or other mass communication or related industries. This degree is appropriate for students interested in such areas as media research, media effects, theory and criticism, film criticism, archiving, and radio-television-film production and/or writing. It is an appropriate preparatory degree for doctoral work.

Required Courses: A minimum of thirty-two credits in course work (including an eight-credit thesis) is required for Plan A; a minimum of thirty-two credits in course work (including a three-credit essay) is required for Plan B. Required courses for either option include: SPB 7000, either SPR 7510 or SPR 7590 (or another methods course from the approved departmental list), and one additional 7000-level course in radio-television-film; at least one course selected from: SPR 5996, SPR 5530, SPR 5550, SPR 5570; and either SPF 5020 or SPF 5060.

Communication Education (Pedagogy): Students pursuing this emphasis should elect SPC 6060, 6070 and 7810; SPR 5996. Election of all course work must be approved by the adviser and the Graduate Officer.

Doctor of Philosophy with a Major in Communication

At the Ph.D. level the primary aim of the Department is to help students develop the theoretical basis and the analytical and research skills necessary for scholarly inquiry into various communication acts, processes and contexts. Courses in the Department are designed to serve several specific purposes:

1. To promote research and study into all aspects of the communication process and effects.
2. To provide intensive inquiry into professional communication areas such as radio, television, and film, organizational communication and public relations.
3. To prepare students for communication related careers in public service organizations and private business.
4. To prepare communication educators.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. In addition, applicants to the Ph.D. program in this Department must satisfy the following criteria.

Admission to the Department's Ph.D. program is competitive and is based on the student's entire academic record. The Department requires an M.A. degree with a minimum 3.5 ('B'=3.0) honor point

average, undergraduate and graduate work in the general field of communication, ability to write effectively, and demonstrable proficiency in speaking and reading. The Graduate Record Examination (GRE) is required of all Ph.D. applicants. Low GRE scores may be grounds for denial of admission to the Department's Ph.D. program. A Test of English as a Foreign Language (TOEFL) score of 600 is required of all students for whom English is not their native language.

In addition to completing all admission procedures in the Graduate School, the applicant for graduate study in communication must provide three letters of recommendation verifying academic interest and ability. The applicant should consult the Departmental Graduate Officer as needed.

DEGREE REQUIREMENTS consist of a minimum of ninety credits beyond the baccalaureate degree, thirty of which must be earned as dissertation credit. Ph.D. students must also complete two tool courses which do not count toward the required ninety credits. All course work must be completed in accordance with the academic procedures of the College of Fine, Performing and Communication Arts and the Graduate School governing graduate scholarship and degrees; see pages 153-154 and 16-30, respectively.

Additional Departmental requirements include: (1) SPB 8000 or its equivalent; (2) a departmental major and a minor outside the Department (normally three courses); (3) five courses in research methodologies germane to the dissertation research and the student's general research competencies (proficiency in a language pertinent to the student's research may be substituted for two of these courses); (4) successful completion of a written and oral comprehensive examination; (5) presentation and defense of a dissertation which makes a substantive contribution to the communication field. Additional requirements may be made by the student's advisory committee and the Departmental Graduate Committee.

FINANCIAL AID

General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 30. See also the Academic Regulations of the College, above. The following information applies to the Communication Department.

Graduate financial aid includes University graduate fellowships, graduate-professional scholarships, the National Direct Student Loan Program, King-Chavez-Parks Fellowships, Departmental awards, and student loans. For information, write to the Departmental Graduate Officer, and to the Office of Scholarships and Financial Aid.

Scholarships and Awards: For information on the awards listed below, contact the Department.

George Bohman—Rupert Cortright Award Fund: A departmental award of \$100-\$200 open to any student specializing in debate.

Raymond and Alice Hayes Scholarship Fund: A departmental award of \$150-\$200 open to any student specializing in debate.

George A. Kopp Memorial Scholarship Fund: An award of variable amount offered to full-time students, based on scholastic achievement, desirable qualities of leadership, and financial need.

Fellowships and Assistantships: Each year graduate assistantships and fellowships are awarded to qualified graduate students. Assistantships are awarded for teaching basic courses, and working with the forensic program and the University television station. Contact the Department for information.

GRADUATE COURSES

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number.

(Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

BASIC SPEECH (SPB)

5010 Special Topics in Communication. Cr. 1-4 (Max. 8)

Prereq: consent of instructor. Topics to be announced in Schedule of Classes. (I)

7000 Introduction to M.A. Studies in Communication Cr. 3

Required during first twelve credits of speech graduate study. Fundamental of scholarly research and writing at the graduate level. Required during first twelve hours of M.A. program in communication. (Y)

7990 Directed Study. Cr. 1-4 (Max. 4)

Prereq: consent of chairperson, adviser, and graduate officer. (T)

7991 Directed Study: Ph.D. Cr. 1-4 (Max. 4)

Prereq: consent of chairperson and graduate officer. Open only to doctoral students. Research in major field for advanced graduate students. (T)

7999 Master's Essay Direction. Cr. 1-3

Prereq: consent of adviser. (T)

8000 Introduction to Ph.D. Studies. Cr. 3

Introduction to perspectives, tools and methods of communication research. Required during first twelve credits of Ph.D. study in the Communications Department. (Y)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of adviser. (T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16

Prereq: consent of doctoral adviser. Offered for S and U grades only. (T)

SPEECH COMMUNICATION (SPC)

5010 Special Topics. Cr. 3 (Max. 9).

No more than six credits may be elected in special topics courses in any graduate degree program. Selected topics in speech communication to be announced in the Schedule of Classes. (B)

5040 The Rhetoric of Racism. (AFS 5040) (LIN 5040) (S E 5370) Cr. 3

Issues and topics related to the study of communication behaviors and patterns in the black community. Topics focus on specific cultural, rhetorical and sociological aspects of like in African American communities. (Y)

5050 Advanced Voice and Articulation. Cr. 3

Prereq: SPC 2040 or equiv. Intensive individual vocal drill on the development of vocal quality, strengthening the breathing muscles, development of pitch range and inflection, projection, rate, and articulation as used in mass communication, theatre, public address, and oral interpretation. Second half of course devoted to voice qualities and dialects for performance. Emphasis on individual attention. (B)

5100 Speech Writing. Cr. 3

Prereq: SPC 2100 or 2110 or consent of instructor. Preparation and presentation of speech manuscripts. Emphasis on style of writing, use of supporting materials and factors of interest. Special problems of ghost-writing considered. (Y)

5110 Studies of Argument. Cr. 3

Prereq: SPC 2110 or graduate standing. Used of argument in a variety of fields and contexts including: public and interpersonal contexts; law, religion and politics. Different methods of studying argument will be examined. (B)

5120 Great Speakers. Cr. 3

Prereq: SPC 2100 or consent of instructor. Analysis of speech texts and history with emphasis on various dimensions of rhetorical communication. Issues related to such topics as war/peace, church/state, political reform/civil rights, law/morality and wealth/poverty. Specific focus determined each term. (B)

5160 Public Relations Campaigns. Cr. 3

Prereq: SPC 3170 and 4170 or graduate standing. Theory and practice of selected topics in communication relating to contemporary public relations campaigns and current issues in public relations; corporate image and awareness campaigns; persuasive efforts of non-profit agencies; educational programs of consumer-related agencies; political and social campaigns. (W)

5170 Human Communication and Aging. Cr. 3

How time and experience impact human communication, as seen through the media and through narrative stories crafted from oral histories of selected seniors. (B)

5180 Family Communication. Cr. 3

Message patterns and social signals in organized, systemic human units that are interdependent, usually due to blood connections, legal bonds, and/or explicit verbal commitments. (B)

5200 Group Communication and Human Interaction. Cr. 3

No Ph.D. credit in speech communication. Theory, research, and practice in small group and interpersonal communication. Decision-making strategies; analysis of personal communication strengths. (T)

5220 Interviewing. Cr. 3

Theory and research on interviewing across a range of contexts. Topics include: constructing questions and protocols, listening, role, self-presentation, social understanding. Contexts include screening, counseling, legal, journalism and research. (Y)

5300 Women's Rights/Suffrage Rhetoric. Cr. 3

Prereq: SPC 2100 or 2160 or 2190 or graduate standing or consent of instructor. Analysis of speeches and writings of eighteenth through early twentieth century U.S. women's rights and woman suffrage activists. (B)

5550 Performance Workshop. Cr. 1-3 (Max. 6)

Prereq: SPC 2500 or equiv. Workshop in conjunction with oral interpretation activities: festivals, contests, public performances such as Interpreters Theatre productions and Readers' Bureau programs. (B)

5996 Communication Ethics. Cr. 3

Majors must elect in last 12 credits of study prior to graduation. Issues of responsible communication in a variety of contexts including mass, organizational, and interpersonal communication. Capstone course for undergraduate majors in speech communication and general communication. (B)

6010 Special Topics. Cr. 3 (Max. 9).

No more than six credits may be elected in special topics courses in any graduate degree program. Selected topics in speech communication to be announced in the Schedule of Classes. (B)

6040 Cultures and Rhetorics. Cr. 3

Prereq: SPC 2100, 2160 or graduate standing. Analysis of philosophical, social and cultural foundations of rhetorical theory and practice in different cultures. Cultural rhetorics include: African, Asian, Native American, Latin American, Arab, and Jewish. (B)

6060 Teaching Communication at the Secondary Level. (S E 6060) Cr. 3

Prereq: fifteen credits in speech. Philosophy, pedagogical issues, and methods for teaching speech in secondary schools. (I)

6070 Directing Forensics. Cr. 3

Prereq: SPC 2110. Philosophy and methods of directing high school and college forensics programs; techniques of coaching for debate, oratory, extempore speaking and other reading and speaking contests. (B)

6170 Theories of Interpersonal Communication. Cr. 3

Survey of theory and research on interpersonal interaction, with special emphasis on social perception, self-presentation, and the formation of relationships in interaction. (B)

6190 Internship. Cr. 1-3 (Max. 6)

Prereq: junior standing or above and at least 12 credits in SPC courses. On-the-job observations and work experience in business, service, social, governmental, and industrial organizations. Emphasis on public relations and organizational communication. (T)

6200 Theories of Small Group Processes. Cr. 3

Prereq: SPB 1010, SPC 5200. Theory and research on communication in the small, task-oriented group. (B)

6250 Organizational Communication. Cr. 3

Prereq: SPC 3250 or graduate standing. Theoretical review of the structure process and function of communication within and between organizations. Analysis of current and emerging issues in the theory and research of organizational communication. (W)

6350 Communication, Culture, and Conflict. (D R 6350) Cr. 3

Prereq: SPC 6250 or graduate standing. Overview of communication theory and practice as it relates to issues of culture, conflict and dispute resolution. (Y)

7010 Special Topics. Cr. 3 (Max. 9).

No more than six credits may be elected in special topics courses in any graduate degree program. Selected topics in speech communication to be announced in the Schedule of Classes. (B)

7040 Language of Oppression. Cr. 3

Prereq: graduate standing. Ways in which language is used as device of oppression and liberation. (B)

7110 Theory of Argument. Cr. 3

Prereq: SPC 2100 or 2110 or graduate standing. Advanced studies in argumentation, including the structure of reasoning, the organization of arguments, strategies of argument, and the nature of proof. (B)

7120 Contemporary Political Campaigns. Cr. 3 (Max. 6)

Prereq: SPC 2100. Study of methods for analyzing political campaigns; a critical evaluation of presidential campaigns from 1960 to the present. (F)

7130 Contemporary Social Movements. Cr. 3

Methods for analyzing social movements; critical evaluation of contemporary social movements such as: civil rights, feminist, gay and lesbian rights, white supremacy, and environmental. (B)

7160 Issue and Crisis Communication. Cr. 3

Prereq: SPC 6250 or consent of instructor. Theoretical review and case-study approach to issues faced by organizations in communicating with important environmental constituencies. Topics: proactive and reactive strategies, interorganizational networks, boundary spanning, resource dependency, managerial roles, environmental uncertainty, and crisis communication. (B)

7190 Classical Rhetorical Theory. Cr. 3

Prereq: SPC 2100 or 2110 or classical civilization major. Critical analysis of the Sophists, Plato, Aristotle, Cicero, and others on rhetoric. (B)

7200 Rhetorical Theory: Rome through the Renaissance. Cr. 3

Critical analysis of selected works on rhetoric from the Roman period, the Middle Ages and the Renaissance. (B)

7210 Communication Theory. Cr. 3

Prereq: SPC 5210. Systematic analysis of major twentieth century theories of communication, with a discussion of their historical and

philosophical foundations. Discussion and critical review of recent developments in communication theory. (Y)

7220 Professional Issues in Applied Communication. Cr. 2

Prereq: completion of all M.A. degree requirements or enrollment in last six credits. Open only to students in final semester of M.A. course work. Terminal seminar in public relations/organizational communication Master of Arts program. (Y)

7240 Communication Consulting and Training. Cr. 3

Prereq: SPC 6250 or consent of instructor. Theoretical and pragmatic approaches to the design and implementation of strategic communication changes in organizations. Topics: role of change, change strategies, behavioral and structural change, design of communication audits, communication training methods, and relations with client organizations. (B)

7250 Rhetorical Criticism. Cr. 3

Principles of criticism as applied to public address; analysis of standards and methods of evaluation; readings in modern criticism of public address. Research project. (B)

7260 Behavioral Research Methods in Communication. Cr. 4

Methods of data collection and analysis in communication research, approaches to measurement, research design, and other quantitative methods of communication research. (F)

7270 Computer-Mediated Communication. Cr. 3

Analysis of computer-mediated interaction in task-oriented and recreational contexts. Emphasis on discourse analysis, and interpersonal and group social processes including decision making and emergence of identity, behavioral norms, and social cues. Research projects. (Y)

7280 The Rhetoric of Kenneth Burke. Cr. 3

Kenneth Burke's theory of rhetoric as it evolved through his literary, social criticism, dramatism, and logology periods. (B)

7290 Contemporary Rhetorical Theory. Cr. 3

Exploratory analysis of a broad spectrum of recent works relevant to the art of discourse. (B)

7300 Feminist Rhetorical Criticism. Cr. 3

Prereq: SPC 7250 or consent of instructor. Investigation of philosophical and practical issues inherent in feminist approaches to rhetorical theory and criticism. (B)

7310 Rhetoric and Ideology. Cr. 3

Prereq: SPC 7250 or consent of instructor. Investigation of the intersection, nature, and relationship between rhetoric and ideology; current postmodern concepts of critical rhetoric. (B)

7810 Seminar in Communication Education. Cr. 3

Philosophy and approaches to teaching speech on the college level with particular emphasis on teaching SPB 2000, or its equivalent. Special topics include objectives, evaluation, motivation and teaching strategies. (F)

7820 Student Teaching of Oral Communication on the College Level. Cr. 3

Prereq. or coreq: SPC 7810. Offered for S and U grades only. (I)

7840 Studies in Communication Education. Cr. 3

Prereq: SPC 7810. Research in communication education: issues, trends and controversies as reflected in major journals. (I)

8120 History of Public Address. Cr. 3

Topics to be announced in Schedule of Classes. (I)

8230 Ethnographic Methods for Communication Research. Cr. 3

Prereq: SPB 7000 or SPB 8000 and Ph.D. standing or consent of instructor. Design, implementation and evaluation of ethnographic and participant/observation research studies in communication. (B)

8250 Approaches to Organizational Discourse. Cr. 3

Prereq: SPC 6250 and 7250, or consent of instructor. Advanced rhetorical analysis of the discourse of various organizations. (B)

8290 Special Topics in Communication Studies. Cr. 3 (Max. 9)

Topics to be announced in Schedule of Classes. (I)

8350 Advanced Study in Rhetorical Criticism. Cr. 3

Prereq: SPC 7250 or equiv. Study of important decisions in rhetorical criticism; two critical projects refined throughout the term in context of critical process, perspectives and approaches. (B)

FILM (SPF)

5020 Studies in Film History. Cr. 4 (Max. 12)

Prereq: FLM 2010 or FLM 2020; junior standing or above. Analysis of the development of a specific film genre, a director, or other historical aspect of the motion picture. Topics to be announced in Schedule of Classes. Material fee as indicated in the Schedule of Classes. (Y)

5060 Documentary and Non-Fiction Film. Cr. 4

Prereq: FLM 2010 or FLM 2020; junior standing or above. Study of the non-fiction film made for a social, cultural, or political purpose; screening and analysis of selected films. Material fee as indicated in the Schedule of Classes. (Y)

5250 Screenwriting. Cr. 3

Prereq: SPR 4210, ENG 3010, junior standing or above. Principles and techniques of writing for motion pictures. Analysis and study of professionally-written scripts. Exercises in writing documentary and dramatic film scripts. (Y)

5400 (SPR 5400) Techniques of Film/Video Production. Cr. 4

Prereq: completion of ten credits of film studies courses; junior standing or above. Experience with the preparation, shooting and editing of video projects in film-style production. Material fee as indicated in the Schedule of Classes. (T)

5440 Film Production. Cr. 4

Prereq: SPF 5400, senior standing or above, production-ready script, consent of instructor. All aspects of 16mm sound motion picture production from scripting and budgeting through direction and cinematography to post-production AB roll editing and sound mixing. (B)

5460 Motion Picture Animation Techniques. Cr. 3

Prereq: junior standing or above. Theory and application of various forms and styles of film animation. Material fee as indicated in the Schedule of Classes. (B)

7250 Advanced Screenwriting. Cr. 3

Prereq: SPF 5250 or consent of instructor. Research and writing for creation of full-length dramatic or documentary film and television scripts. (F,W)

8520 Seminar in Film. Cr. 3 (Max. 9)

Topics vary with instructor. Consult the Departmental office. (B)

JOURNALISM (SPJ)

5020 History and Law of American Journalism. Cr. 4

Prereq: junior or senior standing. History of the press in America; emphasis on development of law relating to communication and development of the media's effect on the law. (T)

5210 Newsletters and Corporate Publications. Cr. 4

Prereq: SPJ 3210. Editing journalism newsletter; field trips to area magazines; editing internal publications. Journalism skills course. Material fee as indicated in the Schedule of Classes. (T)

5260 Professional Writing Workshop. Cr. 3

Prereq: senior standing or above. For students and professionals who want to improve freelance writing skills, and for graduate students who want to publish academic research in popular magazines and journals. (I)

5300 Desktop Publishing. Cr. 4

Practical skills course in publishing newsletters, magazines, newspapers and books; emphasis on new computer technology, so-called 'desktop publishing;' business aspects of publishing, including printing, promotion and marketing; skills in use of personal computer for publishing. (I)

5310 Investigative Reporting. Cr. 4

Prereq: SPJ 2100 and 3210. Advanced reporting techniques involving use of Freedom of Information Act and computer-assisted data base searches; accessing public records. (I)

5460 Magazine Writing. Cr. 3

Prereq: SPJ 2100 and 4100 or consent of instructor. Advanced feature writing: preparation of magazine features. Students focus on limited number of in-depth articles. Research, structure and writing techniques to produce publishable magazine-length articles. (Y)

5500 Publishing on the Internet. Cr. 3

Prereq: SPJ 5300. Technique and goals of publishing on World Wide Web. Preparing graphics, learning HTML, uses of World Wide Web. (Y)

5700 Political and Governmental Reporting. Cr. 4

Prereq: SPJ 2100, 4100. Covering politics, governmental and public affairs in the media. (Y)

5996 (SPR 5996) Professional Issues in News Media Management. Cr. 3

Prereq: SPJ 4100 or consent of instructor. Majors must elect in last 12 credits of study prior to graduation. Capstone course: key issues of ethics and management in journalism. (Y)

6190 Internship. Cr. 1-3 (Max. 6)

Prereq: SPJ 4100 and junior standing. Work assignments on daily or weekly newspapers, radio-television stations or public relations and advertising agencies. Journalism skills course. (Y)

6300 Advanced Desktop Publishing. Cr. 3

Prereq: SPJ 5300. Advanced planning, development and production processes essential to creation of corporate publications; including brochures, newsletters, annual reports, marketing collateral materials, grant and proposal documents. Writing and strategic communication emphasis. (Y)

RADIO and TELEVISION (SPR)

5030 Studies in Television Criticism and Theory. Cr. 3

Prereq: grade of 'C' or better in SPR 3010, or consent of instructor. Analysis of development of a television genre, comparison of genres, or specific approach to television criticism. (B)

5210 Advanced Radio-Television-Film Writing. Cr. 3 (Max. 6)

Prereq: SPR 4210, junior standing or above. Principles and practice in creating the full-length dramatic or documentary script for broadcast or film production. (Y)

5400 Techniques of Film/Video Production. (SPF 5400) Cr. 4

Prereq: SPR 4310, 4410. Experience with the preparation, shooting and editing of video projects in film-style production. Material fee as indicated in the Schedule of Classes. (T)

5420 Director's Workshop. Cr. 4

Prereq: SPR 4310, 4410, 5400; senior standing or above; production-ready script; consent of instructor. Organization and execution of the film and video director's tasks through production of a major creative project. Material fee as indicated in the Schedule of Classes. (Y)

5530 Audience Measurement and Survey Techniques. Cr. 3

Prereq: completion of at least twelve credits in SPR courses; junior standing or above. Theory and application of quantitative research techniques in surveying audiences for electronic media. (B)

5570 International Communications. Cr. 3

Prereq: SPR 2010; junior standing or above. World mass communications systems, organizations and objectives. Political, economic and legal foundations of international media systems. (B)

5996 Media Management and Ethics. (SPJ 5996) Cr. 3

Capstone course for seniors in professional studies sequences of journalism and radio/TV. Ethics and management structure and practices of media organizations. Individual research projects. (T)

6190 Internship. Cr. 1-3 (Max. 8)

Prereq: junior standing or above and at least 12 credits in SPR courses. (T)

6680 Individual Projects in Radio-Television-Film. Cr. 3 (Max. 6)

Prereq: SPR 5310 or 5400 or 5410; senior standing or above recommended; consent of instructor. (T)

7210 Graduate Introduction to Writing for Radio-Television-Film. Cr. 4

Prereq: graduate standing. Integrated writing and production skills between the four forms of writing for electronic media: persuasive, expository, journalistic, and dramatic, and the forms of electronic media production: audio, TV-studio, TV-field, and film. (T)

7220 Professional and Applied Issues in Radio-Television-Film. Cr. 2

Prereq: all coursework in professional studies in Radio-TV-Film Master of Arts program. Terminal seminar for the master's degree program in which students explore the role of radio, Television, and film in society. Preparation of professional portfolios and complete comprehensive exam. (Y)

7420 Seminar in Directing Film and Video. Cr. 4

Prereq: SPF 7250, production-ready script, consent of instructor. Research and production of film and videotapes for professional distribution and exhibition. (F,W)

7500 Seminar in Mass Communications. Cr. 3 (Max. 9)

Topics vary according to instructor. Students should consult with area office. (Y)

7510 Seminar in Mass Media Research. Cr. 3 (Max. 9)

Conceptualization, measurement and analysis approaches and issues in mass communication research. Original research developed in class and carried out singly or collaboratively under instructor's supervision. (Y)

7520 Seminar in Media Effects. Cr. 3

Survey of theory and research in mass communication effects on individuals and social systems. Examination of the processes of mass media influence and of the role of mass communication in society. (Y)

7560 Seminar in Media Production. Cr. 3 (Max. 6)

Research in individual problem areas of media production, including legal requirements, union involvement, the logistics of studio and location arrangements, or the roles of support agencies. (B)

7580 Content Analysis. Cr. 3

Theory and practice in quantitative techniques for analyzing media content. (B)

7590 Criticism of Mass Media. Cr. 3

Theory and practice in the aesthetic analysis of media content and form. (B)

7700 Mass Media and Political Communication. Cr. 3

Mass media research methods for political communication studied and applied. (I)

8570 (IT 7140) Interactive Courseware Design. Cr. 4

Prereq: I T 6110; Windows literacy recommended. Design, development and production. Demonstration of Authorware Professional authoring software; production tools and techniques; instructional systems design procedures in development and evaluation of 30-45 minute instructional module. (Y)

DANCE

Office: 3226 Old Main; 577-4273

Chairperson: Eva Jablonowski-Powers

Associate Professors

Eva Jablonowski-Powers, Ann Zirulnik (Emerita)

Assistant Professors

Linda Cleveland-Simmons, Georgia Reid

Courses offered by the Department of Dance include study in dance technique, choreography, theory and pedagogy. Students who have an undergraduate major in dance may select a program leading to teacher certification. The program also provides considerable opportunity for choreography and performance through the Dance Company. Admission to the Dance Company is by audition only.

For information about a future master's program in this department, contact the chairperson.

FINANCIAL AID: General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 30. See also the Academic Regulations of the College, above. The following information applies to the Dance Department.

Dance Program Award: Award of variable amount open to any full-time student majoring in dance, awarded in by the Department in the winter term. Contact the Department for details.

GRADUATE COURSES

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

DANCE (DNC)

5000 Performance Tour. Cr. 1 (Max. 8)

Prereq: DNC 5610 or 6610. Open by audition only. Development and performance of informal concerts for elementary, middle and secondary schools. (W)

5110 Study in Dance Styles. Cr. 1 (Max. 16)

Examination of a particular dance style; i.e., historic period, technique, jazz, tap, fad and social dance forms. (T)

5200 Survey of World Dance. Cr. 4

Assigned readings, writing, field trips, laboratory experiences. Multi-cultural diversity in thought and discipline; interdependent nature of dance; global perspective and definition. (F,W)

5410 Dance Notation I. Cr. 2

Background in movement or dance is desirable. Labanotation of dance and movement; survey of other systems. Analysis and recording of movement and dance. (B;W)

5460 Music and Dance in the Music Class II. (MED 5580) (TED 5460) Cr. 1-2

Prereq: consent of instructor. Continuation of DNC 5440; added experience using the Orff instrumentation for accompaniment. (S)

5550 Choreography II. Cr. 3

Prereq: DNC 4550 or equiv. Selection of dance themes, construction of dances, small group studies. Aesthetic considerations, form and elements of performance. (B)

5610 Dance Company I. Cr. 1 (Max. 8)

Prereq: admission by audition. Coreq: DNC 4010 or 6010. Performing company. Open to students interested in performing and/or choreographing. Four credits required for dance majors. (F;W)

5710 Workshop in Modern Dance. Cr. 1-6 (Max. 12)

A concentrated period of advanced dance study in technique, composition and repertory, often with a visiting artist. (F;W)

5800 Repertory. Cr. 1-4 (Max. 12)

Prereq: DNC 4010 or equiv.; admission by audition. Learning, for performance, of standard modern repertory, dances previously choreographed by instructor, Labanotated dance, or work of Artist-in-Residence. (F;W)

5810 Creative Dance for Children. (DNE 5810) (TED 5810) Cr. 3

Approaches to creative dance experiences for children stressing the development of aesthetic and kinesthetic awareness. Focus on comprehensive arts and curriculum related materials. (F)

5820 Creative Dance Movement for the Pre-School Child. (TED 5820) Cr. 3

Creative dance activities; manipulative, musical, imaginative and kinesthetic approaches to movement. (W)

5830 Field Work in Creative Dance. (TED 5830) Cr. 2-8

Prereq: DNC 5810 or consent of instructor. Supervised professional study in field settings. (T)

5990 Independent Study in Dance. Cr. 1-4 (Max. 12)

Prereq: major or minor in dance. Independent work in dance under faculty guidance. (T)

5996 Choreography III. Cr. 3 (Max. 6)

Prereq: DNC 5550, choreography selected and produced in three WSU concerts. Group and solo choreography, costume design and construction, notation of selected movement phrases and production of the solo work. (W)

6010 Technique Laboratory III. Cr. 1 (Max. 8)

Prereq: DNC 4010 or equiv. Modern Dance technique, advanced level. (F;W)

6610 Dance Company II. Cr. 1 (Max. 8)

Prereq: DNC 5610 or equiv. Required for students in the choreography and performance emphasis. Admission by audition. Performing company. Performing, choreographic and/or production responsibilities. (F;W)

7999 Master's Essay and Project Direction. (DNE 7999) Cr. 3

Prereq: consent of adviser. Development and review of project outlines. Graduate students present proposed studies for analysis by faculty and students in seminar. (T)

DANCE EDUCATION (DNE)

5810 (DNC 5810) Creative Dance for Children. (TED 5810) Cr. 3

Approaches to creative dance experiences for children stressing the development of aesthetic and kinesthetic awareness. Focus on comprehensive arts and curriculum related materials. (F)

7999 (DNC 7999) Master's Essay and Project Direction. Cr. 3

Prereq: consent of adviser. Development and review of project outlines. Graduate students present proposed studies for analysis by faculty and students in seminar. (T)



MUSIC

Office: 1321 Old Main; 577-1795

Chairperson: Dennis J. Tini

Associate Chairperson: James P. Lentini

Graduate Officer: Mary Wischusen

Academic Services Officers: Lee Dyament, Leah Robinson

Professors

Harold Arnoldi (Emeritus), Mark F. DeLeonard (Emeritus), Ray P. Ferguson (Emeritus), James J. Hartway, Morris Hochberg (Emeritus), Malcolm M. Johns (Emeritus), Joseph A. Labuta (Emeritus), Robert F. Lawson (Emeritus), Dennis J. Tini, C. William Young (Emeritus)

Associate Professors

Lillian J. Cassie (Emerita), Carol J. Collins (Emerita), Bohdan J. Kushnir (Emeritus), James Lentini, Kypros Markou, Matthew Michaels, Doris Richards, Mary Wischusen

Assistant Professors

Frances Brockington, Christopher Collins, Robert Townsend, Stephen Zdzinski

Lecturers

Douglas Bianchi, Karl Braunschweig, Robert Conway, Thomas Court, Norah Duncan, JoAnn Richardson

Adjunct Professors

Brazeal Dennard, David DiChiera, Neeme Jarvi

Program Directors

Douglas Bianchi (brass), Frances Brockington (voice), Christopher Collins (music management), Robert Conway (keyboard), Paul Ganson (woodwinds), James Hartway (theory and composition), James Lentini (music technology), Kypros Markou (strings), Matthew Michaels (jazz studies), Dennis Tini (choral), Robert Townsend (music education)

Adjunct Performance Faculty — Part-Time

Geoffrey Applegate (violin), Emily Austin (violin), Italo Babini (violin-cello), Clement Barone (flute), Emmanuelle Boisvert (violin), Marcy Chanteaux (violin-cello), Keith Claeys (percussion), Mario Difiore (violin-cello), Marguerite Deslippe-Dene (violin), Lee Dyament (guitar), Paul Ganson (bassoon), Robert Gladstone (string bass), Oliver Green (clarinet), Carolyn Grimes (voice), Morris Hochberg (violin), William Horner (trumpet), Maxim Janowsky (string bass), David Jennings (trumpet), Ronald Kischuk (trombone), Gale Kramer (organ), Oscar LaGasse (tuba), Min-Duo Li (piano), Lawrence Liberson (clarinet), Pauline Martin (piano), Glenn Melow (viola), Steven Molina (string bass), Ervin Monroe (flute), Theodore Oien (clarinet), Salvatore Rabbio (percussion), Brian Roberts (guitar), Richard Robinson (bass), Lenore Sjoberg (violin), Joseph Skrzynski (trombone and baritone), Joseph Striplin (violin), Anna Speck (voice), Patricia Terry-Ross (harp), George Troia (trombone), Sam Tundo (percussion), James Van Valkenburg (viola), Brian Ventura (oboe), Eugene Wade (French horn), Robert Williams (bassoon)

Adjunct Jazz Faculty — Part-Time

Gary Blumer (piano), Jack Brokensha (vibes), Steven Carryer (guitar), Maurice Davis (trumpet), Earl DeForest (saxophone), Kenny Everts (percussion), Ed Gooch (trombone), David Jennings (trumpet), Ronald Kischuk (trombone), Gary Leach (bass), Joseph LoDuca (guitar/film music), Don Mayberry (bass), Jerry McKenzie (percussion), Russell Miller (ensembles), Larry Nozero (woodwinds), Dan Pliskow (bass), Ernest Rodgers (ensembles), Eddie Russ (piano), James Ryan (percussion), David Taylor (percussion), John Trudell (trumpet)

Graduate Degrees

MASTER OF ARTS with a major in music

MASTER OF MUSIC with a concentration in composition, choral conducting, theory, performance, and music education

CERTIFICATE IN ORCHESTRAL STUDIES

Because of the technical demands and intellectual breadth of the discipline of music, most serious music students find it necessary to build upon their undergraduate studies by continuing work at the graduate level. The Department of Music provides the program, faculty specialists, and learning resources for advanced study, as well as a metropolitan setting ideal for contacts with cultural institutions to facilitate career advancement.

MASTER'S DEGREES

The Master of Arts degree is designed for students who desire to pursue an academic career in music theory or musicology through a broad Liberal Arts curriculum. The Master of Music degree provides a program for talented students pursuing professional concentration in 1) performance, 2) composition, 3) theory, 4) choral conducting, or 5) music education.

Admission to these programs is contingent upon admission to the Graduate School; for requirements, see page 16. In addition, master's degree applicants in music must satisfy the following criteria. The student should apply to Wayne State University Graduate School as a Music Major. The student must possess an undergraduate degree in the same field for which he or she wishes to pursue graduate study, or its equivalent in course work, private study, and experience as determined by examination, audition or interview, and review of transcripts. All applicants for graduate degrees are required to pass the departmental theory and history examinations. Furthermore, all students desiring to pursue any of the Master of Music curricula must be certified for entrance into the program through further examination and/or audition by the Divisional Director or a designee in the area of concentration.

DEGREE REQUIREMENTS: The master's degree is offered by this Department under the following options:

Plan A: *Twenty-four credits in course work, plus an eight credit thesis. An original composition approved by the Divisional Director of Theory/Composition substitutes for the thesis in the M.M. degree with a concentration in composition.*

Plan B: *Twenty-nine credits in course work, plus a three credit essay.*

Plan C: *Thirty-two credits in course work, plus a recital. (Thirty-four credits including two recitals for vocal performance majors.)*

Candidates for the Master of Arts degree with a major in music, and the Master of Music degree with concentration in theory or composition, must elect Plan A. Plan B is open to candidates for the degree of Master of Music in Music Education. Candidates for the Master of Music degree with a concentration in performance or choral conducting must elect Plan C.

Oral Examination: An oral examination is required of all students.

Candidacy must be established by the time twelve credits have been earned toward the master's degree. Applicants become degree candidates only upon recommendation of the departmental Graduate Program Director and submission of an approved *Plan of Work*. Before a student can be admitted to candidacy in the Master of Arts curriculum, satisfactory completion of a reading examination in a foreign language (preferably German or French) is required.

Scholarship: The University requires that each student achieve a minimum honor point average of 3.0, in order to be eligible for a graduate degree. Grades of 'C' and below are considered unsatisfactory and constitute valid cause for dropping a student from graduate study. However, the Department of Music permits a student to accumulate a maximum of six semester credits of 'C' in a graduate program, offset by an equal number of credits of 'A' in order to maintain the minimum 3.0 honor point average. Credits of 'C' in excess of six will result in dismissal from the program, regardless of whether the

courses are included on the student's *Plan of Work*. All course work must be completed in accordance with the academic procedures of the College of Fine, Performing and Communication Arts and the Graduate School; see pages 153-154 and 16-30, respectively.

Master of Arts With a Major in Music

Prerequisite: The student must present a minimum of forty-five acceptable undergraduate credits in music distributed according to the requirements for the Bachelor of Arts degree with a major in music or its equivalent.

DEGREE REQUIREMENTS	Credits
Theory and Music History — MUT 7XXX and MUH 73XX (minimum of six credits in each, other than MUH 5300 and directed study courses)	14
MUH 5300	3
MUP 72XX or MUA 78XX	2
Music electives or cognates	5
MUH 8999	8
Total:	32

Master of Music

With a Concentration in Composition

Prerequisite: Bachelor of Music with a concentration in theory or composition. Candidates for this degree must have had prior training in composition; must be prepared to present scores for evidence of proper preparation; and must be accepted into the curriculum by the Program Director.

DEGREE REQUIREMENTS	
Music Theory — from: MUT 5040, 5060, 7000, 7020, 7050, 7100	13
Music History — MUH 730X (other than directed study courses)	6
MUH 5300	3
MUP 72XX or MUA 78XX	2
MUH 8999—an original composition in one of the larger forms of a minimum of twelve minutes duration approved by the adviser and separate from the work done in MUT 7100	8
Total:	32

— With a Concentration in Theory

Prerequisite: Bachelor of Music with a concentration in theory or composition; acceptance into the program by the Program Director.

DEGREE REQUIREMENTS	
Music Theory — from: MUT 5040, 5060, 7000, 7020, 7050, 7100 (max. 3 cr.)	13
Music History — MUH 730X (other than directed study courses)	6
MUH 5300	3
MUP 72XX or MUA 78XX	2
MUH 8999	8
Total:	32

— With a Concentration in Choral Conducting

Prerequisites: Baccalaureate degree with a concentration in voice, organ/church music, conducting, or the equivalent in course work experience. Applicants must demonstrate proficiencies in the areas of score reading and piano facility. All applicants must be accepted into the curriculum by the Program Director.

DEGREE REQUIREMENTS	
MUH 5300	3
Music History — MUH 730X (other than directed study courses)	6
MUT 7020 and other Music Theory courses except directed study courses	6
MUA 7450, Advanced Conducting: Choral and Orchestral	9
MUH 7370, Studies in Choral Literature	3
MUP 72XX	2
MUA 78XX	3
Graduation recital and research paper required	
Total:	32

— With a Concentration in Instrumental Performance

Prerequisite: Bachelor of Music with a major in instrumental performance; acceptance into the program by the Program Director for Instrumental Performance.

DEGREE REQUIREMENTS	Credits
MUP—72XX series—Principal Instrument (max. 12 credits)	9
MUA 7880	1
Music Theory — MUT 70XX (other than directed study courses)	6
Music History — MUH 73XX (other than directed study courses)	6
MUH 5300	3
MUA 780X	2
Music Electives	5
Graduation recital required	
Total:	32

— With a Concentration in Vocal Performance

Prerequisite: Bachelor of Music with a major in vocal performance; acceptance into the program by the Program Director for Vocal Performance.

DEGREE REQUIREMENTS	
MUP 7220	9 (Max. 12)
MUH 5300	3
MUH 5350	3
MUH 5370, 5380	6
MUH 6320, 6330	6
MUT 7020	2
MUA 7860, Opera Workshop	3
MUA 7890 (Chamber Recital with paper)	1
MUP 8290 (Solo Recital with paper)	1
Total:	34

— With a Concentration in Music Education

Prerequisite: Bachelor of Arts or Science or Music with concentration in Music Education; acceptance into the program by the Program Director for Music Education.

DEGREE REQUIREMENTS	
Music Education—including MED 7999	18
Music History — MUH 73XX (other than directed study courses)	6
MUH 5300	3
MUP 72XX or MUA 78XX	1
Electives	4
Total:	32

Certificate in Orchestral Studies

The Graduate Certificate Program in Orchestral Studies is intended for instrumentalists with an interest in pursuing advanced and intense training in the art of orchestral playing. Even though it is primarily intended for musicians with an undergraduate or graduate degree in music, candidates with degrees in other fields will be considered if they can demonstrate extensive musical experience including advanced skills on an orchestral instrument.

Admission to the program is contingent upon admission to the Graduate School, see page 16. A candidate should possess either an undergraduate degree in music or its equivalent in course work, private study, and experience as determined by examination, audition or interview, and review of transcripts.

Prerequisite: Bachelor of Music with a Concentration in instrumental performance or its equivalent as described above, acceptance into the program by the Certificate Program director.

CERTIFICATE REQUIREMENTS:	credits
MUP 72XX series, principal instrument (Max 12 credits)	9
MUA 7810, University Symphony Orchestra	3
MUA 7880, Orchestral 'Repertory'	3
Total:	15

FINANCIAL AID

General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 30. See also the Academic Regulations of the College, above. The following information applies to the Music Department. Contact the Department for details, unless otherwise stated.

The following scholarships are awarded by the Music Faculty during May of each year, for the forthcoming academic year:

Brazeal Dennard Youth Chorale Scholarship: Available in various amounts when funding exists.

Detroit Symphony Orchestral — Bradlin Scholarship: Award of \$500 open to any outstanding music major who plays an orchestral instrument.

Detroit Symphony Orchestral — Civic Scholarship: Award for an orchestral instrument; amount varies; available when funding exists.

Brad Eisenbrey Scholarship: Award of \$500; preference given to composition student; available when funding exists.

Jospeh Fava Scholarship: Award to a guitar performance student when funding exists.

Friends of Music Scholarship: Award of \$1,000 open to any music major who is an outstanding performer; available when funding exists.

Rebecca Katzman Froman Piano Scholarship: Award of \$500 open to an outstanding piano student.

Misha Kottler Scholarship: \$500 award to piano performance major when funding exists.

Harry M. Langsford Scholarship: Award of \$250 to an outstanding choral or vocal student; available when funding exists.

Helen Fairchild Larson Scholarship: Award of \$500 to church music major when funding exists.

LeFevre Scholarship: Award of \$500 open to any music major.

Liberace Scholarship: Two awards of \$3750 open to full-time music majors in jazz or classical curriculum.

Christopher Mac Scholarship: Award of \$250 open to outstanding member of the Men's Glee Club, when funding exists.

Frank Murch Scholarship: Awarded to a Bachelor of Arts in music or piano performance, when funding exists.

Pantaleo Scholarship: Award of \$250, open to an outstanding music major.

Molly Plotkin Memorial Scholarship: Award of \$500, when funding exists; preference given to music education major.

President's Endowed Scholarship: Amount to be determined;.

Presser Foundation Scholarship: Award of \$2250 open to an outstanding music major completing the junior year.

Joan Rossi Memorial Scholarship: Award of \$1000 open to any full-time music major who is an outstanding vocal performer.

Gill Sirotti Scholarship: Award of \$250, when funding exists, open to outstanding member of Men's Glee Club.

Vocal Music Education Scholarship: Award of \$250 open to an outstanding vocal music major.

The following scholarships are subject to other conditions than those cited above:

ASCAP — Hubbell Scholarship: Award of \$500, when funding is available to an outstanding music student pursuing a degree in composition.

Dumesnil Scholars: Award open to any music major; amount depends on funds available.

GRADUATE COURSES

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

MUSIC THEORY (MUT)

5040 History of Music Theory. Cr. 3

Prereq: junior standing. Survey of theorists from Rameau to the present. (I)

5060 Advanced Orchestration. Cr. 3

Prereq: MUT 3000. Arranging and scoring for orchestra in all forms of ensemble structure. (I)

5600 Survey of Music Theory. Cr. 3

Open only to senior level and graduate students. General overview of the development of theoretical and formal structures. (F)

5997 Analytic Technique. Cr. 4

Prereq: MUT 2140, 2150; MUH 3320, MUH 3330. Capstone course for Music Department. Structural analysis of tonal music in historical perspective. (W)

7000 Advanced Contrapuntal Techniques. Cr. 3

Prereq: MUT 2110 or equiv. Complex contrapuntal techniques of the eighteenth century and the fugal style of the Baroque period. (I)

7020 Seminar in Music Analysis. Cr. 2 (Max. 8)

Prereq: MUT 4060 or equiv. Various approaches and theories for analyzing music. (B)

7050 Seminar in Music Theory Pedagogy. Cr. 2

Prereq: graduate standing. Study of materials, teaching techniques, philosophy and organization of music theory classes. (I)

7100 Graduate Composition. Cr. 3 (Max. 9)

Prereq: MUT 4110. Advanced creative work in all of the idioms of twentieth century musical composition. (F,W)

7992 Directed Study in Theory. Cr. 2 (Max. 6)

Prereq: consent of instructor, music adviser, and graduate officer. (F,W)

MUSIC HISTORY (MUH)

5000 Music of Today. Cr. 2

Prereq: consent of instructor; post-bachelor of graduate standing. Development of listening skills through historical study of a variety of non-classical musical styles including: pop, jazz, country-western, gospel and rock and roll. Topics may vary. (F,W)

5300 Music Research. Cr. 3

Prereq: graduate standing in music or consent of instructor. Music bibliography and research techniques. (F)

5320 Music Theatre History I. Cr. 3

Grad. prereq. or coreq: MUH 5300. Survey of music theatre history from 1900 to 1950; research paper required if elected for graduate credit. (B)

5330 Music Theatre History II. Cr. 3

Grad. prereq. or coreq: MUH 5300. Survey of music theatre history from 1950 to the present; research paper required if elected for graduate credit. (B)

5340 Survey of World Music. Cr. 3

Prereq: upper division or graduate standing. Musical expressions of five or six non-European cultures enroute to a better understanding of the peoples themselves. Attention given to biases, culturally-determined learning patterns, and aesthetics. (F,W)

5350 Performance Literature and Pedagogy. Cr. 3

Prereq: performance major in music. Survey of solo and chamber repertoire from the Renaissance to the present, for students' major performance areas. (Y)

5360 (MUH 3360) History of Jazz I. (MUH 5360) Cr. 3

Open only to post-bachelor and graduate students. Survey of major developments in jazz from its beginnings to the present. (F)

5370 Diction and Song Literature I. Cr. 3

Singers' diction in Italian, Latin, French and Spanish; methodologies, solo and chamber repertoire in these languages. (B)

5380 Diction and Song Literature II. Cr. 3

Prereq: MUH 5370. Singers' diction in German, Hebrew, Russian and English; methodologies, solo and chamber repertoire in these languages. (B)

5390 (MUH 3390) History of Jazz II. (MUH 5390) Cr. 3

Prereq: MUH 5360. Continuation of MUH 5360. (Y)

5600 Survey of Music History. Cr. 3

Open only to senior level and graduate students. General overview of the development of ideas in music history from ancient times to the present. (F)

6300 Music Criticism. Cr. 3

Prereq: upper division or graduate standing. Basics of music criticism and practical experience in writing criticism for publication. (Y)

6310 Studies in Afro-American Music. Cr. 3

Contributions of Afro-Americans to the development of music in the United States. (Y)

6320 Advanced History of Opera. Cr. 3

Prereq: graduate standing, MUH 5300. Survey of opera, its history, development and literature; research paper required. (B)

6330 Advanced History of Oratorio. Cr. 3

Prereq: graduate standing; MUH 5300. Survey of oratorio, its history, development and literature; research paper required. (B)

7310 Studies in Medieval Music. Cr. 3

Prereq: MUH 5300. Music from its origins to the Burgundian School. Special reports; research projects. (B)

7320 Studies in Renaissance Music. Cr. 3

Prereq: MUH 5300. Fifteenth and sixteenth centuries, from Burgundian School through Palestrina. Special reports; research projects. (B)

7330 Studies in Baroque Music. Cr. 3

Prereq: MUH 5300. From Monteverdi to 1750. Special reports; research projects. (B)

7340 Studies in Classical Music. Cr. 3

Prereq: MUH 5300. From 1750 to 1825. Special reports; research projects. (B)

7350 Studies in Romantic Music. Cr. 3

Prereq: MUH 5300. Nineteenth century. Special reports and research projects. (B)

7360 Studies in Twentieth Century Music. Cr. 3

Prereq: MUH 5300. Special reports and research projects. (B)

7370 Studies in Choral Literature. Cr. 3

Literature of various choral combinations from the Renaissance to the present; emphasis on stylistic characteristics and authenticity of performance. (Y)

7991 Directed Study in Music History. Cr. 3 (Max. 6)

Research investigations in historical musicology. (T)

8999 Master's Thesis Direction. Cr. 1-8 (8 req.)

Prereq: nine credits in graduate music history or nine credits in MUT 7100 and consent of adviser. (T)

MUSIC PRIVATE INSTRUCTION (MUP)

The following courses (72XX series) are for graduate music majors who wish to study voice or an instrument in a principal and/or secondary capacity. One course per term is the usual election for the MUP 72XX series. The election of two courses concurrently must be a requirement of the student's curriculum and requires the consent of a music counselor and written consent of the Department chairperson. A jury examination is required each semester for all students electing these courses.

LIMITATIONS: Open only to students with less than four semesters of private performance course work including transfer credit. Election for three credits: Open only to performance majors or students in music education. Not open to students majoring in music in any M.A. curriculum.

PREREQUISITES: Major standing in an M.M. or M.A. curriculum for which the MUP course is required; written consent of the Department chairperson; audition for first election.

COREQUISITE: Additional credits in any subject equal to at least four credits, including MUP election.

Fees: Special fees are assessed for these courses and are indicated in the Schedule of Classes.

7200 Organ. Cr. 1-3

Prereq: written consent of music adviser and department chair. Only open, by audition, to music majors in M.M. curriculum electing two or more courses. (F,W)

7210 Piano. Cr. 1-3

Prereq: written consent of music adviser and department chair. Only open, by audition, to music majors in M.M. curriculum electing two or more courses. (F,W)

7220 Voice. Cr. 1-3

Prereq: written consent of music adviser and department chair. Only open, by audition, to music majors in M.M. curriculum electing two or more courses. (F,W)

7230 Stringed Instruments. Cr. 1-3

Prereq: written consent of music adviser and department chair. Only open, by audition, to music majors in M.M. curriculum electing two or more courses. (F,W)

7240 Woodwind Instruments. Cr. 1-3

Prereq: written consent of music adviser and department chair. Only open, by audition, to music majors in M.M. curriculum electing two or more courses. (F,W)

7250 Brasswind Instruments. Cr. 1-3

Prereq: written consent of music adviser and department chair. Open only, by audition, to music majors in M.M. curriculum electing two or more courses. (F,W)

7260 Percussion Instruments. Cr. 1-3

Prereq: written consent of music adviser and department chair. Only open, by audition, to music majors in M.M. curriculum electing two or more courses. (F,W)

7270 Harp. Cr. 1-3

Prereq: written consent of music adviser and department chair. Only open, by audition, to music majors in M.M. curriculum electing two or more courses. (F,W)

7280 Classic Guitar. Cr. 1-3

Prereq: written consent of music adviser and department chair. Only open, by audition, to music majors in M.M. curriculum electing two or more courses. (F,W)

8290 Recital. Cr. 1

Prereq: consent of instructor. Degree recital. (T)

MUSIC APPLIED (MUA)

5600 Business of Music I. Cr. 2

Marketing of music; basic concepts of copyright law; licensing; publishing; songwriting and recording contracts. (F)

5630 Introduction to Recording Techniques. Cr. 3

Prereq: MUA 5610. Introduction to recording equipment and techniques, including microphones, mixers, monitors, power supply, signal processing, multi-track tape recorders, overdubbing, session procedures, and mixing down. Students are required to complete a final recording project. (W)

5640 Electronic Music Synthesis I. Cr. 3

Prereq: MUA 5610. Introduction to analog synthesizer programming, equipment, and techniques. Students required to design sounds for use in a final project. (F)

5650 Electronic Music Synthesis II. Cr. 3

Prereq: MUA 5640. Digital synthesis methods including software-based, FM and other synthesis types. Assignments leading to a final project. (W)

5660 Recording Workshop. Cr. 1

Prereq: music technology major or consent of instructor. Experience with recording studio equipment and operation through assigned projects. Assignments include in-studio and on-site recordings. (F)

5680 Introduction to Music Therapy. Cr. 2

Survey of the field of music therapy: qualifications and skills required to become a Registered Music Therapist; observation of music with retarded, mentally ill, and physically handicapped clients. (W)

5700 Business of Music II. Cr. 2

Prereq: MUA 5600, or equivalent with consent of instructor. The relationship of music professionals to unions and guilds; "team" concepts (agents, managers, attorneys, etc.); tax issues; business contracts; managing the career development of the music professional. (W)

5730 Harpsichord Class. Cr. 2 (Max. 8)

Prereq: MUA 3790 or equiv. (F,W)

5790 Piano Accompanying. Cr. 2

Techniques of accompanying at the piano; analysis of styles, performance practices, and historical comparisons. Graduate students assigned special project and research paper. (F)

5800 Topics in Music Management. Cr. 2

Prereq: consent of instructor. Scope and structure of the music industry on the local, national, and international levels, including artist management, live concert production and touring, recording film/video/TV, marketing, communications, publishing, and industry associations. Technology and the music industry, management projects in selected areas of the industry. (W)

7450 Advanced Conducting: Choral and Orchestral. Cr. 3 (Max. 9)

Prereq: MUA 2680 or equiv. Individual instruction with one of the conductors of the major performance ensembles including score reading; baton techniques; rehearsal techniques; and stylistic interpretation. (Y)

7650 Directed Study: Internships. Cr. 1-3 (Max. 6)

Prereq: music major; others by consent of instructor. Directly supervised professional experience in the music and creative arts industries and related fields (marketing, publicity, public relations). All activities during the course of the internship will require documentation which must be submitted as part of a formal research paper. (T)

7720 Graduate Voice Class. Cr. 2 (Max. 8)

Prereq: MUA 1100 and 1720 or equiv. Fundamentals in voice training, correct breathing, tone placement, articulation, and vocalizing. (W)

7800 University Bands. Cr. 1

Prereq: consent of director. (F,W)

7810 University Symphony Orchestra. Cr. 1

Prereq: consent of director. (F,W)

7820 Jazz Lab Band. Cr. 1

Prereq: consent of director. (F,W)

7830 Men's Glee Club. Cr. 1

Prereq: consent of director. (F,W)

7840 Choral Union. Cr. 1

Prereq: consent of director. (F,W)

7850 Concert Chorale. Cr. 1

Prereq: consent of director. (F,W)

7860 Opera Workshop. (SPT 7860) (THR 7860) Cr. 1 (Max. 8)

Prereq: consent of director. (F,W)

7870 Women's Chorale. Cr. 1

Prereq: consent of director. (F,W)

7880 Chamber Music and Special Ensembles. Cr. 1

All forms including: Collegium Musicum, jazz improvisation, percussion ensemble, trios and quartets, and wind ensemble. (F,W)

7890 Chamber Recital. Cr. 1

Prereq: consent of instructor. Performance of major chamber works as partial requirement for a master's degree in performance. (Y)

MUSIC EDUCATION (MED)

5520 Marching Band Techniques. Cr. 3

Planning, charting, and rehearsal techniques for marching band; emphasis on contemporary, computer-generated drill designs; practical projects in developing a complete marching band program. (Y)

5550 Choral Conducting and Rehearsal Techniques. Cr. 3

Prereq: MUA 2670 or equiv. Conducting and rehearsal methods and materials for secondary schools. (W)

5560 Secondary School Music Workshop. Cr. 1-3 (Max. 6)

Group participation in the study of class materials and teaching procedures for secondary music teachers. (Y)

5580 (DNC 5460) Music and Dance in the Music Class II. (TED 5460) Cr. 1-2

Prereq: MED 5540. Continuation of MED 5540; added experience using the Orff instrumentation for accompaniment. (S)

5590 (CL) Computer Applications in Music Teaching. Cr. 2

Presentation of techniques and strategies for utilizing computer music software programs and MIDI equipment in music instruction. (S)

- 6520 Elementary School Music Workshop. Cr. 1-3 (Max. 6)**
Group participation in the study of class materials and teaching procedures for elementary music teachers. (Y)
- 6530 Conducting and Operating the School Band. Cr. 2-3 (Max. 6)**
Individual instruction correlated with actual administration and direction of summer youth band. (S)
- 6540 Instrumental Music Workshop. Cr. 2-3 (Max. 6)**
Current problems, procedures and materials pertaining to development of the instrumental music program in the schools. (S)
- 6550 College Teaching Preparation in Music. Cr. 2 (Max. 6)**
Prereq: senior or graduate standing; consent of chairperson. Observation of instruction, class assistance and supervised instruction of undergraduate classes. Preparing lectures, quizzes and instructional material. (F,W)
- 7560 Contemporary Trends in Music Education. Cr. 2-3**
Open to all graduate students. Role of music in the school. Philosophy, trends and issues in music education on all grade levels. (B)
- 7580 Advanced Conducting Techniques. Cr. 2-3**
Prereq: MUA 2680 or equiv. Structural analysis relating to rehearsal techniques and the interpretation of performance materials. Review and clarification of manual baton techniques and styles. (B)
- 7990 Directed Study in Music Education. Cr. 1-3 (Max. 8)**
Prereq: consent of music adviser and departmental graduate director. (T)
- 7999 Master's Essay Direction. Cr. 1-3 (3 req.)**
Prereq: consent of music adviser and department chair. (T)
- 8510 Foundations of Music Education I. Cr. 2-3**
Historical and philosophical foundations of music education; important trends, innovations and leaders in the development of music in American schools; and the influence of educational philosophers and aesthetic theories. (B:S)
- 8520 Foundations of Music Education II. Cr. 2-3**
Consideration of the psychological foundations of music education; the application of learning theories to music teaching and evaluation of school music programs. (B:S)
- 8540 Music Education Research. Cr. 3**
Basic skills in music education research; research reading and criticism; problem statement formulation; literature review; data gathering techniques; statistics and data analysis; manuscript development and report writing; research methodologies in music education. (B)
- 8550 Measurement and Evaluation in Music Education. Cr. 3**
Measurement in music education; music classroom test construction; statistical concepts; criteria for evaluating tests; measurement of attitudes and interests, musical behavior and performance; music aptitude and achievement testing; evaluating students and programs. (Y)

THEATRE

Office: 3225 Old Main; 577-3508
Chairperson and Director: James Thomas

Professors

N. Joseph Calarco, Robert T. Hazzard (Emeritus), Lazar Kaushansky, Leonard Leone (Distinguished Professor Emeritus), David J. Magidson, Robert E. McGill, Nira Pullin, Anthony B. Schmitt, Thomas Schraeder, Russell E. Smith (Emeritus), James Thomas

Associate Professor

John Woodland

Assistant Professor

Cynthia Blaise

Lecturers

Blair Anderson, Neil Carpenter-Alting, Mary Copenhagen

Academic Service Officer

Philip Fox II

Graduate Degrees

MASTER OF ARTS with a major in Theatre

MASTER OF FINE ARTS with a major in Theatre and specializations in acting, direction, theatre stage design, stage costuming, stage lighting design, theatre management and stage management

DOCTOR OF PHILOSOPHY with a major in Theatre

Master of Arts with a Major in Theatre

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. In addition, applicants must have at least a 3.0 ('B') honor point average. A minimum of fifteen semester credits in the area of specialization is required.

Candidacy must be established by the time twelve credits have been earned.

DEGREE REQUIREMENTS: The Master of Arts degree is offered by this department under the following options:

Plan A: Thirty-two credits, including an eight-credit thesis.

Plan B: Thirty-two credits, including a three-credit essay.

Required Curriculum:	Credits
Literature (two courses from: THR 7040, 7200, 5220, 5250, 5100, 5210)	6
Development of Drama (THR 5120 and 6120)	6
Electives (including one course from: THR 7890, 8100, 8500, or 8810).	12-17
Plus:	
Master's Thesis (THR 8999)	8
or	
Master's Essay (THR 7999)	3

Total: 32

A final oral examination is required of all Master of Arts Candidates.

Master of Fine Arts with a Major in Theatre

The Master of Fine Arts curriculum in theatre is a three-year program of intensive professional training in the student's area of specialization and is offered in acting, theatre stage design, stage costuming, stage lighting design, theatre management or stage management.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. In addition, applicants must satisfy the following criteria.

Students with a bachelor's degree are eligible to enroll in the M.F.A. program if they have successfully completed an audition or personal interview with the theatre arts faculty. Students with background deficiencies may be provisionally admitted to the M.F.A. program provided that they enroll in work prescribed to eliminate these deficiencies.

Students must declare their area of specialization upon entry into the program, although this declaration need not be final until the end of the first year. The M.F.A. program in *acting* is open only to members of the Hilberry Repertory Theatre Company.

DEGREE REQUIREMENTS: The Master of Fine Arts with a major in theatre is offered only as a Plan C master's program, requiring sixty credits in the area of specialization. All programs require a final project and a final oral examination relevant to the degree specialization. Major requirements are as follows:

ACTING: *Sixty Credits.*

(Open only to members of the Hilberry Company.) Credits

Repertory Theatre (THR 7070, Max. 18 credits)	18
Studio (THR 6010, 6020, 7050, 7060, 7110, 7120, Max. 18 credits)	12
Voice and Speech (THR 6050, 6100, 7010, 7090, 7180, 7190)	6
Movement and Dance Styles (THR 6070, 6110, 7020, 7100, 7140, 7150)	6
Development of the Drama (THR 5120 and 6120)	6
MFA Exit Project (THR 8020)	3
Literature and Criticism (THR 7040, 7200, 5250, 5100, 5210)	6
History (THR 7890, 8100, 8110)	3
Total:	60

THEATRE MANAGEMENT: *Sixty Credits.*

Repertory Theatre (THR 7070)	12
Studio	
(THR 6010, 6020, 7050, 7060, 7110, 7120, Max. 18 credits)	18
Internship in Theatre Management (THR 7170)	4
Directed Study (THR 7990)	4
M.F.A. Exit Project (THR 8020)	3
Literature/Criticism/History Sequence: (THR 7040 and 7200, or THR 5100 and 5210)	6
Electives (with adviser's approval)	10
Legal Environment in the Arts (FPC 5020)	3
Total:	60

Stage Management: Variations in curricula are possible within the Theatre Management program for students interested in Stage Management. The variations include replacement of THR 7170, Internship in Theatre Management, with THR 8190 and THR 8200, Teaching Internship I and II, plus courses in scenic, costume, and lighting design, selected in consultation with an adviser.

THEATRE STAGE DESIGN: *Sixty Credits.*

Repertory Theatre (THR 7070)	12
Development of the Drama (THR 5120)	3
Theatre Aesthetics (THR 7200)	3
Play Direction I (THR 5050)	3
Teaching Internship (THR 8190 and 8200)	6
Stage Design (THR 5080 and 5090)	6
Scene Painting (THR 5140 and 5150)	6
Advanced Stage Lighting Design (THR 5300)	3
Costume Design (THR 6060)	3
Advanced Technical Theatre Problems (THR 7030)	12
Architecture and Decor (THR 7130)	3
Total:	60

STAGE LIGHTING DESIGN: *Sixty Credits.*

Play Direction I (THR 5050)	3
Development of the Drama I (THR 5120)	3
Theatre Aesthetics (THR 7200)	3
Lighting Design (THR 5300, 6090, and 6190)	9
Advanced Technical Theatre Problems (THR 7030)	12

Repertory Theatre (THR 7070)	12
Theatre Costuming (THR 5010)	3
Stage Design (THR 5080)	3
Introduction to Scene Painting (THR 5140)	3
Teaching Internship (THR 8190 and 8200)	3
Electives (with adviser's approval)	6
Total:	60

STAGE COSTUMING: *Sixty Credits.*

Theatre Costuming (THR 5002)	3
Lighting and Stage Design (select two from: THR 5030, 5080, 5300)	6
Play Direction I (THR 5050)	3
Development of the Drama I (THR 5120)	3
Costume Design (THR 6060)	3
Advanced Stage and Film Makeup (THR 6080)	2
Advanced Technical Theatre Problems (THR 7030)	12
Repertory Theatre (THR 7070)	12
Theatre Aesthetics (THR 7200)	3
Teaching Internship (THR 8190 and 8200)	3
Electives (with adviser's approval)	10
Total:	60

Doctor of Philosophy with a Major in Theatre

The Ph.D. program in theatre at Wayne State University is designed to train the scholar/director. Courses in the Department are designed to promote research and study in all aspects of the theatre arts, and to provide intensive training in theatre.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. In addition, applicants must satisfy the following criteria. Required prerequisites include an M.A. degree with a 3.3 ('B'=3.0) honor point average, undergraduate and graduate work in the theatre arts, the ability to write effectively, and demonstrated proficiency in speaking and reading.

In addition to completing all admission procedures of the Graduate School, the applicant for graduate study in theatre should provide: 1) copies of all academic transcripts; 2) graduate record examination scores; 3) at least three letters of recommendation addressing applicant's academic and artistic talent or promise; 4) a scholarly paper of at least 2,000 words or thesis demonstrating research ability; 5) applicant's Statement of Goals (100-150 words); 6) reviews and/or other documents of performance achievement, if available. The applicant should consult the Chairperson of the Departmental Graduate Committee for details.

DEGREE REQUIREMENTS: Candidates for the doctoral degree must complete ninety credits beyond the baccalaureate including thirty credits of dissertation direction; one course in graduate research techniques or its equivalent; a departmental major or minor; and a minor outside the department. Dissertations characteristically employ critical or historical methods. Specific guidelines are available in the Office of the Chairperson of the Departmental Graduate Committee. Additional requirements may be made by the student's advisory committee and the Departmental Graduate Committee.

The qualifying examinations will cover major and minor areas in the student's plan of work.

FINANCIAL AID

Sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 30. See also the Academic Regulations section of the Collage, above. The following information applies to the Theatre Department.

Fellowships and Assistantships

Each year a number of graduate assistantships and fellowships are awarded to qualified graduate students. Hilberry Repertory Theatre student fellowships are awarded annually on the basis of auditions. For information, write to the Chairperson of the Department or the Chairperson of the Departmental Graduate Committee.

Scholarship

Francis Selfo Scholarship: An award of variable amount open to any student of Albanian descent who is studying theatre. Application deadline is May 15. Contact the Office of Scholarship and Financial Aid for details.

GRADUATE COURSES (THR)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

5010 Theatre Costuming I. Cr. 3

Prereq: THR 1010 or 1030 recommended. Introduction to costume design and construction. Laboratory projects coordinated with University Theatre productions. Material fee as indicated in the Schedule of Classes. (F)

5020 Theatre Costuming II. Cr. 3

Prereq: THR 5010. Advanced costume design projects concentrating on the expression of character through design principles. Further development of drawing and rendering skills. (W)

5030 Introduction to Design for the Theatre. Cr. 3

Prereq: THR 2130 recommended. Methods and materials laboratory course. Practical exercises. Prerequisite to stage, costume or lighting design; techniques of costume, lighting design; rendering, drafting, perspective, color, and design. (F)

5050 Play Direction I. Cr. 3

Prereq: THR 3050. Principles and theories of stage movement, blocking, casting, rehearsing. Students required to direct scenes and one-act plays for class presentation. (F)

5060 Play Direction II. Cr. 3

Prereq: THR 5050. Continuation of THR 5050. Lectures on the history of play direction. Students required to direct a one-act play on the University Student Stage. (W)

5070 Stage Lighting. Cr. 3

Theory and practice in stage lighting. Examination of lighting in composition and the aesthetics of light through projects in the stage lighting laboratory. Discussion of applications of lighting instrumentation and control equipment to theatrical production. Participation in lighting University Theatre productions is required. (F)

5080 Stage Design. Cr. 3 (Max. 6)

Prereq: THR 5030. The scenic designer's multiple analysis of a play. Practice in evolving a technique of scenic design by study of selected plays with execution of sketches and working drawings. (I)

5090 Advanced Stage Design. Cr. 3 (Max. 6)

Prereq: THR 5080. Laboratory theory course in stylistic characteristics of modern stage designs. Advanced problems in scenic design. (I)

5100 Theatre History I. Cr. 3

Required of all B.F.A. majors. The development of the physical theatre and the evolution of production methods in Greek, Medieval, Renaissance, and English Restoration theatres with the correlation of the cultural environment of each period. Material fee as indicated in the Schedule of Classes. (F)

5120 Development of the Drama I: Greek to Eighteenth Century. Cr. 3

Plays from the Greek through the eighteenth century, including Shakespeare; relation of drama to an era and its theatre. (F)

5130 (ENG 5890) Writing for Theatre. Cr. 3 (Max. 6)

Prereq: ENG 3830 or consent of instructor. Advanced study, in a workshop setting, of dramatic structure and writing for the theatre, terminating in the writing of an original stage play. (I)

5140 Introduction to Scene Painting. Cr. 3

Prereq: THR 2130. Laboratory and demonstration course as an introduction to painting for the stage, with an emphasis on the materials, texturing techniques, three-dimensional effects and the beginning work from painter's elevations. Material fee as indicated in the Schedule of Classes. (I)

5150 Advanced Scene Painting. Cr. 3

Prereq: THR 5140. Laboratory and demonstration course for the design or technical theatre student. Materials, techniques, styles of scene painting. Material fee as indicated in the Schedule of Classes. (I)

5170 Modern Acting Styles and Theories. Cr. 3

Prereq: three undergraduate courses in acting or equivalent experience. Advanced lecture and performance course to develop the process of analysis, creation, and performance of dramatic characters as required by today's film, television and theatre disciplines. (S)

5190 Costume History for the Theatre. Cr. 3

Prereq: THR 5010. Survey of historical trends and patterns in the development of costume as related to various periods and genres of theatre. (I)

5210 Theatre History II. Cr. 3

Prereq: THR 5100 or consent of instructor. Continuation of THR 5100. From English and continental eighteenth century to contemporary European and American theatres. Material fee as indicated in the Schedule of Classes. (W)

5220 Black Dramatic Literature. (AFS 5220) Cr. 3

Critical study of significant black dramatists of the American stage: Willis Richardson, Marita Bonner, Randolph Edmonds, Langston Hughes, Alice Childress, Lorraine Hansberry, Ed Bullins, Amiri Baraka, Ntozake Shange, and August Wilson. (Y)

5230 Pioneers of the Modern Theatre. Cr. 3

Prereq: upper division standing. Stanislavski, Meyerholdt, Artaud, Gordon Craig, Brecht; lectures and creative projects. (B)

5250 Playwriting I. Cr. 3

Introduction to the craft of writing for the stage. Students required to write a full-length dramatic script. (B)

5300 Advanced Stage Lighting Design. Cr. 3

Prereq: THR 5070; graduate standing or consent of instructor. Examination of situations and responsibilities encountered in professional lighting design. Project work based on large-scale, complex requirements. Material fee as indicated in the Schedule of Classes. (I)

5500 Special Topics in Theatre. Cr. 1-3 (Max. 6)

Specialized studies in theatre performance, history, criticism, management, design, and technology. Topics to be announced in Schedule of Classes. (T)

6010 Studio I. Cr. 1-3

Prereq: graduate standing. Open only to members of the Hilberry Acting Company and M.A., M.F.A., and Ph.D. candidates in management. Examination and analysis of a specific dramatic genre, style or

historic period as it relates to acting, directing, or management. Correlative performance or other practical projects. Subject matter coordinated with the repertory of Hilberry Theatre. (F)

6020 Studio II. Cr. 1-3

Prereq: THR 6010. Open only to members of Hilberry Acting Company and M.A., M.F.A., and Ph.D. candidates in management. Continuation of THR 6010. (W)

6030 Creative Dramatics for Children. Cr. 3

Creative dramatics and formal playmaking for and by children. (I)

6040 Children's Theatre Play Production. Cr. 3

Prereq: THR 6030 recommended. Theory and practice of organization, selection, direction, production of plays for children's audiences in schools, churches and communities. (I)

6050 Voice and Speech for the Stage I. Cr. 1

Open only to Hilberry company members. Introduction to American standard speech using Edith Skinner's technique; introduction to FitzMaurice vocal technique. (F)

6060 Costume Design for the Theatre. Cr. 3 (Max. 6)

Advanced phases of costume design and construction. Source material for historical and national costumes. (I)

6070 Theatrical Movement and Dance Styles I. Cr. 1

Open only to Hilberry company members. Pilates Method of body conditioning; learning and perfecting movements of the body at beginning and intermediate levels. (F)

6080 Advanced Stage and Film Makeup. Cr. 2

Prereq: THR 3050. Continuation of basic principles applied in THR 3050; emphasis on new makeup materials; experimentation with prosthesis and design for problem makeup. Material fee as indicated in the Schedule of Classes. (I)

6090 Professional Lighting Design I. Cr. 3

Prereq: THR 5300 or consent of instructor. Examination of the responsibilities and skills needed to function as a professional lighting designer. Varied styles of theatrical production, the lighting designer's communication with other professionals, use of computers in lighting design process, graphic presentation of lighting design concepts. (Y)

6100 Voice and Speech for the Stage II. Cr. 1

Prereq: THR 6050. Open only to Hilberry company members. Continuing instruction in Skinner and FitzMaurice/Linklater. (W)

6110 Theatrical Movement and Dance Styles II. Cr. 1

Prereq: THR 6070. Open only to Hilberry company members. Continuation of THR607. Advanced level. (W)

6120 Development of the Drama II: Nineteenth Century to Modern. Cr. 3

Plays and theories of the theatre from the nineteenth century to modern times; relation of drama to an era and its theatre. (W)

6190 Professional Lighting Design II. Cr. 3

Prereq: THR 5300 or consent of instructor. Continuation of THR 6090. Employment of theatrical lighting techniques in non-theatrical applications such as film and video; preparation and presentation of a lighting design portfolio; roles of unions in theatrical lighting design. (B:W)

7010 Voice and Speech for the Stage III. Cr. 1

Prereq: THR 6100. Open only to Hilberry company members. Mastery of Narrow Transcription and Shakespeare (speech). Continuation of Fitz/Maurice/Linklater; introduction to Cecile Berry voice technique. (F)

7020 Theatrical Movement and Dance Styles III. Cr. 1

Prereq: THR 6110. Open only to Hilberry company members. Period movement and dance, medieval through Renaissance; research of period material. (F)

7030 Advanced Technical Theatre Problems. Cr. 1-3 (Max. 18)

Open only to M.F.A. theatre majors. Advanced study and research in scenic design, theatre architecture, stagecraft, lighting. Projects and reports. Material fee as indicated in the Schedule of Classes. (I)

7040 Studies in Dramatic Criticism. Cr. 3-4

Analysis of selected classical critical texts in relation to dramatic literature and production; emphasis on ancient Greek and Renaissance and Elizabethan theatre. (I)

7050 Studio III. Cr. 1-3

Prereq: THR 6020. Open only to members of Hilberry Acting Company, M.A., M.F.A., and Ph.D. candidates in management. Continuation of THR 6020. (F)

7060 Studio IV. Cr. 1-3

Prereq: THR 7050. Open only to members of Hilberry Acting Company and M.A., M.F.A., and Ph.D. candidates in management. Continuation of THR 7050. (W)

7070 Repertory Theatre. Cr. 1-4 (Max. 18)

Continuation of SPT 5040. Supervised experience in the Classic Theatre repertory program. (T)

7080 Advanced Theatre Laboratory. Cr. 1-3 (Max. 3; max. 9 for M.F.A. students with consent of instructor)

Supervised laboratory practice in technical theatre and theatre management. (T)

7090 Voice and Speech for the Stage IV. Cr. 1

Prereq: THR701. Open only to Hilberry company members. Continuation of Narrow phonetic transcription and Shakespearean phrasing; alliteration, antithesis, inflections, music; developing vocal power. (W)

7100 Theatrical Movement and Dance Styles IV. Cr. 1

Prereq: THR 7020. Open only to Hilberry company members. Period movement and dance, Baroque and eighteenth century; research of period material. (W)

7110 Studio V. Cr. 1-3

Prereq: THR 7060. Open only to members of Hilberry Acting Company and M.A., M.F.A., and Ph.D. candidates in management. Continuation of THR 7060; further practical studies in various theatre crafts. (F)

7120 Studio VI. Cr. 1-3

Prereq: THR 7110. Open only to members of Hilberry Acting Company, and M.A., M.F.A., and Ph.D. candidates in management. Continuation of THR 7110; further practical studies in various theatre crafts. (W)

7130 Architecture and Decor. Cr. 3

Open only to theatre majors. Historical study of the form and elements of architecture and decoration; emphasis on theatrical design. Material fee as indicated in the Schedule of Classes. (Y)

7140 Theatrical Movement and Dance Styles V. Cr. 1

Prereq: THR 7100. Open only to Hilberry company members. Period movement and dance, Victorian and Edwardian eras; research of period material. (F)

7150 Theatrical Movement and Dance Styles VI. Cr. 1

Prereq: THR 7140. Open only to Hilberry company members. Period movement and dance, 1900 to 1950; reserch of period material. (W)

7160 Internships in Theatre Promotion. Cr. 1-6

Planning, organization and execution of projects in publicity, fund-raising and audience development; evaluation of project effectiveness. (F)

7170 Internships in Theatre Management. Cr. 1-4

Prereq: M.F.A. in theatre management or consent of theatre director. Planning and execution of projects in theatre management; evaluation of project effectiveness. (W)

7180 Voice and Speech for the Stage V. Cr. 1

Prereq: THR 7090. Open only to Hilberry company members. Introduction to dialect work; continuing development of vocal instrument.

(F)

7190 Voice and Speech for the Stage VI. Cr. 1

Prereq: THR 7180. Open only to Hilberry company members. Character work.

(W)

7200 Theatre Aesthetics. Cr. 3-4

Prereq: M.A., M.F.A., or Ph.D. student; or consent of instructor. Contemporary and classical theories of performance in drama, musical theatre, and dance. Interactions of acting, design, music, dance, script, and audience.

(Y)

7860 (MUA 7860) Opera Workshop. (SPT 7860) Cr. 1 (Max. 8)

(Y)

7890 Seminar: Period Drama. Cr. 3-4

Prereq: THR 5120 or equiv. or consent of instructor. Advanced study of a selected period or playwrights from the beginnings of drama through the Romantic movement.

(B)

7990 Directed Study. Cr. 1-4 (Max. 4)

Prereq: consent of chairperson and graduate officer. Open only to graduate students.

(T)

7991 Ph.D. Directed Study. Cr. 1-4 (Max. 4)

Prereq: consent of chairperson or graduate officer. Open only to doctoral students.

(T)

7999 Master's Essay Direction. Cr. 1-3

Prereq: consent of adviser.

(T)

8010 Advanced Theatre Practicum. Cr. 1-2 (Max. 11)

Public performances in the dramatic productions of the University's Bonstelle Theatre. Credit determined by complexity of dramatic role performed.

(T)

8020 M.F.A. Exit Project. Cr. 1-3

Prereq: last semester standing; prior consent by graduate supervisor and faculty adviser. Open only to members of Hilberry company.

(T)

8100 Seminar: Theatre History. Cr. 3-4

Prereq: THR 5210 and consent of instructor. Selected topics in theatre history.

(B)

8190 Teaching Internship I. Cr. 1-3

Open only to third year Hilberry fellows. Assisting faculty members in teaching first-semester undergraduate-level courses.

(F)

8200 Teaching Internship II. Cr. 1-3

Open only to third year Hilberry fellows. Assisting faculty members in teaching second-semester undergraduate-level courses.

(W)

8500 Seminar: Directing. Cr. 2 (Max. 4)

Prereq: one year of undergraduate directing or consent of instructor. Discussion of selected topics in directing theory. Development and class presentation of directing concepts for plays in diverse styles, conceived for existing and theoretical theatre spaces; coordination of directing with design.

(B)

8810 Seminar: Modern Drama. Cr. 3-4

Prereq: THR 7010 or equiv. or consent of instructor. Advanced study of selected period of playwright from beginning of modernism to present day.

(B)

8890 Doctoral Seminar. Cr. 2 (Max. 4)

Prereq: admission to Ph.D. program. Discussion of selected research projects. Development, written completion, and oral presentation of research paper to department, faculty, and students.

(Y)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

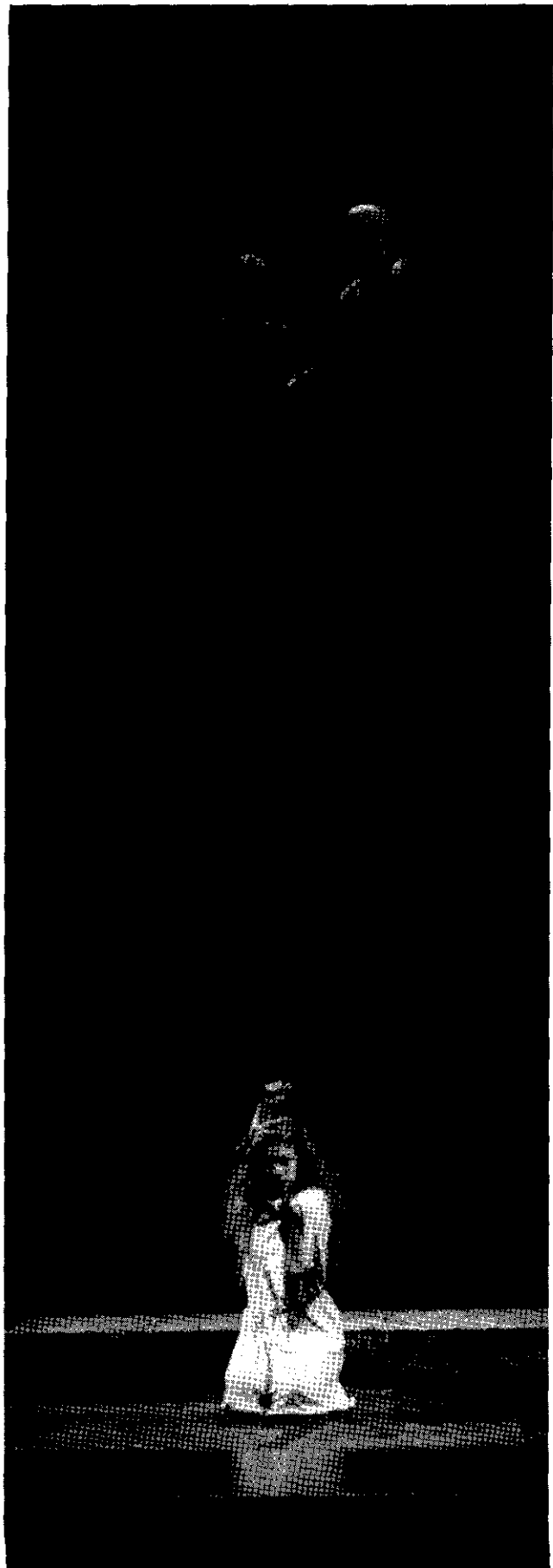
Prereq: consent of adviser.

(T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16 (Max. 30)

Prereq: consent of doctoral adviser. Offered for S and U grades only.

(T)



Law School

DEAN: Joan Mahoney

LAW SCHOOL CALENDAR 1998-2000*

FALL TERM 1998

Classes Begin
First Year Evening Monday, August 24
First Year Day Wednesday, August 26
All Others Monday, August 31
Labor Day Recess Monday, September 7
Thanksgiving Recess Thursday-Sunday, Nov. 26-29
Thursday Classes Only Meet Tuesday, December 8
Friday Classes Only Meet Wednesday, December 9
Classes End Wednesday, December 9
Review and Reading Period Thursday - Sunday, Dec. 10-13
Examination Period Monday - Wednesday, Dec. 14-23

WINTER TERM 1999

Classes Begin Monday, January 11
Martin Luther King Jr. Birthday Observance
(no classes held) Monday, January 18
Law School Spring Recess Sunday - Sunday, Feb. 28 - March 7
Classes Resume Monday, March 8
Classes End Monday, April 26
Review and Reading Period Tuesday - Sunday, April 27 - May 2
Examination Period Monday - Friday, May 3 - May 14
Law School Commencement Saturday, May 15

SUMMER TERM 1999

Classes Begin Monday, May 24
Memorial Day Recess Monday, May 31
Monday Classes Only Meet Friday, June 4
Monday Classes Only Meet Friday, June 25
Independence Day Recess Monday, July 5
Classes End Friday, July 9
Examination Period Monday - Friday, July 12 - 16

FIRST YEAR SUMMER PROGRAM 1999

Registration Tuesday, June 8
Classes Begin Wednesday, June 9
Monday Classes Only Meet Friday, June 25
Independence Day Recess Monday, July 5
Classes End Friday, July 30
Examination Period Monday - Friday, August 2 - 6

FALL TERM 1999

Classes Begin
First Year Evening Monday, August 23
First Year Day Wednesday, August 25
All Others Monday, August 30
Labor Day Recess Monday, September 6
Thanksgiving Recess Thursday - Sunday, Nov. 25 - 28
Day Scheduled as Thursday¹ Tuesday, December 7
Day Scheduled as Friday¹ Wednesday, December 8
Classes End Wednesday, December 8
Review and Reading Period Thursday - Sunday, Dec. 9 - 12
Examination Period Monday - Thursday, Dec. 13 - 23
Fall Term Ends Friday, December 31, 1999
Holiday recess December 25, 1999 - January 1, 2000

WINTER TERM 2000

Winter Term Begins Saturday, January 1, 2000
Classes Begin Monday, January 10
Martin Luther King, Jr.'s Birthday Observance
(no classes held) Monday, January 17
Law School Spring Recess Sunday - Sunday, March 5 - 12
Classes Resume Monday, March 13
Classes End Saturday, April 22
Review and Reading Period Sunday - Sunday, April 23-30
Examination Period Monday - Friday, May 1 - 12
Law School Commencement Saturday, May 13

SUMMER TERM 2000

Classes Begin Monday, May 22
Memorial Day Recess Monday, May 29
Day Scheduled as Monday¹ Friday, June 2
Day Scheduled as Tuesday¹ Friday, June 30
Independence Day Recess Tuesday, July 4
Classes End Friday, July 7
Examination Period Monday - Friday, July 10 - 14

FIRST YEAR SUMMER PROGRAM 2000

Welcome/Classes Begin Wednesday, June 7
Day Scheduled as Tuesday¹ Friday, June 30
Independence Day Recess Tuesday, July 4
Classes End Friday, July 28
Examination Period Monday - Friday, July 31 - August 4, 2000

* Calendar Dates are Tentative. This Calendar applies to the Law School ONLY. The general University Calendar appears on page 4.

1. To make up for class days lost due to observance of holidays, substitute class days are scheduled.

THE STUDY OF LAW AT WAYNE STATE UNIVERSITY

History and Goals of the Law School

Wayne State University Law School has been a source of lawyers for Michigan and the rest of the nation for more than 70 years. A group of public-spirited lawyers led by Judge Allan Campbell, in cooperation with the Detroit Board of Education, established the new law school in 1927 as part of the Colleges of the City of Detroit. The Law School and other colleges grew and flourished and were subsequently renamed Wayne University. In 1956, the University joined the University of Michigan and Michigan State University as one of Michigan's three major public universities, and was renamed Wayne State University.

Wayne State University is an institution dedicated to excellence in education and research. The focus of the Juris Doctor (J.D.) program is preparation of lawyers for the wide variety of professional opportunities available with law firms, corporations, public interest groups, government, prosecutors' and defenders' offices and many other law-related fields. The rich and varied educational program not only teaches the legal rules by which business and personal affairs are governed in a complex society, but also instills an appreciation of the larger role of the legal profession as it shapes society's values and institutions. The program emphasizes experiences designed to develop the skill of written expression, and provides oral advocacy training in trial and appellate settings. In addition to the traditional classroom component, the Law School offers the opportunity to enrich legal education with real-life legal experience. Students are encouraged to take advantage of the special opportunities available in the Detroit metropolitan area for internships with judges, prosecutors' and defenders' offices and public interest law practices.

The Law School's faculty is actively involved in scholarly research. Professors at Wayne State University Law School make significant contributions to the understanding of issues in environmental law, taxation, criminal procedure, constitutional law, urban law and many other fields. Their books and articles contribute to the depth and quality of classroom teaching. It is the interaction of teaching and research which creates an especially stimulating environment for the law student.

The Law School community takes great pride in its diversity. The full-time faculty includes individuals experienced in local, state and federal government, others who have served as judicial clerks for federal judges, a number with backgrounds in private practice, and others who are well-known public interest advocates. They combine excellent academic credentials with practical experience. The faculty is committed to classroom teaching excellence and to advancing the state of professional knowledge through scholarship. The Law School is also fortunate to have excellent part-time faculty from the metropolitan Detroit area. Respected judges and practitioners bring valuable and specialized professional perspectives to the adjunct faculty.

Accreditation and National Recognition

Wayne State University Law School is accredited by both of the major national accrediting agencies for legal education—the American Bar Association and the Association of American Law Schools.

The Law School has a chapter of the Order of the Coif, the national honorary society dedicated to the highest standards of legal scholarship. Membership is limited to the top 10 percent of each graduating class, elected by the faculty. In establishing its chapter of the Order of the Coif, Wayne State University Law School has joined other elite law schools in promoting exceptional accomplishment in legal studies.

Law School Setting

Wayne State University is located in the heart of the University/Cultural Center area about four miles from downtown Detroit. Within a few blocks of the Law School are the Detroit Public Library, the

Detroit Institute of Arts, the International Institute, the Detroit Historical Museum, the Detroit Science Center and the Museum of African-American History. South of the main campus area are the Detroit Medical Center and the Wayne State University Medical School. State and federal courts and offices are concentrated in the downtown area.

The Law School is located on the main campus convenient to the major University library complex and the University's Hilberry Theatre, which houses one of the most distinguished graduate theater repertory companies in the United States. The Law School complex includes the classroom building, the law library building and the annex. The classroom building has five auditoriums with terraced seating designed to enhance the educational experience and a lounge area for informal conversation between classes. In 1996, the Law School completed a \$500,000 refurbishing of the classroom building. The law library building houses—in addition to the library—faculty and administration offices on the third floor; seminar rooms, the Moot Court facility, and trial courtrooms on the second floor; and new student organization offices, the student lounge and a snack bar area on the lower level. The annex houses additional administrative and faculty offices and study space. A major renovation is being planned to replace the annex with a modern multi-story addition to the Law School complex.

Arthur Neef Law Library

The Arthur Neef Law Library is the second largest academic law library in Michigan, and the 23rd largest in the United States. The Law Library is noted for its collection and the services provided by its law librarians and staff. With over 540,000 volumes, it serves as a major center of legal research for faculty and students of the Law School, for members of the local and state bar, representatives of state and federal agencies, alumni and people from the community.

In addition to a complete collection of all Michigan legal materials, the Library contains the reported cases of the highest courts and most of the lower court reports of all states and territories of the United States as well as current statutory compilations. It also contains other state materials such as legislative reports, session laws, attorney general reports, court rules and jury instructions. There are sets of all federal cases, statutes, treaties and court rules available in numbers adequate for active research by students and faculty. In addition, the Library has research aids such as digests, citators, legal encyclopedias, dictionaries, form books, loose-leaf services, indexes and reference works.

The collection includes information in books, journals, loose-leaf services and U.S. government documents and in various formats such as paper, CD-Rom, video, audio, data files and on the Internet. Special collections include the Alwyn V. Freeman International Law Collection, the Driker Antitrust Law Collection, the Jewish Law Collection, Michigan probate court opinions, Michigan Superfund site documents, U.S. Supreme Court Records and Briefs (original historical volumes from 1897-1935 and microfiche to the present), Michigan Supreme Court Records and Briefs from 1854 to the present, and U.S. Congressional documents from 1818 to the present. The electronic resources alcove in the Law Library provides access to over 200 titles on CD-Rom. Many electronic resources are now on the WWW and accessible from the Law Library's homepage.

The total combined collections of the University's seven libraries exceed 2.9 million volumes. Students have access to the materials in the Shiffman Medical Library, the Purdy/Kresge Graduate Library, the Science and Engineering Library, the newly opened Oakland Center and the modern Undergraduate Library Center (opened fall 1997). These collections support the multidisciplinary interests of the students and the research of the faculty. Materials that are not part of the University Library System's collections are obtained for Wayne State University students and faculty from other libraries in the state, in the country or the world within days and sometimes hours. The libraries of the Detroit Public Library and the Detroit Institute of Arts are within walking distance and are part of the Detroit Area Library Network (DALNET).

Georgia A. Clark, B.S., A.M.L.S., serves as the Law Library Director. She is assisted by a staff of librarians with experience in foreign and international law as well as the newest information and instructional technology. The staff includes Janice K. Selberg, Assistant Director, B.A., A.M.L.S., J.D.; Edward Lee, cataloger, LL.B. (Taiwan); and Michael Samson, Reference and Systems Librarian, J.D. and post graduate degree in economics (Romania), M.S.L.S. Full-time support staff and part-time student assistants contribute to the research and service mission of the Law Library. Reference and research assistance is available during the daytime, the evening and a portion of the weekend.

The majority of the study space in the Law Library makes use of natural light. Reading tables, adjacent to the book shelves, as well as wired carrels, are available throughout the building. Rooms are available for Wayne State University law students' group discussion and study.

The Library has benefited greatly from the generosity of donors who have made major contributions in recent years. Dr. Alwyn V. Freeman made a substantial gift of his personal collection of international and comparative legal materials, now called the Alwyn V. Freeman International Law Collection. A further gift consisting of 3,000 volumes of basic legal materials was made in honor of Judge Robert S. Marx. A gift from Donald E. Barris has made possible major renovations of the library's service areas, in particular the computer lab and reference/research area. Other friends of the Law Library have made major contributions that have enhanced the Law Library's collection and services.

Consult the Law Library's home page for more information: <http://www.lib.wayne.edu/lawlibrary/LLhome.html>

Law Degrees

The Law School offers academic programs leading to the degrees of Juris Doctor (J.D.) And Master of Laws (LL.M.). The J.D. is a graduate degree requiring a baccalaureate degree as a prerequisite. The LL.M. is a graduate degree offered by the Law School in the fields of taxation, labor law, and corporate and finance law which requires the J.D. or its equivalent as a prerequisite.

JURIS DOCTOR

MASTER OF LAWS

MASTER OF LAWS in Corporate and Finance Law

MASTER OF LAWS in Labor Law

MASTER OF LAWS in Taxation

THE JURIS DOCTOR (J.D.) PROGRAM

First-year Programs

The Law School offers three programs for the first year of law study. Students may enroll in a full-time day program, a full-time combined day/evening program or a part-time evening program. All first-year programs begin only in the fall term.

Students in the first-year day program must enroll in all six required courses. First-year day students should not be engaged in employment, even on a part-time basis.

The combined program is designed to meet the needs of students who wish to complete law school in three years, but who prefer to take several evening classes. The combined program may be elected by any applicant. Students take five of the six first-year required courses and an elective course. They complete the remaining required course, Criminal Law, in the second year in the evening. In the second year, they may take any course except Criminal Law in the day division if they choose. The combined-program students complete only three fewer credits in the first year than full-time day students. These three credits can be made up in the summer semester or in subsequent academic years, allowing students in the combined program to complete the J.D. degree in three years. Combined-program students enrolled in 27 credits for the academic year are strongly discouraged from employment, even on a part-time basis, during the first year of law school.

Students in the first-year evening program must enroll in all three required courses. Classes meet from 6:10-8:10 Monday through Thursday. Property, Torts, Criminal Law and Constitutional Law I are required in the second year. Students who begin law school in the evening division and enroll in eight credit hours per semester can complete requirements for the J.D. degree in five and one-half years. Students who begin in the part-time program are permitted up to six years to complete the degree. Evening students may accelerate their completion by taking more than eight credits per semester and by taking courses in the summer term. If a part-time evening student wishes to become full-time after the first year, he or she may do so. The student is required to take the Property, Torts and Criminal Law courses in the evening, but may concurrently enroll in day courses to make a full-time schedule.

First-year Program (prior to Fall 1998)

In 1997 the Law School faculty approved two changes to the first-year program. The first change is the division of courses into semesters. Civil Procedure and Contracts were semesterized beginning in the fall of 1997 so that students will receive a final grade for each semester of these year-long courses. (Previously, students received only one grade at the end of the academic year). Beginning in fall 1998, Property and Torts will become one semester rather than year-long courses. The Legal Research and Writing course will continue to be a year-long course and students will receive a final grade for the entire year's work. Criminal Law continues to be a one-semester course. The second change adopted by the faculty is the reduction of credit hours for Property from six to four credits and for Torts from five to four credits. This change allows the introduction of an elective course in the first-year day and combined programs.

First-year Summer Institute

The Summer Institute, which begins in June, offers one first-year required course with both substantive and skills components. The skills component helps to develop the student's legal writing abilities. Students also receive instruction in case briefing, preparation for class, outlining and examination writing. Full-time day students who attend Summer Institute have more time to devote to their studies during the academic year. Enrollment in the Summer Institute is limited to 40 students.

Upper-Class Program

After completion of the first-year program, students may choose from among a large number of elective courses and seminars covering a broad range of subjects. Students may elect courses that meet in the day or evening or a combination of day and evening. It is not uncommon for evening students to elect from day classes and vice versa, and for upper-class students to change from one program to the other. Both day and evening upper-class students may accelerate by electing courses in the eight-week summer semester.

Law students interested in interdisciplinary study, but who do not want to pursue a joint degree, may elect up to four law-related graduate level courses in other departments of Wayne State University. One graduate level course may be elected each semester, and J.D. credit for graduate courses must be approved in advance by the Assistant Dean for Academic Affairs.

Opportunities for Research and Writing

The Law School offers first-year students an excellent foundation in research and writing, including training in computer research. Upper-class students have the opportunity to pursue research in areas of their interest and enhance their writing skills by electing from the wide variety of courses, seminars and directed studies, and by participation in the Law Review.

Legal Research and Writing Courses

The Legal Research and Writing Program offers two courses: the four-credit Legal Research and Writing course required for first-year students and the three-credit Legal Writing: Advanced course available to upper-class students. Under the leadership of the Director of Legal Research and Writing, the program has earned an outstanding reputation. The Director and four other full-time instructors are experienced teachers who practiced law or were judicial clerks prior to teaching. The first-year Legal Research and Writing course begins with an intensive orientation program, which introduces new students to the court system, the case method of legal education, and methods of legal analysis. Following orientation, the Legal Research and Writing course meets once a week. Students also meet with their instructors in individual conferences. Course enrollment is small to allow for maximum student-teacher interaction and timely feedback on assignments. In the fall semester students research legal issues using Law Library materials and computer legal research programs and complete a series of memoranda designed to improve legal writing and analysis skills. Instruction in the course is coordinated with work in other first-year courses. Students draft pleadings in conjunction with the Civil Procedure course, and, with the assistance of the Contracts professors, students negotiate and draft a contract. In the winter semester the Legal Research and Writing course focuses on oral and appellate advocacy skills; the major assignment is an appellate court brief based on a comprehensive trial court record and lower court decision. Students end the course by presenting an argument based on their brief to a three-judge mock appellate court composed of local attorneys, many who are graduates of this fine program. To prepare for their argument, students may attend actual sessions of state and federal trial and appellate courts whose judges visit the Law School and hear arguments in actual cases. Students also practice their arguments before upper-class students in the Moot Court program.

After completion of the first-year Legal Research and Writing course, students may elect the advanced writing course. Legal Writing: Advanced is offered each summer term and allows students to enhance their skills in persuasive writing by preparing two trial-level briefs and an appellate brief. Enrollment in the course is limited to sixteen students to encourage student participation in discussions and to permit students to engage in peer review.

The current Director of Legal Research and Writing is Diana V. Pratt. She holds an A.B. degree from Radcliffe College, M.A. and Ph.D. degrees from Stanford University, and a J.D. degree from the University of Michigan Law School. After practicing law for five years, she joined the Law School's legal writing staff in 1981 and became Director of the program in 1983. She is the author of *Legal Writing: A Sys-*

tematic Approach, (in its second edition), the text used in the first-year Legal Research and Writing course at this Law School and several others. She has also authored numerous articles, and is editor of the 1996 conference proceedings issue of *Legal Writing: The Journal of the Legal Writing Institute*. She is active in many professional organizations, including the Plain English Committee of the State Bar of Michigan, the Association of American Law Schools Section on Legal Writing, Reasoning and Research (serving as chair in 1994) and is on the board of directors of the Legal Writing Institute.

Seminars and Directed Studies

The Law School provides numerous opportunities for students to engage in research and writing under faculty supervision. After the first year, students may enroll in a directed study (LEX 7990) for one or two credits and research and write a paper under the supervision of a member of the faculty. The number of credits and scope and subject matter of the project are determined by the faculty member who supervises the research and grades the paper. A maximum of four credits of the 86 credits required for the J.D. degree may be approved for directed study. Students with a special interest in commercial law may enroll in Commercial Law: Directed Research (LEX 7106), engaging in research projects the first year and may also enroll a second year and complete a writing project in that year.

Students also have opportunities to engage in research and writing by enrolling in one of a large selection of seminars offered by full-time faculty members in their areas of specialty. Seminar enrollment is limited to 25 or fewer students to encourage the widest possible participation in class discussion. Students enrolled in a seminar complete a substantial analytic paper and have the opportunity to share their paper with the other students in a discussion format. The faculty encourages students to publish their written work in law journals and other periodicals. A number of prizes are awarded each year for scholarly writing.

The Wayne Law Review

The Wayne Law Review, published since 1954, is the Law School's official scholarly journal. Three of the four annual issues include articles of general academic and professional interest authored by practicing attorneys and law professors, as well as comments written by Law Review members. A fourth issue is an annual survey of developments in Michigan law and is widely read by members of the Michigan legal community. In addition to providing a forum for the discussion of important legal issues, The Wayne Law Review offers an opportunity for students to enhance their research and writing skills and further their knowledge of the law.

Students are invited to join The Wayne Law Review either on the basis of high academic standing or the writing competition held each summer. Each student selected serves as an assistant editor, and, in addition to weekly editing assignments, is required to write an article of publishable quality on a legal topic of his or her choice. The Law Review facilities include separate offices for the executive board editors, individual carrels for each member, a library with a complete set of Michigan materials and modern computer research and word processing equipment.

After the first year of participation, students may take on significantly greater responsibility by election to the senior editorial board. The board, selected from among the first-year members by the prior year's board, both manages the publication of the journal and selects and edits the articles to be published. All senior members have the option of writing an additional article. The Gushée Prize is awarded to the junior or senior member who writes the best article published each year. For all members, Law Review involves a significant time commitment, but it offers an unparalleled opportunity for growth in understanding legal issues and a prestigious credential well-recognized by the judiciary and the practicing bar.

Degree Requirements

The Juris Doctor degree is conferred upon students who are admitted as candidates for the degree and who have satisfactorily completed the program of study prescribed in the Academic Regulations

of the Law School. Students must apply for the degree in the Law School Records Office at the beginning of the semester in which they plan to complete degree requirements.

The following are the requirements for the Juris Doctor degree.

- 1) A baccalaureate or equivalent degree upon admission.
- 2) Completion of each of the following required courses (with final grades of at least 'D'): Contracts, Property, Civil Procedure, Criminal Law, Torts, Constitutional Law I and Professional Responsibility; and completion of Legal Research and Writing (with a final grade of at least 'LP' — low pass).
- 3) Completion of three years in residence. (Students receive a half-year in residence for each semester of 10 credits or more and a quarter-year in residence for each summer term of five credits or more. Fewer credits earn years in residence at the ratio of one semester hour equals .05 years in residence. Students may not earn more than a half-year in residence for a fall or winter term nor more than a quarter-year in residence for a summer term.)
- 4) Completion of a minimum 86 semester credit hours and overall average of 'C' (2.0) or better on all credit hours completed.
- 5) The final year of study must be completed at this Law School.
- 6) Students who enter law school as full-time students have up to five years to complete degree requirements; students who enter as part-time students have up to six years to complete degree requirements.

Law School Academic Regulations

The faculty of the Law School has adopted academic regulations which cover degree requirements, examinations and other academic matters. Compliance with the regulations is required of all law students. The Academic Regulations are available in the Law School Records Office.

SPECIAL CURRICULAR PROGRAMS

Internships

Taking advantage of its location at the center of one of this country's largest metropolitan areas, the Law School offers students a broad range of opportunities for practical legal training through its internship program. The program is a cooperative effort between the Law School and courts, nonprofit law offices and various governmental agencies. Under standards established by the Law School, the work of student interns is supervised directly by practicing attorneys. Students have served as interns for academic credit for justices of the Michigan Supreme Court, judges of the Michigan Court of Appeals and many state circuit courts as well as judges of the United States Court of Appeals and District Courts. They have also served as interns in many prosecutors' offices and at the State Appellate Defender Office. Internships provide experiences in specialty areas such as tax law (Internal Revenue Service District Counsel Internship) and labor law (National Labor Relations Board Internship). Over 25 government offices and nonprofit agencies and numerous judges participate in the internship program.

Internships, which are open to upper-class students in good standing, give student participants a chance to apply the important analytical skills learned in the classroom to the solution of real legal problems. An internship with a court, for example, can provide students with insight into the operation of courts that cannot be provided easily in the classroom. Students interested in doing an internship must obtain the consent of the Director of Clinical Education. Students receive two or three credits for the internship, depending on the number of hours worked. Students will perform their work at the offices of the judge, government agency or nonprofit organization.

Intellectual Property Law Institute (I.P.L.I.)

Because several Wayne State University Law School faculty members are experts in areas of intellectual property law, the Law School is able to offer a remarkable variety of courses in such areas as patent, copyright and trademark law.

In addition to these courses, Law School students have the opportunity to take courses at another Detroit law school and at a law school across the border in Canada through the Intellectual Property Law Institute (I.P.L.I.).

I.P.L.I. was created in 1987 as a cooperative effort of the law faculties of Wayne State University, the University of Detroit Mercy and the University of Windsor in Ontario. The Institute offers an exceptional, rich curriculum for law students with courses and seminars in patent, copyright, trademark, computer and related technology, communications and media law and entertainment law. Law students who enroll in I.P.L.I. courses pay tuition to their home institution. Wayne State students receive transfer credit for I.P.L.I. courses taken at the other law schools.

International Programs and Publications

Wayne State University Law School offers a large number of courses in the area of international law. In addition to the courses at Wayne State, students can take courses at the University of Windsor Faculty of Law just across the border in Canada.

The Law School also sponsors two international student exchange programs, a fellowship for summer study at the Hague, and houses a leading publication project in the field of international and comparative criminal law.

Center for Legal Studies

The Wayne State University Center for Legal Studies provides the University and the wider community it serves with a forum for communication, collaboration and research on legal issues. Sharing the University's urban mission to teach and serve, the Center for Legal Studies has three main objectives: to promote interdisciplinary communication and collaboration among faculty members at the University who share research and teaching interests in law and law-related fields; to encourage and facilitate interdisciplinary research on topics related to the law; and to promote and enhance opportunities for the interdisciplinary study of law at the undergraduate and graduate levels.

The Center's academic program focuses on an interdisciplinary approach to legal studies, rather than training students for the practice of law as a profession. The Center for Legal Studies offers an undergraduate minor in legal studies through the College of Liberal Arts. Its focus is on understanding law and legal institutions in their social and historical context, from a multidisciplinary perspective. Over 70 courses are available to undergraduate students who elect the minor in legal studies. Faculty who teach in the program are located throughout the University, giving students a rich interdisciplinary perspective.

In addition, the Center promotes combined graduate degree programs in law and related fields; encourages interdisciplinary study by law students and others; provides faculty with information on funding opportunities for law-related research; maintains a faculty interest profile; and sponsors and plans lectures, conferences and workshops.

The Center for Legal Studies hosts a monthly lecture series featuring reports on law-related research conducted by Wayne State University faculty. It also sponsors visiting lectures by academic and professional scholars, and organizes conferences which bring together diverse segments of the community to focus on issues of common interest. In doing so, the Center serves not only the Wayne State academic community, but also the public at large in the Detroit metropolitan area, southeastern Michigan and throughout the state and region.

More information on the Center for Legal Studies may be obtained by telephone, (313) 577-3947, or on the Internet at <http://www.science.wayne.edu/~law/center.html>.

JOINT DEGREE PROGRAMS

Law students may pursue joint degree programs in law and history, law and political science and law and business administration. The programs lead to receipt of a J.D. from the Law School and a M.A. from the History or Political Science Department of the College of Liberal Arts, or a M.B.A. from the School of Business Administration. Students must be admitted separately to the J.D. and the master's degree programs. Each of the joint degree programs contemplates that the student spend his or her first year taking law courses followed by two-and-a-half to three years of concurrent studies.

Law and Business Administration

Law students who wish to enroll in the joint program leading to the J.D. and M.B.A. degrees may apply for admission to the M.B.A. program at the School of Business Administration during their first year of law school. As a part of the application process, the student will have to take the Graduate Management Admission Test (G.M.A.T.). In the M.B.A. program, students may choose from courses in the areas of accounting, business economics, entrepreneurship, finance, industrial relations, international business, management and organizational behavior, management information systems, personnel/human resources, marketing, quality management and taxation. In the J.D. program, students may enroll in a wide variety of courses in commercial and banking law, corporate, business and antitrust law, tax law and labor and employment law. Students may receive credit toward the J.D. degree for up to four law-related graduate business courses (one each semester) approved in advance by the Law School's Assistant Dean for Academic Affairs as long as the student receives a grade of 'B' or better in each course. The School of Business Administration allows the joint degree student to submit two law courses (up to six credits) as M.B.A. electives. Students who have met pre-M.B.A. foundation requirements ordinarily will be able to meet both J.D. and M.B.A. degree requirements in four years of full-time study.

Law and History

The joint degree program in law and history leads to the receipt of a J.D. from the Law School and an M.A. from the History Department of the College of Liberal Arts. Law students may apply to the History Department for admission to the M.A. program, and upon admission may enroll in history courses after successful completion of their first year of legal studies. In the M.A. program, students may focus their studies on chronological history, including Roman, Western European and American backgrounds of law; on subjects related to specific areas of law practice such as labor, business or political history; or on the historical context of the lawyer's role in public policy making in domestic and international affairs. The History Department may allow credit toward the M.A. degree for up to eight credits of Law School courses. Students may receive credit toward the J.D. degree for up to four law-related graduate history courses (one each semester) approved in advance by the Law School Assistant Dean for Academic Affairs, provided the student receives a grade of 'B' or better in each course. The joint degree program can be completed in three-and-one-half to four years of full-time study. A brochure more fully describing the joint degree program in law and history is available from the History Department or the Law School.

Law and Political Science

The joint program in law and political science permits a student to obtain both the J.D. degree and an M.A. in political science with a concentration in public policy. Students interested in the joint program should apply to the Political Science Department for admission to the M.A. program during their first year of Law School. As part of the M.A. program students may take courses focusing on public policy, political institutions and processes, and economics. Both a master's essay and written comprehensive examination are required for the M.A. degree in political science. As part of the J.D. program, students may take courses in constitutional law, administrative law and other areas of government law. The Political Science Department may allow credit toward the M.A. degree for up to 12 credits of law courses. Students may receive credit toward the J.D. degree for up to

four law-related graduate political science courses (one each semester) approved in advance by the Law School Assistant Dean for Academic Affairs provided the student receives a grade of 'B' or better in each course. The joint degree program generally requires four years of full-time study.

Other Graduate Study

Law School students may pursue a master's or other graduate degree in fields other than business administration, history or political science concurrently with their legal education. Upon completion of their first year of legal studies, students may apply to the appropriate school or college of the University for admission. If admitted, students may divide their time between the Law School and the concurrent program of study, devoting sufficient time to each to meet the academic and residence requirements of both schools. Students are not allowed to apply credit for law courses toward another graduate degree or to apply credit toward the J.D. degree for course work taken in another graduate program other than in the approved joint degree programs.

Bar Admission

Applications and information about the Michigan Bar Examination can be obtained by writing to the State Bar of Michigan Committee on Character and Fitness, 306 Townsend, Lansing, Michigan 48933-2083. Students who contemplate practicing law in states other than Michigan should consult bar examiners of those states at the earliest opportunity regarding the requirements of such states. In several states, prospective candidates are required to notify the bar examiners of their intention of taking the examination upon graduation when they begin law study.

Although the curriculum of the Law School is not primarily designed for preparing students to pass the various state bar examinations, substantially all of the subject matter of the examinations is covered adequately in the regular courses. The objective of the Law School is the development of an understanding of the theory of law, its application and the techniques of practice — in other words, to prepare a student for the practice of law.



ADMISSIONS POLICIES AND PROCEDURES

Preparation for Law Study

The Law School has no requirements with respect to the content of prelegal education, but the Admissions Committee will take into account the nature of college work completed as well as the grades achieved. Proficiency in the English language, both written and spoken, and in analytical skills is essential to the study of law.

The suggestions for prelaw preparation in The Official Guide to U.S. Law Schools, published by the Law School Admission Council, are excellent. This guide contains material on the legal profession and the study of law, and information on each American Bar Association (ABA) accredited law school. It may be ordered from the Law School Admission Services (LSAS) in Newtown, Pennsylvania, and is available in most bookstores and libraries. Prospective students are welcome to come into the Wayne State University Law School Admissions Office during regular office hours to look at the official guide and other law school reference materials.

Admissions Policy

An applicant for admission to the Wayne State University Law School J.D. program must have a bachelor's degree from a college or university. (Prior to registration, each admitted student must arrange for the Law School to receive an official transcript from the degree-granting institution as proof of the grant of the degree.) Each applicant must also take the Law School Admission Test (LSAT) and register with the Law School Data Assembly Service (LSDAS). Applicants should take the LSAT no later than February of the year in which they intend to enroll. Upon request to the Admissions Office, applicants may be given permission to take the next LSAT in June, but should understand that most admissions decisions are made before June LSAT scores become available. The Admissions Office will accept LSAT scores up to four years old.

It is the goal of the Law School's Admissions Committee to ensure that the entering class is composed of the most highly qualified applicants. The Committee believes that, initially, the educational process during law school and the legal profession are best served by an admissions process that results in the selection of a diverse and talented student body.

The Committee considers the following factors in reaching admissions decisions:

- 1) The applicant's academic achievement and potential, as shown by the LSAT score and undergraduate grade point average;
- 2) Any special features of the applicant's academic record which may have had an impact on his or her grade point average, such as the age of the undergraduate grades or any marked improvement in grades shown in the later years of college;
- 3) Other relevant personal qualities and characteristics of significance, such as racial and ethnic background, socioeconomic and educational disadvantage, work and volunteer experience, leadership qualities, commitment to community service and communication skills. Applicants are urged to discuss any or all of these relevant factors in their personal statement, which is required as part of the application process.

Reconsideration

An applicant may request reconsideration of an adverse admissions decision by writing a letter to the Assistant Dean for Recruitment and Admissions stating the specific reasons why reconsideration is thought to be merited. The application will then be reviewed and reconsidered by the Admissions Committee. In the past, applicants who have successfully petitioned for reconsideration are those who have submitted updated information such as new test scores or additional grades.

Deferred Admissions

The Law School does not defer admissions. An admittee who withdraws from the class must submit a new application and fee for the subsequent year for which he or she seeks admission.

Reduced Program

The first-year day program curriculum is mandatory, but day students who have child care responsibilities or significant health care concerns may be permitted to take a slightly reduced course load. The applicant must submit a written request prior to registration to the Assistant Dean for Recruitment and Admissions setting forth the personal circumstances justifying the request for admission as a reduced-load student.

A Visit to the Law School

Prospective applicants are encouraged to visit the Law School and tour the Law School and University campus, attend a first-year class, participate in informal discussions with students about law school, and consult with a member of the Admissions Office staff about admissions policies, procedures and other concerns.

Application Procedures

There is a great deal of competition for the entering class at Wayne State University Law School. The Law School received more than 1,000 applications for the 1997-98 academic year, and fewer than one-half of the applicants were offered admission. The median undergraduate grade point average of the 1997-98 entering class was 3.25 and the median LSAT score was 154. Applicants for admission to the first-year class are admitted to the fall term only.

Instructions to Apply for Admission to the First-Year Class

Applications for admission are accepted beginning October 1. Applications filed on or before March 15 receive priority consideration. Applicants are encouraged to apply before this priority date because the Law School has a rolling admissions process.

The applicant's file will be ready for consideration when the Admissions Office has received the following:

- 1) The Law School Application for Admission signed and dated by the applicant, with all required information on the application and the attached cards;
- 2) The nonrefundable application fee, submitted with the application, of \$20 for U.S. citizens or permanent residents, and \$30 for non-U.S. citizens. Checks or money orders should be made payable to Wayne State University. Checks drawn on Canadian or other foreign banks should carry the notation "Payable in U.S. Funds Plus Service Charge." Applicants should not send cash;
- 3) A brief personal statement designed to call to the attention of the Admissions Committee any experiences, interests, unusual circumstances or any other information which the applicant believes would help the committee evaluate his or her potential for success at the Law School. The Law School does not grant requests for personal interviews, so it is important for the applicant to include any special circumstances or other relevant factors in his or her personal statement;
- 4) The LSDAS Report, sent by LSDAS which will include the applicant's LSAT score(s), copies of transcripts from all of the U.S. undergraduate schools the applicant has attended and an analysis and summary of the transcripts. (The applicant must direct each U.S. undergraduate school attended to send a transcript to LSDAS. If the applicant's transcripts are not sent directly to LSDAS, LSDAS will not complete its report and the application will be incomplete.) An applicant with a degree from an educational institution outside the United States must also submit a notarized copy of the undergraduate transcript, translated into English. An applicant who earned his or her bachelor's or equivalent degree from a college or university outside of the United States, Canada or Puerto Rico, may not be eligible to subscribe to LSDAS and should refer to the Law Services Information Book or contact LSAS for advice;

5) A letter of recommendation from an individual, such as a college professor or department chairperson, who can comment on the applicant's intellectual abilities and academic performance. An applicant who has been out of school for a number of years may substitute a letter of recommendation from an employer. Letters of recommendation should be sent directly to the Admissions Office by the recommender on the form provided in the application packet. Only one letter of recommendation is required, but the Admissions Office will review up to two letters.

Admissions Decisions

Applicants with high LSAT scores and grade point averages are administratively admitted and applicants with very low scores may be administratively denied admission. Applicants who are neither administratively admitted nor denied are placed in the discretionary pool. The Admissions Committee reviews applications from the discretionary pool and decides whether to admit, deny or wait list. Although a rolling admissions process is generally employed, discretionary admission decisions are the most difficult and usually made later in the admission year. The Admissions Committee is composed of Law School faculty members assisted by administrative staff. The administrative staff provides information, recommendations and other assistance to the faculty members who vote on the individual applications.

Transfer Applicants

A transfer applicant must have completed all of the first-year day or evening courses required by his or her ABA-accredited law school. Applicants must have superior law school academic credentials to be offered admission. Transfer students are admitted to the fall term only. The application deadline for transfer applicants is July 1.

A transfer applicant's file will be ready for consideration when the Admissions Office has received all of the following:

- 1) The Law School Application for Admission;
- 2) An official transcript sent directly from the applicant's law school including the final grades recorded for all law school courses completed (a photocopy will not be accepted);
- 3) A letter of good standing from the dean of the applicant's law school;
- 4) A copy of the applicant's LSDAS report;
- 5) An official transcript sent directly from the applicant's degree-granting undergraduate school.

Guest Student Applicants for Fall and/or Winter Term(s): The transfer applicant requirements and procedures outlined above apply to a law student who wishes to enroll at Wayne State University Law School for one or two terms as a guest student and who intends to transfer credit back to his or her 'home' law school. In the case of a guest student, the letter of good standing should also include a statement granting permission for the applicant to attend Wayne State University Law School for the semester(s) indicated, an agreement to transfer credits earned at the Law School and any other requirements or limitations.

Guest Student Applicants for Summer Term: A student from another ABA-accredited law school may take one or two summer courses at Wayne State University Law School provided the student is in good standing and receives permission from his or her "home" law school. Application should be made on the Law School Summer Guest Application available from the Admissions Office.

MASTER OF LAWS (LL.M.) PROGRAM

The graduate program offers the degree of Master of Laws (LL.M.) in the fields of labor law, taxation and corporate and finance law. It is primarily a part-time evening program designed to meet the needs of practicing lawyers for advanced specialized training, although students may elect a full-time schedule.

In addition to receiving credit for courses offered by the Law School, an LL.M. student may also receive credit for approved graduate courses from other schools of the University that apply to the student's field of study.

Admission Requirements:

Graduation from an American Bar Association-accredited law school in the United States is normally required before an applicant can be considered for admission to this program. Consideration is also given to law graduates from other common-law countries with equivalent J.D. (or LL.B.) degrees and to students with distinguished academic records from non-common-law countries. Foreign applicants must demonstrate basic English language proficiency. A score of 600 on the Test of English as a Foreign Language (TOEFL) is required.

Application for Admission:

Application forms may be obtained from:

Wayne State University Law School
Director of Graduate Studies
468 Ferry Mall
Detroit, MI 48202

Transcripts of the applicant's undergraduate and law school academic records are required. Applications for the fall semester must be received by the University not later than the preceding July 1, and for the winter semester not later than the preceding November 1.

Applications, together with the application fee of \$20 (\$30 in the case of a foreign applicant), and transcripts should be sent or delivered to:

Wayne State University
Office of Graduate Admissions
Detroit, MI 48202

Further information may be obtained from the Law School Director of Graduate Studies at (313) 577-1053.

TUITION, FINANCIAL AID AND SCHOLARSHIPS

Tuition and Fees

Tuition and fees cited are in effect as of the publication of this bulletin and are subject to change at any time without notice by action of the Board of Governors. Consult the official Law School Schedule of Classes, published in advance of each term, for tuition and fees in effect at the time of registration. In accordance with action of the Board of Governors, a portion of these fees is used for operation of the Student Center.

TUITION FOR J.D. AND LL.M. PROGRAMS

Resident \$230 per credit
Non-Resident \$488 per credit

NOTE: J.D. And LL.M. students who elect graduate-level courses in other University schools and colleges pay regular graduate resident or nonresident fees, see page 18.

For additional information regarding fees, payment of tuition, and residency see 'Tuition and Fees' in the General Information section of this Bulletin, beginning on page 18.

Financial Aid

Resident tuition at Wayne State University Law School is less than half the amount charged by the four other law schools in Michigan. This reasonable tuition allows many Wayne State law students to finance their legal education with little or no debt upon graduation. The Law School's Financial Aid Department provides counseling and aids students in financing their education with the least debt at the lowest rates of interest. The department administers a variety of programs that provide financial assistance to students who otherwise would be unable to meet the costs of their Law School education. Assuming eligibility, students are awarded a financial aid package which may include grants, loans and work study from the following financial aid programs.

Board of Governors Grants

These grants are provided by the Law School and are applied to tuition costs. The amounts vary up to a maximum of \$2,600 for the academic year (fall and winter terms).

Federal Perkins Loan

The maximum a student may borrow under this program is \$2,500 for an academic year (fall and winter terms). For loans obtained after 1987, repayment begins and interest (at the rate of 5 percent) starts to accrue nine months after graduation.

Federal Direct Stafford Loan

The maximum a student may borrow under this program is \$8,500 for the year (fall, winter and summer terms). Interest varies based on the treasury bill rate to a cap of 8.25 percent. Repayment begins and interest starts to accrue six months after graduation.

Federal Direct Unsubsidized Stafford Loan

The maximum a student may borrow under this program is \$18,500 per year (fall, winter and summer terms), except that the maximum is reduced by any amount a student borrows in that year from The Federal Direct Stafford Loan program. Regardless of financial need, a student may receive a direct unsubsidized Stafford Loan up to the standard budget amount (or \$18,500, whichever is lower), but only after the student has been awarded his or her maximum Federal Direct Stafford Loan. Interest on the Direct Unsubsidized Stafford Loan varies based on the treasury bill rate up to a cap of 8.25 percent. Interest starts to accrue when the loan is received and continues while the student is in school. Students have the option of paying

the monthly interest while in school. Repayment begins six months after graduation.

Federal and Michigan Work-Study

A student may be employed with the Law School's Free Legal Aid Clinic, with the Law Library, as a research assistant to a law professor, with a University department or with an employer that has a work-study contract with the University. The maximum award is \$3,500 for the academic year (fall and winter terms), and \$4,000 for the summer term. The Law School strongly discourages full-time first-year students from any employment. For that reason, work-study awards are not offered to law students until after they have completed their first year of studies. The Michigan Work-Study program is available only to Michigan residents during terms in which the student is enrolled at least half-time.

Eligibility and Policies

The following summarizes eligibility requirements and University policies for the above financial aid programs.

Foreign Students: All financial aid programs require that a student be either a U.S. citizen or a permanent U.S. resident.

Part-time J.D. Students: J.D. students must be enrolled at least part-time (five to nine credits for the fall and winter terms) to be eligible for the financial aid programs. However, in order to be eligible for a Board of Governors Grant, a J.D. student must be enrolled full time (at least 10 credits for the fall and the winter semesters).

LL.M. Students: LL.M. students who are enrolled at least part time (four to seven credits each term) are eligible for financial aid programs. However, LL.M. students are not eligible for Board of Governors Grants.

Summer Term Awards: Board of Governors Grants are not awarded for the regular summer term, but may be awarded to students enrolled in the first-year Summer Institute if funds are available.

Federal Perkins loans are not awarded for a summer term. Upper-class J.D. students who are enrolled at least part-time for a summer term (three or four credit hours) are eligible for their remaining need via the direct loan and work-study programs. Law students who are not enrolled in law courses for the summer term may be eligible for the federal work-study program.

Guest Students: The Law School Financial Aid Department does not process financial aid for Wayne State University Law School students for terms in which they attend another law school as a guest, but the other law school may be willing to process the financial aid. The department also does not process financial aid for students from other law schools who are guests at this law school. The guest student must request that his or her home school process financial aid, and this University will disburse financial aid processed by the home school. Wayne State University does not enter into consortium agreements with other law schools.

Satisfactory Academic Progress: After the first year of law school, in order to be eligible for financial aid, a law student must meet the requirement of satisfactory academic progress, which, in the case of J.D. students, is defined by the Academic Regulations of the Law School, and in the case of LL.M. students is defined by the University.

Default: Eligibility for financial aid assumes that the student is not in default on any federal or nonfederal student loan. Students who are in default should contact their loan servicing center for assistance to re-establish eligibility.

Determining Need

The Law School Financial Aid Department determines each financial aid applicant's need by a standard method of analysis. Each year the school sets standard budgets that will adequately cover tuition, books and certain living expenses. A student's need is determined by deducting the expected contribution of the student toward his or her own education from the standard budget. Resources of a student's parents are not considered in needs analysis for any of the need-based financial aid programs except the Board of Governors Grants.

To ensure that the neediest students who do not have other financial resources are awarded Board of Governors Grants, parents' calculated contribution is factored in to determine need for a school year if the student was claimed as an exemption on the parents' income tax return, or if at the time the student first enrolled in the Law School, he or she was unmarried and under 25 years of age and continues to be unmarried.

Application and Deadlines

To apply for financial aid, a student should:

1) Complete the Free Application for Federal Student Aid (F.A.F.S.A.) or the Federal Renewal Application and file it with the federal processor (The F.A.F.S.A./Renewal data will be received electronically by WSU);

2) Obtain the Wayne State University Financial Aid Application, complete and return the application with the required documents to the Law School Financial Aid Department.

The Early Filing Deadline for submission of the S.A.R. and the Wayne State University Law School Financial Aid Application is April 30. Students whose F.A.F.S.A./Renewal forms are received by the Federal Processor on or before April 30 will be considered for Board of Governors Grants. Those students who miss the April 30 filing and submission date should still complete the financial aid process and submit required forms promptly.

Students are no longer required to submit financial aid transcripts from post-secondary schools attended, except that currently enrolled law students must obtain a financial aid transcript from law schools they attended as a guest student.

All processing of Federal Stafford and Federal Unsubsidized Stafford Loans is now done electronically through the Federal Direct William D. Ford Loan Program. Students should not obtain loan applications from banks.

A Financial Aid Handbook that gives more detailed information on financial aid programs is available from the Law School Financial Aid Department. The handbook also includes information about the Mi-Loan, private loans and the Bar Loan.

Law School Grants and Loans

The Law School has two small grant funds and several loan funds.

Ruth and Mitchell Bacow Scholarship Fund

Established in 1986 by Ruth and Mitchell Bacow, this fund provides grants or loans to law students with financial need.

Law School Short-Term Loans

Several special funds provide short-term interest-free loans to law students to meet unexpected expenses. These funds include the Leon Cousens Memorial Loan Fund, the Emergency Loan Fund, the Alexander Freeman Loan Fund, the George N. and Phyllis J. Parris Loan Fund, the Joseph S. Radom Loan Fund, the Michael L. Stacey Loan Fund, the William D. Traitel Loan Fund, the Ernest C. Wunch Student Loan Fund and the Law School Loan Fund. Applications for loans from any of these funds are available from the Law School Assistant Dean for Academic Affairs.

Law School Minority Student Fund

Grants are awarded through contributions from law firms, alumni and friends of the law school interested in furthering the legal education of minority students.

Scholarships, Awards and Prizes

The following scholarships, awards and prizes are determined on the basis of academic achievement, course performance, written work and service to the Law School. In some cases, financial need is considered. Recipients of most of these awards are honored at the Law School Honors Convocation held each fall. All of the funds which support these awards are administered by the Assistant Dean for Academic Affairs. Eligible students are automatically considered for these awards and applications are not required unless noted in the description of the award.

David Adamany Constitutional Law Scholar Award: This award, established by University President David Adamany, is made to the law student who is the outstanding scholar in Constitutional Law.

Donald E. Barris Trial Competition Awards: These awards, established by the law firm of Barris, Sott, Denn & Driker, P.L.L.C., are given to the best teams in the Student Trial Advocacy Program fall and winter competitions.

Bodman Longley Scholarship: This scholarship, established by the firm of Bodman, Longley and Dahling, is awarded to an outstanding minority student entering the senior year.

Nathan Burkan Memorial Competition Award: Awards are made annually by the American Society of Composers, Authors, and Publishers to students at each law school who write the best papers on the subject of copyright law.

Kenneth V. Cockrel Scholarship: This scholarship, in memory of Kenneth V. Cockrel, class of 1967, is awarded to a student who has a commitment to racial and economic equality and the active promotion of equal justice; a commitment to excellence; proven academic ability; and outstanding character and integrity. A notice inviting applications is posted early in the fall semester.

Dean's Scholars: Annual awards from contributions by alumni and friends of the Law School and from the Ferne Walter Scholarship Fund are provided for members of the second-year class, based on superior first-year performance.

Deloitte and Touche L.L.P. Award: An award is made annually to a student on the basis of achievement in the area of tax law.

Frances and Charles Driker Scholarships: In recognition of the many contributions of Eugene Driker, class of 1961, to the Law School, this fund was established in honor of Mr. Driker's parents by Michael Timmis, class of 1965. The scholarships are given each year to one day and one evening Wayne State Law School student with the highest academic average at the end of the first year of studies.

Evans and Luptak Business Planning Award: An award is made to the student who receives the highest grade in the course, A Transactional Approach to Business Planning.

Alexander Freeman Fellowship: Established by the late Mr. and Mrs. Alexander Freeman in recognition of the contributions to international law by Dr. Alwyn Freeman, this fund in part a student's summer study at the Hague Academy of International Law in The Netherlands. A notice inviting applications is posted in February.

Gladys Freid Scholarship: This scholarship, established by Bernard Freid in honor of his mother, is awarded to a first-year student showing academic promise and need.

Fruman Foundation Scholarships: These scholarships were established by Dr. Lee S. Fruman, class of 1989, in honor of his parents, Albert and Dorothy Fruman. They are awarded to the three evening students with the highest academic averages at the end of their second year of studies.

Leonard R. Gilman Scholarship: This scholarship, established in memory of Leonard R. Gilman, class of 1967, who was the United States Attorney for the Eastern District of Michigan, is awarded on the basis of scholarship, qualities of character and leadership, and an interest in criminal law. A notice inviting applications is posted early in the fall semester.

Marshall D. Goldberg Memorial Award: An annual award established by the law firm of Schluskel, Lifton, Simon, Rands, Kaufman, Galvin & Jackier, in memory of Marshall D. Goldberg, is given to the best oralist in the Moot Court Law Day Competition.

Ernest and Freda Goodman Scholarship: This scholarship is awarded to a student with financial need who demonstrates a substantial interest in, and significant contribution to, the goals of civil rights and social justice. A notice inviting applications is posted early in the fall semester.

Richard B. Gushée Writing Award: This award, established by David D. Joswick, class of 1969, in honor of Richard B. Gushée, is made annually for the best student work published or to be published in The Wayne Law Review.

Charles V. Hammond Memorial Scholarships: These scholarships, in memory of Charles V. Hammond, class of 1982, are awarded to Wayne State Law School students for outstanding academic achievement in the first and second years of law studies.

Jason L. Honigman Scholarship: This scholarship, established by the late Jason L. Honigman, is awarded to the editor in chief of The Wayne Law Review.

Iannotti Scholarship: This scholarship, established by Daniel V. Iannotti, class of 1979, is awarded to a student of Italian descent who has demonstrated qualities of scholarship and character. A notice inviting applications is posted early in the fall semester.

Introduction to Lawyering Award: This award, funded by a gift from Dean James K. Robinson, is made to the student who writes the best paper on the future of the legal profession for the course, Legal Profession: An Introduction.

Jaffee, Raitt, Heuer & Weiss Scholarship: This scholarship, established by the law firm of Jaffee, Raitt, Heuer & Weiss, is awarded to an executive board editor of The Wayne Law Review.

Raymond L. Krell Scholarship: This scholarship, established by Raymond L. Krell, class of 1958, is awarded to a student who has need, an interest in trial work and a commitment to pro bono or charitable activities.

Law Alumni Scholarships: Generous contributions of the alumni and friends of the Law School are used to provide scholarships to superior members of the entering class.

Arthur F. Lederle Scholarships: These scholarships, established by family and friends of the late United States District Court Judge Arthur F. Lederle, are awarded to first-year students with financial need and potential for superior work.

Norman I. Leemon Award: An annual award in honor of Norman I. Leemon, class of 1942, is given to the law student who is an outstanding scholar in Real Estate Finance Law or another property-related course.

Legal Research and Writing Best Appellate Briefs Awards: Awards are made to students for the best appellate brief for each first-year Legal Research and Writing lecturer. An award is also made for the best brief in the Advanced Legal Writing course.

Anthony Maiullo Memorial Scholarships: These scholarships are sponsored by Betty M. Maiullo in honor of her late father, Anthony Maiullo, a noted trial practitioner in the Detroit area, and are awarded to outstanding first year and upperclass students.

Wade H. McCree Jr. Scholarship: This scholarship, in memory of Judge Wade H. McCree Jr., is awarded to a minority student or students of integrity and high promise.

George Menendez Memorial Scholarship: This scholarship, in memory of George Menendez, class of 1949, is awarded to a Hispanic student on the basis of academic potential or achievement.

Bruce A. Miller Family Scholarship in Labor Law: Bruce A. Miller, class of 1954, established the Miller Family Scholarship in honor of his family. It is awarded to a student based on performance in labor law courses.

Walter Nussbaum Award: Established by friends of the late Walter Nussbaum, this award is made annually to a student who excels in the course, Professional Responsibility and the Legal Profession.

Cornelius Pitts Criminal Defense Award: Established by noted criminal defense attorney, Cornelius Pitts, class of 1964, this award is given to the African-American student who receives the highest grade in the Criminal Law course.

Edward H. Rakow Memorial Award: An annual award is made by the Federal Bar Foundation of Detroit to a junior or senior law student based on scholarly achievement in corporate and securities subjects.

Renfrew Prize in Legal History: Established by James Renfrew, class of 1950, this award is made to the student who writes the best original essay of publishable quality dealing with American, English or continental legal history.

Fred B. Rothman Award: An award, in memory of Fred B. Rothman, is made to the student who writes the best brief in the first-year Legal Research and Writing course.

Scholarship Key Certificates: Gold, silver and bronze key certificates are awarded to students who have demonstrated outstanding academic achievement for the past academic year.

Boaz Siegel Award: An annual award is made for the best publishable paper in the field of pension, health and welfare or labor law.

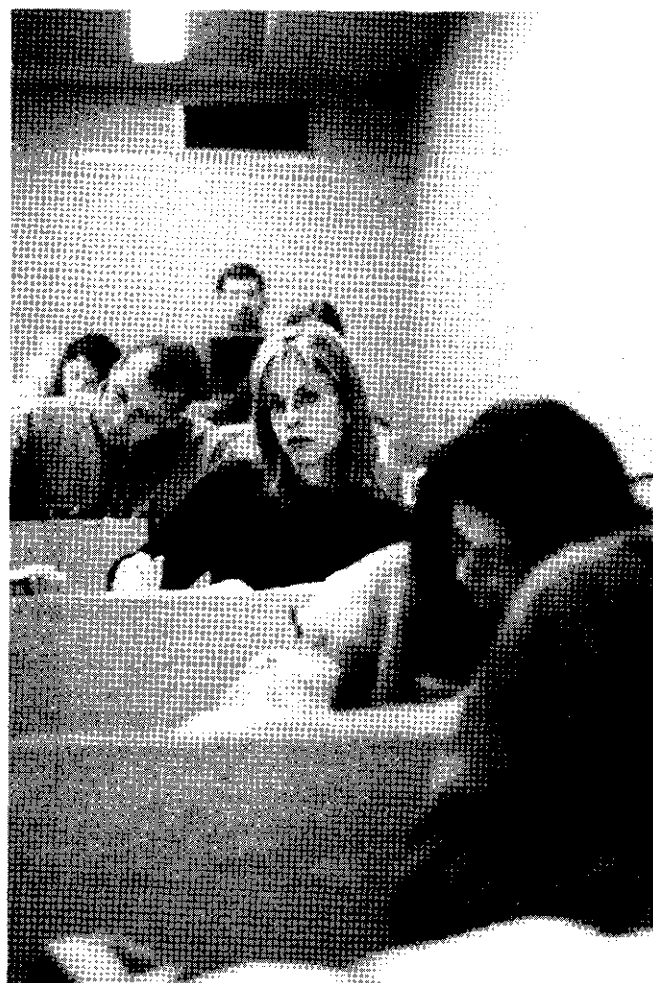
Max Smitt Scholarship: Established by Helene Warren in memory of her brother, Max Smitt, a distinguished member of the State Bar, the scholarship is awarded based on academic performance and need.

Ira Spoon Award and Scholarships: Established by the late Ira J. Spoon, class of 1945, the award is made annually to the student who has written the best paper on the subject of urban development or property law. The scholarships are awarded to Wayne State Law School students on the basis of scholarly achievement in the first-year Property course.

State Bar of Michigan Negligence Law Section Scholarships: Scholarships, in memory of David Martin and James Tuck, are awarded to upper-class students based on need and excellence in tort law. Scholarships are awarded to two first-year students based on need and an essay competition. A notice inviting applications for the first-year student scholarships is posted early in the fall semester.

William D. Traitel Scholarships: These scholarships, designated for students who have demonstrated superior academic achievement, are awarded to members of The Wayne Law Review board.

Ferne Walter Scholarships: Memorial scholarships in honor of Ferne Walter, Class of 1941, are awarded on the basis of outstanding academic achievement and need.



SERVICES FOR STUDENTS

Career Services

The careers of our alumni reflect well on the Law School. Wayne State University Law School alumni are established in virtually every state and many foreign countries, although most graduates choose careers in Michigan. Successful alumni include founders and senior partners in major metropolitan-area law firms, judges of the United States Courts of Appeals, justices of the Michigan Supreme Court, law school deans and professors, government leaders, public interest lawyers and those who have careers in fields such as sports and entertainment.

Through the Office of Career Services under the direction of an assistant dean, the Law School has made a major commitment to assisting students, recent graduates and alumni in transition in their efforts to plan, prepare for and pursue successful and satisfying careers. The office conducts a wide variety of recruitment programs, including on-campus interviews and career development workshops designed to introduce students to the varied opportunities in law and to provide them with skills useful to the pursuit of a meaningful career. Individual consultations and comprehensive resources are available to students and alumni engaged in employment searches.

During several weeks in the fall, and again in the spring, the office coordinates on-campus interviews by over 60 employers. A broad range of employers, including law firms, accounting firms, government entities, legal services agencies and public interest organizations interview for both post-graduate positions and summer law clerk opportunities. Employers unable to participate during the weeks set aside for on-campus interviewing may arrange to interview at other times during the academic year, except during study and examination periods. For employers unable to visit campus, the Career Services Office coordinates résumé referral services.

On-campus interviews and résumé referrals are supplemented by other recruitment initiatives. The Career Services Office publicizes employment opportunities from hundreds of employers on its 24-hour telephone job hot line, updated weekly, and in its two publications, the Student Newsletter and Job Bulletin, published weekly, and the Alumni Newsletter and Job Bulletin, published monthly. The Student Newsletter also offers career planning advice and reports on new publications, upcoming programs, impending deadlines, summer study and graduate opportunities, internships and fellowships, writing competitions and professional organizations. The Alumni Newsletter includes market analyses, strategy advice and skills tips. The Career Services Office sponsors student participation in select national job fairs, including the Loyola University Patent Law Fair and the Black Law Student Association Midwest Regional Job Fair. Students and alumni seeking positions are provided with telephone, fax, and photocopying privileges at no charge.

Throughout the academic year the office conducts programs designed to help students identify career interests and to provide them with skills and information to pursue career opportunities. Seminars introduce students to areas of legal practice and types of employers, options in alternative or nontraditional careers, and developments in the legal employment market. In addition to its own programs, the office assists student organizations in hosting career days and sponsoring speakers on careers in specialized areas of the law. Workshops offered by the Career Services Office focus on the creation of employment search plans, preparation of effective résumés and letters, development of networking and interview skills, and utilization of on-line career search databases. Specialized presentations and services are offered for students interested in judicial clerkships. Individual consultations with the Assistant Dean for Career Services or the career counselor are available by appointment and during designated drop-in hours. The office has developed especially for Wayne State University Law School students its Career Services Handbook which includes an overview of its services and offers guidelines on career planning.

The office maintains an extensive career library for use by students and alumni, including reference books, directories, serials, periodicals,

newspapers, commercial employment listings, videotapes and audiotapes, and selectively collected and cataloged reprints of numerous topical articles. There are also comprehensive employer profiles, as well as information on summer study programs, internships and fellowships, graduate programs, writing competitions and bar admission requirements. Computer terminals located in the office may be used for research in on-line career libraries. For students seeking public interest opportunities, the Career Services Office subscribes to the on-line database, Pro Bono Students America. Students and graduates seeking employment in areas out of state or overseas have access to specialized materials. Through reciprocity agreements with accredited law schools nationwide, those considering relocation may obtain job postings, market information, resource materials and career counseling. Newsletters with employment postings from over 75 law schools throughout the country are also available.

The office has application materials for the Michigan Bar Examination, the Multi-State Professional Responsibility Examination, and professional organizations such as the American Bar Association, State Bar of Michigan, Michigan Patent Lawyers Association, American Intellectual Property Law Association, American Trial Lawyers Association, Michigan Trial Lawyers Association, Women Lawyers Association, Federal Bar Association and the National Disabled Bar Association.

Most of the Law School's graduates choose to practice in Michigan upon completion of their law studies. Private law firms attract a majority of graduates. Others accept positions with local, state and federal government, including some in prestigious judicial clerkships; corporations; public accounting firms; public interest and legal services employers; and academic institutions. Others use their law degree and legal training to advance current or prelaw school careers, or to pursue careers in business and other law-related fields.

Each year the Career Services Office conducts an employment survey of the graduating class. Of the 193 graduates in the 1996 class, 91.4 percent of those responding to the survey indicated that they were employed within six months of graduation. The average salary for 1996 graduates reporting was \$41,745. The following table illustrates the distribution of post-graduation employment of the 1996 class.

Private Firms	58.1 percent
Government including Judicial Clerkships	20.5 percent
Corporations	17.1 percent
Public Interest Employers	4.3 percent

Every employer that recruits through the Law School is expected to adhere to the school's nondiscrimination policy. In addition, both students and employers are expected to adhere to the American Bar Association standard which prohibits full-time law students from remunerative employment in excess of 20 hours per week.

Academic Counseling

Academic counseling is available at the Law School in the Office of the Assistant Dean for Academic Affairs. Assistance to students in choosing a program of study as well as counseling concerning course load and other academic-related matters is provided with the goals of maximizing each student's potential for academic success and best preparing each student for entry into the legal profession.

Supportive Services

The Law School's Supportive Services Office is unique, offering both academic assistance and counseling services. The program, directed by an assistant dean with experience in law practice, offers one-on-one tutoring, small group sessions and academic assistance. Students are encouraged to drop by to discuss any aspect of their law studies, including course selection and schedule, study and interviewing skills. Knowing that there is someone at the Law School who will take the time to discuss any problem or concern can be very reassuring.

The Supportive Services Office also assists students with disabilities. Students requesting services should contact the office after admis-

sion to design a course of study. The office will assist the student in receiving services, reasonable accommodations and academic adjustments.

Throughout the year the Supportive Services Office sponsors seminars on topics of interest to first-year law students such as preparing for class, case briefing, stress and time management, outlining and examination writing. The office also organizes attorney/student study groups. In group meetings, attorneys, most of whom are recent Wayne State University Law School graduates, help students strengthen their analytical reasoning skills and examination writing skills. The office maintains a resource lending library with textbooks, hornbooks and substantive-law review tapes, as well as materials on first-year survival skills, law study techniques and examination writing skills.

The Law School is committed to the academic success of all students. The Supportive Services Office provides students with assistance which will enable them to achieve that success.



ALUMNI ACTIVITIES and CONTINUING LEGAL EDUCATION

The Committee of Visitors and the Law Alumni Association: The Committee of Visitors consists of many of the Law School's most prominent graduates. The Committee advises the Dean on important strategic matters. The Law Alumni Association is an independent organization of the graduates of Wayne State University Law School. Governed by graduates who serve as the executive committee and officers, the organization provides service to the Law School and its graduates through social events, and support projects.

The Law School Fund

Although Wayne State University is a state-assisted school, the private contributions of alumni, law firms, corporations and other friends of the Law School provide the financial margin necessary to ensure outstanding teaching and faculty scholarship, excellent professional training, a modern and expanding library and student scholarships. The fund, growing steadily over the past several years, provides well over 10 percent of the Law School's annual resources. The alumni are asked each year to make a substantial donation to the Law School.

The Wayne Lawyer

All alumni and students receive *The Wayne Lawyer*, the official magazine of the Law School. Published twice each year, it provides current information about Law School activities, alumni accomplishments and profiles, a topical message from the Dean and articles of current interest written by members of the faculty.

Continuing Legal Education

The Institute of Continuing Legal Education is a nonprofit educational organization for the continuing education of the bench and bar. It was founded in 1959, under the sponsorship of Wayne State University Law School, the University of Michigan Law School and the State Bar of Michigan. The Institute, one of the most successful in the nation, serves the needs of Michigan lawyers primarily. It presents seminars and conferences dealing with numerous areas of substantive law as well as practice skills. The Institute has an extensive publishing program which includes authoritative texts on various specialty areas of the law and course handbooks.

FACULTY

Professors

Robert H. Abrams, David W. Adamany, Martin J. Adelman, Kingsley R. Browne, William H. Burnham, Stephen Calkins, Kenneth R. Callahan (Emeritus), Gennady M. Danilenko, John F. Dolan, Jane M. Friedman, Donald H. Gordon (Emeritus), Joseph D. Grano, Otto J. Hetzel (Emeritus), Maurice B. Kelman (Emeritus), LeRoy L. Lamborn (Emeritus), Geoffrey J. Lanning (Emeritus), Jessica D. Litman, Edward J. Littlejohn (Emeritus), Frederica K. Lombard, Joan Mahoney, Michael J. McIntyre, John E. Mogk, John W. Reed (Emeritus), James K. Robinson, Alan S. Schenk, Stephen H. Schulman (Emeritus), Robert A. Sedler, Boaz Siegel (Emeritus), Ralph Slovenko, Edward M. Wise

Associate Professors

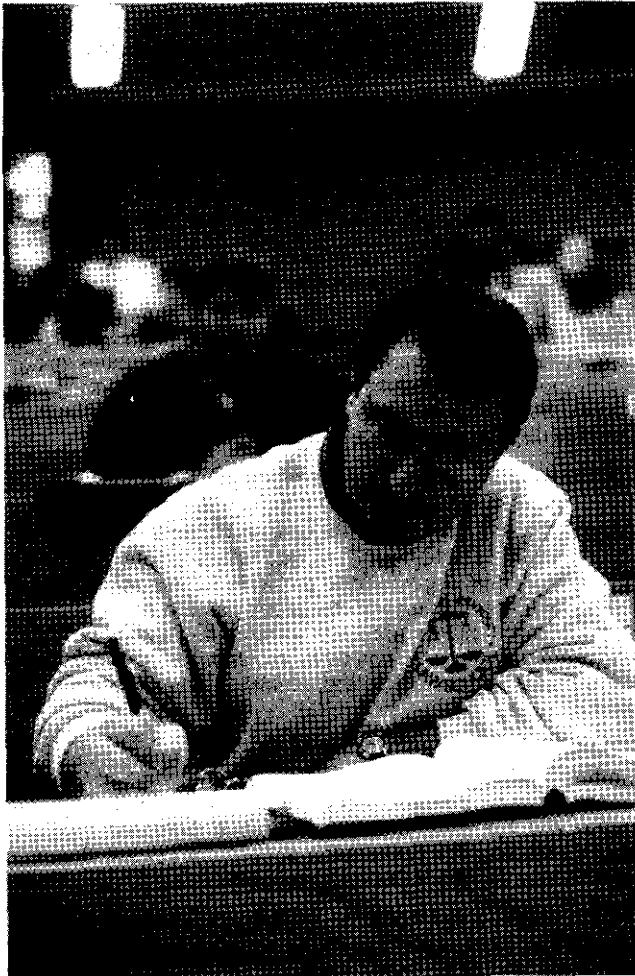
Laura Bartell, Dennis M. Devaney, Janet E. Findlater, John Friedl, Peter J. Henning, Lawrence C. Mann, Jonathan Weinberg, Vincent A. Wellman

Assistant Professors

Zanita E. Fenton, Eric Kades, Christopher J. Peters, Katherine White

Lecturers

Michael McFerren, Gloria K. Miller, Sonal H. Mithani, Susanna Peters, Diana V. Pratt



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Information about the Law School including e-mail addresses for faculty and staff may be accessed through the Internet: <http://www.law.wayne.edu>.

Letters should be addressed to the appropriate department and building at Wayne State University, Detroit, Michigan 48202. The telephone area code is 313.

LAW COURSES (LEX)

6100 Civil Procedure. Cr. 3 (6 req.)

Structure of the judicial system in the United States and the process of civil litigation from the commencement of an action through appeal. Subjects considered include jurisdiction, the relationship between state and federal courts, pleading, discovery and other pre-trial devices, trial and appellate review. (Y)

6200 Contracts. Cr. 3 (6 req.)

General principles of the law of contracts; definition of contract; illegality, mistake, frustration, impossibility; Statute of Frauds, interpretation, the parol evidence rule; performance and breach; rescission; repudiation and discharge. Remedies, including damages, specific performance, injunction and restitution. All topics considered from viewpoints of both common law and statute. (Y)

6300 Criminal Law. Cr. 3

General doctrines of criminal liability as they relate to the moral and social problems of crime; definitions of principal crimes and defenses to criminal prosecution, both common law and statutory; limitations on the use of criminal sanctions. (Y)

6400 Legal Writing and Research. Cr. 2 (4 req.)

Analysis of legal problems and the use of legal materials, through discussion, written assignments, and personal conferences. Preparation of an appellate brief and oral argument on a selected civil or criminal case before a court composed of faculty or members of the local bench and Bar. (Y)

6500 Property. Cr. 4

Basic course in real property, which will include selected materials from some of the following areas: historical introduction to real property; modern law of possessory estates, including non-freehold estates; landlord and tenant relationships; and the rights, duties and liabilities arising therefrom; concurrent estates; Statute of Uses; restraints upon the use of land; conveyancing and effects of the Recording Acts; land use planning and the current urban crisis. (Y)

6600 Torts. Cr. 4

Legal principles underlying wrongs not based on contract, arising from intentional or negligent conduct and including strict liability; the nature of particular wrongs, including injuries to the person, to reputation, to real or personal property, and to interference with business or family relations. (Y)

6700 Constitutional Law I. Cr. 3

Problems arising under the Constitution of the United States, with particular attention to the nature of judicial review in constitutional cases and to the role of the judiciary in umpiring the federal system. (Y)

6800 Professional Responsibility and the Legal Profession. Cr. 2

Conflicts of interest; the attorney's standard of care, fiduciary duty, the organization of bar associations, the attorney's duty to the court and the community; the attorney's responsibilities in trial, and in unilateral actions and negotiations. The duty of disclosure of adverse data, the development of group legal services, and of legal services to the poor, and the responsibility of the Bar in these areas. (Y)

7001 Accounting for Lawyers. Cr. 2

May not be taken for credit by those who took two or more undergraduate accounting courses or a graduate course in financial accounting. Basic concepts of bookkeeping and generally-accepted accounting principles; background to help read and interpret financial statements; auditor's role and accounting issues that arise in business planning, in litigation, and in managing financial investments.

7006 Administrative Law. Cr. 3-4

Functions and behavior of administrative agencies; constitutional and statutory constraints on agency operation. How the government formulates and enforces policy, administers public benefit programs, and awards licenses. (Y)

7011 Agency and Partnership. Cr. 2

The relationship of principal and agent; the rights, duties, powers, and fiduciary responsibilities associated with acting for the benefit of others. The legal principles associated with conducting business in the partnership form under the Uniform Partnership Act. (Y)

7016 Alternative Dispute Resolution. Cr. 2

Forms of non-trial dispute resolution: arbitration, mediation, and negotiation--their various permutations and substantive applications. Factors affecting choice between dispute resolution processes, differences in design and structure, relative costs, quality of participant performance, accountability for results, privacy of proceedings, role of legal norms and lawyers, due process considerations, availability of judicial review; tactics and strategies employed in arbitration, mediation and negotiation. (B)

7021 American Indian Law. Cr. 3

Prereq: LEX 6500; prereq. or coreq: 6700 recommended. Unique status of native Americans and tribes in the American legal system. Relationship between tribes and federal and state governments as outlined by the U.S. Constitution; federal treaties and statutes, and federal common law, as well as the unique rights and obligations of individual native Americans under federal law. (I)

7026 Antitrust. Cr. 2-4

Government control of trade practices and industrial market structures which inhibit the competitive process; monopoly, oligopoly, mergers, cartel practices, distribution arrangements, resale price control, franchising patent licensing, foreign commerce and price discrimination under the Sherman, Clayton, Federal Trade Commission, and Robinson-Patman Acts. (Y)

7031 Arbitration of Labor Disputes. Cr. 2

Study of labor arbitration, including grievance and interest arbitrations. Practice, policy questions and the impact of statutes. (Y)

7051 Bankruptcy and Creditors' Rights. Cr. 3-4

Prereq: JDC 7370 or LEX 7756. Problems arising when debtors are in financial difficulty, including the principal state remedies of unsecured creditors such as attachment, garnishment, and enforcement of judgments; alternatives to bankruptcy; and bankruptcy proceedings. When offered for three credits, course has substantially less on state creditor remedies. (Y)

7056 Bankruptcy Reorganization Clinic. Cr. 3

Prereq: LEX 7051; student in good standing. Offered on a Pass/No Credit basis only. Advanced study of bankruptcy law taught by bankruptcy practitioners in a law office, with simulated exercises involving a bankruptcy reorganization: drafting documents, negotiating terms, counselling clients, resolving disputes in traditional courtroom and alternate dispute resolution.

7061 Business Planning: A Transactional Approach. Cr. 4-8 (8 req.)

Prereq: LEX 7156 and 7816. Not open to students who have taken JDC 7280, LEX 7821, 7761, 7146, or 7151. Credit only on completion of two terms. Organizational problems for the closely-held and the public corporation; operational problems such as stock distributions, issuance of new securities, constructive dividend problems, and stock redemptions; corporate acquisitions, other reorganizations, contested take-overs, and liquidation and termination problems. (Y)

7081 Civil Procedure in Europe. Cr. 3

Civil procedure in several countries in western Europe and the regulations concerning international aspects such as international jurisdiction and the enforcement of judgments. European regulations such as the Brussels Convention of 1968, the Lugano Convention of 1988, and the Hague Convention of 1965. (I)

7086 Civil Rights Litigation. Cr. 2-3

Prereq: LEX 6700. Judicial remedies against governments and governmental officials for violation of rights secured by federal statutes and by U.S. and state constitutions. Procedural issues rather than substantive content considered, e.g., proper parties, necessary ele-

ments of a claim, limits on local government liability, immunities and defenses, remedies, attorney fees. (I)

7101 Commercial Law Clinic. Cr. 3

Prereq: LEX 7756. Offered on a Pass/No Credit basis only. Advanced study of commercial law in a law firm setting with simulated exercises in drafting and negotiating the terms of commercial documents, researching questions of law, counseling clients, and resolving a dispute without litigation. (Y)

7106 Commercial Law: Directed Research. Cr. 1 (Max. 4)

Prereq: consent of instructor; completion of first year requirements; good academic standing. Offered on Pass - No Credit basis only. No credit unless elected for at least two consecutive terms. Commercial law subjects studied under supervision of full-time faculty member; may be elected for up to four semesters. First two semesters: student reports on articles, cases, and books; last two semesters: writing project involving original research. Grading on pass - no credit basis. (T)

7111 Communication Law. Cr. 2-3

Government regulation of radio, over-the-air TV, cable, direct satellite broadcasting, and other electronic mass media technologies. Licensing; content control, respective roles of the regulator and the marketplace. (B)

7116 Comparative Law. Cr. 3

Methods and sources of common and civil law; background and structure of the principal civil codes; analysis and study of problems arising in the context of foreign legal systems. (Y)

7121 Conflict of Laws. Cr. 3

Principles, rules and methods thought to underlie the resolution of multi-state problems. Jurisdiction and enforcement of judgments of other states. (Y)

7126 Constitutional Law II. Cr. 4

Prereq: LEX 6700. Individual rights under the Constitution of the United States. Freedom of speech, religious freedom and equal protection. (Y)

7131 Consumption-Based Taxation. Cr. 2

Prereq: LEX 7816. Economic, administrative and legal aspects of consumption-based sales taxes with emphasis on value added tax as adopted abroad and proposed in the U.S. American Bar Association Model Statute for the U.S., rules for the harmonization of VAT in the European Community, the Japanese Consumption Tax, and the Canadian Goods and Services Tax. (I)

7136 Copyright Law. Cr. 3

Law of copyright and related doctrines protecting literary, musical and artistic works. Nature of rights and kinds of works protected, doctrine of fair use, pre-emption problems, and problems posed by new technologies. Emphasis on 1976 Copyright Act and its relation to issues such as home videotaping, photocopying and non-profit performance of protected works. (Y)

7141 Corporate Finance. Cr. 3

Prereq: LEX 7156 Economic and legal problems arising in connection with financing decisions of publicly-held corporations, including valuation of the enterprise and its securities, determination of securities structure and dividend policy, capital structure (including problems relating to debt), and acquisition strategies. Federal securities regulations and selected topics. (Y)

7146 Corporate Tax I. Cr. 3

No credit after LLM 8760, or LEX 7821 taken as part of an LLM program. Tax aspects of the choice of form of business operation (including S corporations), corporate formation, distributions of stock or property, redemptions, liquidations, and punitive taxes on accumulations of earnings, personal holding companies, and collapsible corporations. (Y)

7151 Corporate Tax II. Cr. 2

Prereq: LEX 7146. No credit after LLM 8720. In-depth study of taxable and non-taxable reorganizations, and the carryover of tax attributes. (Y)

7156 Corporations. Cr. 2-4

Relationships between owners and directors of a corporate enterprise; different types of stock ownership and the corresponding rights in profits and control; consolidation and merger; distinctive features of the closed corporation. (Y)

7161 Criminal Procedure I. Cr. 3

Prereq: LEX 6700 recommended. Constitutional requirements for arrests, searches, seizures, electronic surveillance, and interrogations. (Y)

7166 Criminal Procedure II. Cr. 3

Prereq: LEX 6700 recommended. Operation of the criminal justice system from the defendant's first appearance in the court through the trial, and to post-conviction remedies, including a study of bail, the preliminary hearing, the grand jury, *voir dire*, discovery, double jeopardy, joinder, and habeas corpus. (Y)

7201 Education Law. Cr. 3

Survey of education law with emphasis on public education. Historical development of education law in the U.S. as well as topics of current interest: tenure, academic freedom, school discipline, school financing, home-based schooling, state regulation of private schools, church-state relationships, and desegregation in public education. (I)

7206 Employee Benefits I. Cr. 2

Prereq: LEX 7816. Not open to students who have taken former LLM 8540. Internal Revenue Code and ERISA provisions relating to qualified deferred compensation. Emphasis on tax requirements for profit sharing, 401(k) and pension plans and rules governing participation, vesting, funding investments and distributions of qualified retirement plans. Collectively-bargained and multiemployer pension plans and rules for individual retirement accounts, simplified employee pension plans, 403(b) annuity plans, IRC Section 457 plans. (Y)

7211 Employee Benefits II. Cr. 2

Prereq: LEX 7816. Internal Revenue Code provisions relating to welfare benefit plans and other non-retirement employee benefits programs including health, life, disability and severance pay. Regulation of cafeteria plans and COBRA obligations, and applicable ERISA requirements and state law relating to welfare benefit plans considered. Non-qualified deferred compensation, tax treatment of compensation paid in the form of stock and stock options, and IRC Section 83 rules also reviewed. (Y)

7216 Employment Discrimination. Cr. 2-3

Federal constitutional and statutory guarantees of freedom from invidious discrimination in employment. Thirteenth and Fourteenth Amendments, Title VII of the Civil Rights Act of 1964, the Reconstruction Civil Rights Acts, 42 U.S.C. 1881, et seq., the Equal Pay Act of 1963, and the Age Discrimination in Employment Act of 1967. (Y)

7221 Employment Law. Cr. 2-3

Legal rights and responsibilities of employees (excluding rights provided by anti-discrimination laws and the NLRA); statutory and common-law limitations on the employer's right to discharge; protection of employee privacy and reputation; laws governing wages and hours, occupational safety, unemployment compensation, workers' compensation, and employee benefits. (Y)

7226 Entertainment Law. Cr. 3

Selected problems in representation of talented persons and the contracting and dissemination of their performances, services and creations. Basic contractual patterns for the motion picture and television industries; other problems of current interest. (Y)

7231 Environmental Law. Cr. 2-3

Environmental law in common-law, statutes, constitutional issues, administrative and international law. Coherent legal analysis of environmental problems and active legal remedies, rather than specialized instruction in pollution controls and the like. (Y)

7236 Equitable Remedies. Cr. 2-3

Not open to students who have taken JDC 8640 or former JDC 7790 or former JDC 8660. Survey of the equitable remedies available for the vindication of substantive rights, which includes injunctive and

restitutionary relief as well as the general treatment of equitable relief in contract, tort and criminal actions. (I)

7241 Estate, Gift and Inheritance Taxation. Cr. 2

Prereq: LEX 7816. Not open to students who have taken JDC 7991. Federal and state transfer taxes and income taxation of fiduciaries and beneficiaries. (Y)

7246 Estate and Gift Tax and Estate Planning Workshop. Cr. 4

Prereq: LEX 7816 and 7841. Not open to students who have completed LEX 7241 or 7251. Comprehensive course which also covers income taxation of estates and trusts. Equal coverage of tax and other issues in estate planning. U.S. and international estate and gift tax and comparative wealth tax systems. Drafting, role playing and problem-solving exercises in estate planning; lifetime and post mortem estate planning. Select problems in estate and trust administration. Students draft documents and legal client memoranda.

7251 Estate Planning. Cr. 2

Prereq: LEX 7816 and 7241. Not open to students who have taken JDC 9800. Special problems such as valuation, drafting. State and federal transfer taxation and federal income tax treatment of fiduciaries and beneficiaries. (B)

7256 European Property Law Perspectives. Cr. 3

Principles of property law which exist in the common law and some civil law countries, including focus upon issues of immediate importance for the European market. Anglo-American trust, security interests in movable and intangible property, mortgages of real estate, and other modern security devices such as leasing and factoring in the light of property law principles of the common civil law. (Y)

7261 European Union Law. Cr. 2-3

Institutional and substantive law of the European Union. Foundation of institutional law of the European communities and the European union, judicial protection under EC law. Basic legal aspects of the EU's single internal market and the EC economic policy. (Y)

7266 Evidence. Cr. 2-4 (4 req.)

General principles relating to the proof of questions of fact in civil and criminal trials, including competency, relevancy, and materiality of evidence; judicial notice, presumptions; burden of proof; competency of witnesses, rules relating to examination and cross-examination of witnesses; weight and sufficiency of evidence. (Y)

7301 Family Law. Cr. 2-3

Entry into marriage; legal treatment of couples in marital and non-marital relationships; divorce, including custody, alimony and property distribution, and the role of the attorney; procreation; illegitimacy; rights and responsibilities of children and parents with respect to each other and to the state; child abuse and neglect; and adoption. When offered for two credits, considerably less time is devoted to children's issues. (Y)

7306 Federal Courts and the Federal System. Cr. 2-3

Prereq: LEX 6700. Interrelationship of state and federal law in our legal system from the point of view of the federal courts and the Congress. Emphasis on the politics, history, and philosophy of federalism, rather than on procedures. (B)

7311 Federal Income Taxation of Partnerships. Cr. 2

All aspects of transfer of property to partnerships; problems in connection with operations, and distribution of property and transfers of interest in partnerships, comparison of partnerships with S corporations. (Y)

7316 Federal Tax Practice. Cr. 2

Procedure, both administrative and judicial, involved in the conduct of federal tax controversies. (B)

7321 Food and Drug Law. Cr. 2-3

The work of the Food and Drug Administration; food labeling and safety; prescription and over-the-counter drugs; enforcement powers, practice and procedure. Additional topics may be: FDA regulation of carcinogens, FDA evaluation of silicone breast implants, and FDA approval of AIDS and cancer drugs. (B)

7351 Hazardous Substances Workshop. Cr. 3

Prereq: LEX 7231. In-depth study of laws and regulatory systems governing disposal of hazardous materials and the remediation of sites contaminated by those materials. Focus on toxic torts, CERCLA (Superfund) and RCRA, risk assessment and risk management, toxicology, hydrogeology, quantitative assessment, and environmental engineering and site remediation. (B)

7356 Health Law. Cr. 2-3

Prereq: LEX 6600. Current issues in health care law: malpractice by physicians and hospitals; reforming the tort system for medical injuries; organizing health care delivery; access to health care; health care cost control; antitrust problems in health care industry. (Y)

7371 Immigration and Nationality Law. Cr. 2

Immigration, its history and development; entry into the United States, and alien status and adjustment to status; deportation and relief from deportation; exclusion and relief from exclusion; nationality and citizenship. (B)

7376 Income Taxation of Trusts and Estates. Cr. 2

Prereq: LEX 7816. Rules of federal income taxation applicable to trusts and estates. Interrelationship with estate and gift tax in selected situations. (Y)

7381 Insurance Law. Cr. 2

General principles, including indemnity, subrogation, reinsurance, insurable interest and classification of risks such as personal business and legal liability. Michigan insurance law and "no fault" legislation examined; contractual rights and liabilities of the insurer, insured, and third party beneficiaries. (I)

7386 International and Comparative Patent Law. Cr. 3

Prereq: LEX 7656 Introduction to the international patent system through study of the Paris Industrial Property Convention of 1883, the European Patent Convention, and the Agreement on Trade-related Aspects of the Intellectual Property Rights of the World Trade Organization; European, American and Japanese patent systems, patent issues relating to computer related inventions, biotechnology and non-textual infringement and remedies. (Y)

7401 International Aspects of U.S. Taxation. Cr. 2-3

Prereq: LEX 7816. United States taxation of non-resident aliens and foreign entities, foreign tax credit, determination of source of income, impact of tax treaties, earned income exclusion, tax effect of mode of operation and country of incorporation, and statutory and nonstatutory tax devices available for international operations. (B)

7404 International Business Transactions. Cr. 3

Practical legal problems connected with doing business abroad; counseling on foreign law. (Y)

7408 International Law. Cr. 3

Basic legal concepts applied by international tribunals and courts of the United States to the relations between independent nations. The nature and sources of international law; the use of treaties; international organizations; and practices respecting recognition, territory, nationality and jurisdiction. (Y)

7411 International Protection of Human Rights. Cr. 2-3

The main international and regional legal instruments and procedures for the protection of human rights. (I)

7421 Jewish Law. Cr. 2

Jewish non-ritual law (contract, property, commercial, etc.); concepts, structure, methodology underlying Jewish legal system. Introduction to the principal literature and institutions; development of the Biblical sources by Jewish courts, legislation, and legal writers to the present. (B)

7426 Jurisprudence. Cr. 2-3

Analysis of important legal notions such as law, sanction, rule, and sovereignty; relations between law and morals as seen particularly in the development of natural law and legal positivism and in the development of the notion of legal responsibility. (Y)

7431 Juvenile Courts: Theory, Law and Process. Cr. 3

Juvenile justice model as an independent juridical entity within the American justice system. General state of current juvenile law and legal principles which inform both civil and criminal aspects of the juvenile court system. Effects of specialized juvenile processes on the administration of justice for children.

7501 Labor Law. Cr. 2-4

Legislative, administrative and judicial regulation of labor relations. The scope of national labor legislation; the protection of the rights of self-organization and the designation of bargaining agents; the negotiation and administration of the collective agreement; the legality of strikes, picketing and boycotts; employer interference with concerted activities; and the relations between unions and their members. (Y)

7506 Labor Law in the Public Sector. Cr. 2

State (and some federal) regulation of labor relations in the public sector. Establishment of representative status, negotiation and administration of the collective agreement, strikes and impasse resolutions. (B)

7511 Land Use. Cr. 2-3

Prereq: LEX 6500. Allocation of land use in the urban environment by both private agreement and governmental order. Problems involved in the development and effectuation of community planning; goals by means of conservation, clearance, and renewal; zoning, variances and exceptions; housing code enforcement, subdivision control, eminent domain; relocation. (Y)

7516 Law of Elections and Political Organization. Cr. 2

Not open to students who have taken JDS 8070. Laws and constitutional regulations governing voting, the nomination and election of public officials, initiative and referendum process, campaign contributions, fair election practices, political parties. (B)

7521 Comparative Legal History. Cr. 3

Comparative study of the history of ancient and modern legal systems, with particular regard to relationships between law and the social and intellectual contexts in which it has developed. (B)

7526 Legal Process. Cr. 3

Functioning and interrelationships between the institutions and processes of the American legal system. Nature of legal reasoning, the uses and misuses of *stare decisis*, the proper allocation of responsibility between the judiciary and the legislature, techniques of statutory interpretation, the role of administrative agencies, and the planning-advising function of lawyers. (Y)

7531 The Legal Profession: An Introduction. Cr. 1

Prereq: completion of first year of law study. Offered on a Pass/No Credit basis only. Overview of the legal profession and the practice of law; current issues facing the legal profession; exploration with leading lawyers and judges of the breadth, variety and differentiation of legal careers. (Y)

7536 Legal Writing: Advanced. Cr. 3

Prereq: LEX 6400. May not be taken on pass/no credit basis. Research and analysis of complex legal problems involving legislative history and administrative regulations. Class discussion on advanced research, development of strategy, and organization and writing as a advocate. Students write both trial and appellate brief. (Y)

7541 Legislation. Cr. 3

The legislative process and its use as an instrument of change; legislative drafting revision, interpretation and implementation. The appropriations process; role of and control of lobbying; operation of the legislative process and its effect on policy formulation; conduct of Congressional investigations and effects of separation of powers doctrines. The lawyer and the development and implementation of legislation. (Y)

7581 Local Government Law. Cr. 2

Prereq: LEX 6500 Law as an instrument for governing urban areas. Distribution of decision-making power between private and public persons, between state and local governments and among various local governments. Local finance, decentralization, annexation and

municipal incorporation. Exploration of possible reform by means of metropolitan government or federal assistance. The lawyer's role in formulating governmental policy in major urban complexes. (Y)

7601 Mental Health Law. Cr. 3

Not open to students who have taken JDS 8310 or LEX 8286. Relationship between law and the mental health professions. Topics include: psychiatric evaluation, diagnosis and treatment; patient-psychiatrist (or -psychologist) relationship; civil commitment and other hospitalization issues; mental competence in contract, tort, and the capacity to manage one's own affairs. (Y)

7611 National Labor Relations Board: Practices and Procedures. Cr. 2

The representational and unfair labor practice areas. (Y)

7616 Negotiation. Cr. 2

Comprehensive examination of various legal principles that affect negotiation, such as rights assessment, custom and practice, rules of contract construction, concepts of condonation, proper and improper conditions, effective use of evidence in the negotiation process and legal strategies that affect outcome of negotiations. (Y)

7651 Patent Enforcement. Cr. 3

Prereq: LEX 7656. Unique aspects of patent litigation. Policy issues; practice considerations in enforcing patents. Issues in approaching a patent infringement suit (who can file; when and where to file). (Y)

7656 Patent Law. Cr. 3

Substantive patent and related trade secret law. Emphasis on nature of patent right; scope of coverage of patent system; issues of validity, infringements, inequitable conduct, patent-antitrust. Special issues relating to software, living organisms, and chemistry. Technical background not required. (Y)

7661 Payment Systems. Cr. 2

Prereq. or coreq: LEX 7756. Basic study of Articles 3 (Negotiable Instruments), 4 (Bank Deposits and Collections) and 5 (Letters of Credit) of the Uniform Commercial Code with some attention to the rules of wire transfers in proposed Article 4a and to documents of title in article 7. (Y)

7666 Pretrial Advocacy. Cr. 3

Adversary strategy and practice skills in the pretrial stages of litigation. Preparation of pleadings, interrogatories, requests for admission and document production requests. Students negotiate settlement of disputes, draft and argue motions, and take and defend depositions. (Y)

7671 Products Liability. Cr. 2

Problems arising out of defective products. Warranty actions, strict liability in tort, damages, problem of proof, other topics. (B)

7676 Public Finance Law. Cr. 2

Legal principles involved in public finance transactions: municipal borrowing and debt; state law considerations: sources of authority for borrowing and repayment; effect of *ultra vires* borrowing, of procedural defects, municipal debt limitations, and other factors relating to power to incur municipal debt; traditional financing techniques; federal tax and securities law considerations; default and municipal bankruptcy; municipal bond market. (Y)

7701 Real Estate Financing. Cr. 2-3

Methods of financing the acquisition and improvement of residential and commercial real estate through the use of private sources of funds. (Y)

7706 Real Estate Financing Workshop. Cr. 2

Prereq: LEX 7701. Detailed examination of roles of lawyers in modern commercial real estate development projects. Topics include construction financing, permanent financing, tax advantages, syndication, and equity-profitability studies. (I)

7707 Real Estate Investment Trusts. Cr. 2-3

Prereq: LEX 7816 and either LEX 7061 or LEX 7761, or consent of adviser. Law and practice of traditional real estate investment trusts (REITs) and their modern counterpart, umbrella partnership REITs

(UPREITs). Relevant provisions of the Federal Internal Revenue Code and Regulations and the Federal Securities Law and Regulations. UPREIT formation and initial public offering, shelf registration, property acquisition and a REIT merger. (Y)

7711 Russian Law. Cr. 3

Basic elements of the Russian legal system and its distinction from U.S. legal systems. Fundamental structure of the law and its development through the 1993 convention, judicial reform, human rights, civil law reform and changes in civil procedure and private international law. Legal problems of doing business in Russia. (I)

7751 Sales Law: Advanced. Cr. 2-3

Advanced study in sales areas beyond first-year contracts course. (Y)

7756 Secured Transactions. Cr. 3

Basic study of Article 9 of the Uniform Commercial Code with particular attention to the law governing the creation and perfection of security interests in personal property and the relative priorities of interested parties; also attention to some of the following: goods-oriented remedies in Article 2, financing leases in Article 2a, bulk sales, effects of the Bankruptcy Code on secured transactions, and documents of title Article 7. (Y)

7761 Securities Regulation. Cr. 2

Prereq: LEX 7156. Not open to students who have taken LEX 7061. Analysis of current problems in federal and state regulation of transactions in securities. (Y)

7766 Sports and the Law. Cr. 2

Survey of legal issues presented by sports in America. Application of basic principles of antitrust and labor law, constitutional law, administrative law, contract law and tort law to sports. Regulation of professional sports labor markets, regulation of agent representation, sports franchises, leagues and the powers of commissioner's offices, and the regulation of intercollegiate sports. (Y)

7771 State and Local Taxes. Cr. 2-4 (3 or 4 req.)

The basic tax laws of state and local government, particularly property and excise taxes with an emphasis on the Michigan single business, sales and use, income, and property taxes. (Y)

7801 Tax Aspects of Real Estate Transactions. Cr. 2

Prereq: LEX 7816. The operation of the federal income tax as applied to real estate transactions. An intensive examination of selected areas, including the formation and liquidation of partnerships and corporations which own real estate, as well as leases, mortgages and sales. (Y)

7806 Tax-Exempt Organizations. Cr. 2

Prereq: JDC 8810. Tax problems arising from activities of non-profit associations of a type usually subject to taxation. (B)

7811 Tax Penalties and Prosecutions. Cr. 2

Prereq: LEX 7816. Federal, civil and criminal remedies for fraudulent tax evasion. (B)

7816 Taxation. Cr. 1-4

Interrelation between income tax policy and basic governmental and social institutions. Introduction to law of federal income taxation; the taxation of individuals. Basic application of these taxes; problems involved in transactions and situations which confront the lawyer in general practice; analysis and use of materials which permit their solution. Underlying problems of policy which have led to the tax law of today and which may be expected to require change in the tax law of tomorrow. (Y)

7821 Taxation of Corporations. Cr. 2-3

Prereq: LEX 7816. Not open to students who have taken LEX 7061. Federal income taxation of corporations and their shareholders; problems relating to the formation, operation, reorganization, and liquidation of the corporation. Problems between shareholders and their closely-held corporation. Analysis and resolution of corporate tax issues. (B)

7826 Teaching Law in High School. Cr. 3

Prereq: second- or third-year student. Students teach 20-25 sessions to high school students and attend weekly seminar on teaching methods. Preparation of model lessons, lesson plans. Field supervision. (Y)

7831 Trademarks and Unfair Competition. Cr. 2-3

Federal trademark statute, 15 U.S.C. section 1051 et. seq., state statutory and common law unfair competition, and the federal law of unfair competition and false advertising under 15 U.S.C. sect. 1125 (a). (I)

7836 Trial Advocacy. Cr. 3

Prereq: LEX 7266 or consent of instructor. Basic trial techniques taught through student performances of roleplay exercises followed by critique. Mastering major trial skills in isolation: direct and cross examination, introduction of exhibits, impeachment, expert witnesses, opening and closing statements. Application of skills in simulated full criminal or civil jury trial. (Y)

7841 Trusts and Decedents' Estates. Cr. 4

Intestate succession, wills and trusts, requisite elements of wills and express trusts, and procedural requirements for their creation; administration of decedents' estates and trusts; special rules relating to charitable and spendthrift trusts; trust forms as equitable remedial devices under resulting and constructive trust rules. (Y)

7881 Unemployment Compensation Law. Cr. 2

Unemployment compensation law and practice, based on the Michigan statute, including federal relationships and a comparison with other state statutes. (Y)

7886 Union Democracy. Cr. 2

Prereq: LEX 7501 or consent of instructor. Legal aspects of relationship between unions and their members, as developed primarily by the Labor Management Reporting and Disclosure Act of 1959 (Landrum-Griffin Act) including right to representation, collective bargaining process and administration of collective bargaining agreement.(I)

7921 Wage and Hour Laws. Cr. 2

State and federal wage and hour laws, including administration of the statutes and their interrelationship. (Y)

7931 Water Law. Cr. 2-3

Categories of water bodies and public and private rights therein under the riparian and the prior appropriation systems. Consumptive and non-consumptive uses, management, and protection of the resource. Intergovernmental relations with respect to water resource allocation and management. (Y)

7941 White Collar Crime. Cr. 3

Substantive and investigative issues related to federal prosecution of business crimes. Balance between government powers to investigate white collar crime and the rights of corporate and individual investigatory targets in connection with criminal prosecutions of federal economic crimes. Problems related to parallel civil enforcement actions involving the same underlying conduct.

7951 Workers' Compensation Law. Cr. 2-4 (4 req.)

Study of workers' compensation law and practice, based on the Michigan statute, including a comparison with other state statutes. (Y)

7990 Directed Study. Cr. 1-2

Prereq: prior written consent of professor directing the study and of the Assistant Dean. Subject matter and procedure are to be arranged prior to registration. (T)

8001 Antitrust and Trade Regulation: Current Issues. Cr. 3

Prereq: LEX 7026 or consent of instructor. Current antitrust and trade regulation issues, such as distribution, exemptions, horizontal restraints, legislative reform, merger policy, pricing, and transnational enforcement. Clayton, Sherman, and Federal Trade Commission Acts; possibly state and foreign statutes and procedures. (Y)

8021 Bankruptcy Reorganization. Cr. 3

Prereq: LEX 7051. Not open to students who have taken JDC 8650 or JDC 9760. Emphasis on Chapter 11 reorganizations of insolvent

businesses. Non-bankruptcy alternatives explored. Draft of plan of reorganization or other practical application of subjects covered will be required. (Y)

8026 Bioethics and the Law. Cr. 3

Issues arising from recent advances in biomedical technology: pre-natal diagnosis of genetic disorders, problems of prolonging life, psychotropic drugs to control human behavior. (Y)

8031 Commercial Law. Cr. 3

Prereq: LEX 7756. Advanced study of an area of commercial law; assigned readings. Final grade based on paper and seminar discussion leadership, on topic selected by student from instructor's list. (Y)

8036 Contemporary Legal Theory. Cr. 3

Prereq: LEX 7426 or consent of instructor. Recent contributions to jurisprudence and philosophy of law concerning issues such as: nature of law and legal systems; relationship between law and morality; civil disobedience and our obligation to obey the law. (I)

8038 Corporate Law: Current Problems. Cr. 3

Prereq: LEX 7156. Preparation of paper and an oral presentation, in area of corporate law. Subject is determined in consultation with instructor. Topic may include: 1997 Supreme Court decision on insider trading, recent Model Act initiatives on shareholder agreements in close corporations, protection of directors from liability, new rules on indemnification. (I)

8041 Criminal and Quasi-Criminal Law and Procedure. Cr. 3

Substantive and procedural issues in criminal prosecutions, civil commitments, deportations, forfeitures, expulsions, and license deprivations. (Y)

8046 Criminal Procedure: Current Problems. Cr. 3

Prereq: LEX 7161; LEX 7166 recommended. Students write papers on areas where U.S. Supreme Court doctrine is confusing, contradictory or incoherent. Description of existing doctrine and proposed solutions for improvement. (I)

8081 Evidence Law: Emerging Problems. Cr. 3

Prereq: LEX 7266. Review of evidence law reform and examination of Federal and Michigan rules of evidence to determine problems in the operation and effect of the rules which would warrant proposing amendments. Students will identify one or more such rules for amendment, propose amendments, give oral presentations of them and discuss amendment proposals with other students. (Y)

8101 Family Violence. Cr. 3

Analysis of the utilization of the legal system to address issues of abuse within the family. Topics include: the response of the criminal justice system to various forms of family violence, such as marital rape, spouse abuse, and child abuse; use of tort and injunctive remedies; examination of new and proposed legislation relevant to these issues. (B)

8181 International and Comparative Criminal Law. Cr. 3

Criminal law and procedure of countries outside the Anglo-American tradition; the intellectual and sociological background of different systems of criminal law. Problems of international criminal law (jurisdiction over crime, extradition, the prosecution of war criminals, proposals for an international criminal court). (B)

8241 Labor Law. Cr. 3

Prereq: LEX 7501 or consent of instructor. Theoretical issues of labor relations, with emphasis on critiques of the current situation, comparative perspectives, and labor history. (Y)

8246 Law and Economics. Cr. 3

No specific background in economics required. Recent developments in the application of legal analysis to legal doctrine. (I)

8251 Law, Biology and Behavior. Cr. 3

Contribution of psychology to policies regulating human behavior. Overview of evolutionary theory and evidence that the human mind has been shaped by natural selection to become the primary generator of human social practices. Relevance of evolutionary insights to

policies of sexual equality, infanticide and child abuse; spousal abuse; urban violence; racism and xenophobia. (Y)

8256 Law in Cyberspace. Cr. 3

Prereq: LEX 7136. Application of current law to the Internet and proposals for new or revised laws to regulate development of global information infrastructures. Topics include: defamation, copyright, wire fraud, criminal threats to Internet activities, and problems asserting national laws in medium without national boundaries. Students will use the Law Library's computer system and not need their own computers. (Y)

8261 (LEX 8080) Law, Race and Racism in American History. Cr. 3

Interdisciplinary seminar co-taught by law and sociology, focusing on role of law in shaping the black experience and relationship between race and law in United States from colonial times to 1960s civil rights movement. Topics include: law and American slavery; legal developments during antebellum and Jim Crow eras; law, racial segregation and discrimination in later periods. (B)

8271 National Labor Relations Act: Current Problems. Cr. 3

Prereq: LEX 7501. Current issues concerning the National Labor Relations Act which present close and/or controversial issues of law or findings which are difficult to reconcile with provisions of the Act. Extensive papers and oral presentations by students. (Y)

8281 Patent Law. Cr. 3

Prereq: LEX 7656. Topics vary from year to year; may include: fraud on the Patent Office, patent-antitrust, secret prior art under the 1984 patent law amendments, role of prosecution history estoppel, and the determination of equivalency. (Y)

8286 Psychiatry and the Law. Cr. 3

Insights of psychiatry relevant to the law and the practicing lawyer. Dynamics of behavior; theory and technique of interviewing; forensic psychiatry issues: mental hospitalization; personal injury, contractual and testamentary capacity, criminal law and family law. Patients are presented and discussed. (Y)

8341 Sex, Procreation and Reproductive Technology. Cr. 3

Analysis of rights specific to procreative freedoms, current and potential impacts of technological advances on traditional legal applications of property and succession, contract, best interests standards and custody, and privacy. Emerging issues such as eugenics, sterilization, cryogenics, and artificial insemination. (B)

8361 Tax Policy: Current Issues. Cr. 3

Prereq: LEX 7816. Fundamental issues in designing a personal tax system (income based or consumption based); emphasis on current tax reform proposals. Topics include: flat-tax plans, broad-based income tax reform; other issues may include tax aspects of health care reform and environmental protection. Some topics selected by students in conjunction with instructor. Corporate tax planning and estate tax issues will not be addressed. (B)

8366 Transnational Environmental Problems. Cr. 3

Prereq: LEX 7231 or 7408. Response of the legal system to transnational environmental hazards caused by air and water pollution and the use of nuclear power. (I)

8371 Transnational Litigation. Cr. 3

Prereq: LEX 7116 or 7404 or 7408 recommended. Procedural aspects of transnational litigation; relationship of international and federal jurisdictional requirements; Foreign Sovereign Immunities Act; the Act of States Doctrine; the Political Question Doctrine; service of process, procurement of evidence, and execution of judgments abroad. (I)

8386 (HIS 8050) United States Constitutional and Legal History. Cr. 3

Graduate reading and research seminar in the history of American law. In first half, participants read extensively in theoretical and substantive literatures. Thereafter, group pursues individual research topics in collaboration. Students produce major research paper focused mainly on primary materials; presentation to the group included. (B)

8401 Urban Housing and Community Development. Cr. 3

Legal, social, and economic aspects of urban housing and community development, including local, state and national programs and policies. (Y)

8406 Victims and the Law. Cr. 3

Analysis of various responses of the legal system to the physical, financial and psychological needs of victims of crime, including: examination of restitution by the offender; compensation by the state; rights of victims to protection and privacy, and to information from, input into, and decent treatment by the criminal justice system; and the special rights of victims of sexual assault, spouse abuse, and child abuse. (Y)

8501 Government Agency Internship. Cr. 2-3

Prereq: second or third year standing; consent of Director of Clinical Education; placements for some government agencies may require substantive law prerequisites. Students assigned to staff attorneys in various city, county, state, and federal administrative agencies to perform extensive research and writing and participate in administrative proceedings. Work 8-15 hours per week during fall and winter terms, 16-30 hours per week during summer term, and attend a contemporaneous class in administrative process. Credits determined by the Director of Clinical Education. (T)

8502 Judicial Internship. Cr. 2-3

Prereq: consent of Director of Clinical Education; second or third year standing. Each student assigned to a participating judge to assist in closely supervised research and writing and acquire familiarity with the operation of the court. Work 8-15 hours per week during fall and winter terms, 16-30 hours per week during summer term, and attend a contemporaneous class in the judicial process. Credits determined by the Director of Clinical Education. (T)

8503 Nonprofit Organization Internship. Cr. 2-3

Prereq: second or third year standing; consent of Director of Clinical Education Each student assigned to a staff attorney in the legal department of a nonprofit organization or a legal services agency. Work 8-15 hours per week in fall and winter terms, 16-30 hours per week in summer term, and attend a contemporaneous class in legal services organization. Credits determined by the Director of Clinical Education. (T)

8504 Prosecutor Internship. Cr. 2-3

Prereq: second or third year standing; consent of the Director of Clinical Education. Each student assigned to an attorney on the staff of a state or federal prosecutor to perform extensive research and writing and participate in actual cases. Work 8-15 hours per week during fall and winter terms, 16-30 hours per week during summer term, and attend contemporaneous class in the prosecutorial process. Credits determined by the Director of Clinical Education. (T)

8601 Criminal Appellate Practice. Cr. 3

Prereq: LEX 7161, 7166, or 7266 recommended. Clinical legal writing experience. Students prepare briefs and other pleadings for indigent clients with pending felony appeals in cooperation with the Michigan State Appellate Defender Office. Students meet with instructor in individual and class sessions to discuss writing, research, and the appellate and correctional processes. Students have client contact and participate in simulated court environment. (Y)

8621 Free Legal Aid Clinic. Cr. 1 (2 req.)

Prereq: completion of all six first-year courses; cumulative h.p.a. of 2.0 or above. Students work in a Free Legal Aid Clinic representing indigent clients in need of legal services. Under supervision of a practicing attorney, students act as counsel from the interviewing stage through any necessary court proceedings. (T)

8701 Law Review. Cr. 1 (2 req.)

Open only to Law Review members. (Y)

8711 Moot Court. Cr. 1 (2 req.)

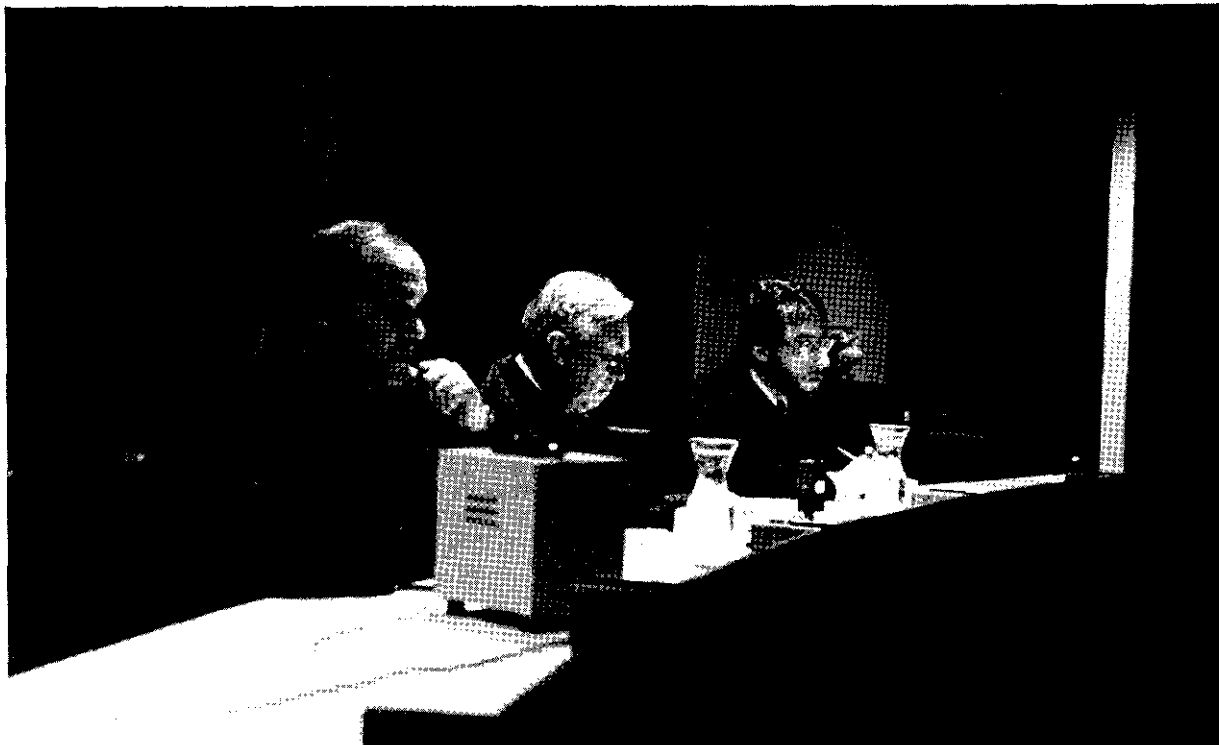
Open only to members of the Moot Court Board. Members conduct, under general faculty supervision, the program in the preparation of briefs and the hearings on oral arguments. (Y)

8721 Student Trial Advocacy Program. Cr. 1 (2 req.)

Open only to members. Members participate in skills training; intra-school, regional, and national trial advocacy competitions. (Y)

8999 Master's Essay Direction. Cr. 1-2

Prereq: consent of adviser. (T)



College of Liberal Arts

Foreword

The College of Liberal Arts offers eighteen master's and eight doctoral degrees in the humanities and the social sciences. These programs are rigorous and yet flexible enough for students to pursue a variety of interdisciplinary studies. Faculty are selected for their excellence in teaching and research. More than two hundred faculty members are approved by the Graduate School for graduate level instruction. Graduate students in the College have ample opportunity for personal contact with faculty and are encouraged to conduct research with them. The College is committed to the diversity of students and faculty, so that learning in any degree program becomes a humanistic and social experience.

Master's Degrees and Majors

MASTER OF ARTS with majors in

<i>Anthropology</i>	<i>Italian</i>
<i>Art History</i>	<i>Linguistics¹</i>
<i>Classics</i>	<i>Near Eastern</i>
<i>Comparative Literature</i>	<i>Languages</i>
<i>Economics</i>	<i>Philosophy</i>
<i>English</i>	<i>Political Science</i>
<i>French</i>	<i>Sociology</i>
<i>German</i>	<i>Spanish</i>
<i>History</i>	

MASTER OF PUBLIC ADMINISTRATION with majors in

<i>Criminal Justice</i>	<i>Public Administration</i>
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MASTER OF SCIENCE with major in Criminal Justice¹

Doctoral Degrees and Majors

DOCTOR OF PHILOSOPHY with majors in

<i>Anthropology</i>	<i>Modern Languages</i>
<i>Economics</i>	<i>Philosophy</i>
<i>English</i>	<i>Political Science</i>
<i>History</i>	<i>Sociology</i>

ACADEMIC REGULATIONS

ADMISSION REQUIREMENTS

Admission to any graduate degree program is contingent upon meeting the admission requirements of the Graduate School. For further information on these requirements, see page 16.

Preference is given to those students who have achieved superior undergraduate scholastic records and who evidence superior abilities.

All prerequisite credits must be earned prior to or concurrent with the first graduate credits. If undergraduate preparation for the major field is considered deficient, additional work may be required at the undergraduate level. Many programs have additional individual admission requirements. Students should consult the subsequent departmental sections in this bulletin for specific requirements in each field of study.

Graduate Record Examinations

The Graduate Record Examination (GRE) is used to assist advisers in evaluating educational preparation and to serve as a basis for planning future study. There is no uniform policy concerning GREs; some departments require GRE scores from all applicants for admission, while others require scores only from students in specified classifications. Students should consult the department in which they wish to major to determine which examinations must be taken.

Students required to take these examinations must apply at the Testing and Evaluation Office, 698 Student Center, either prior to or at the time of admission. Students who previously have taken the examination may have transcripts of these scores submitted. After the initial registration, no subsequent enrollment will be permitted nor will candidacy be authorized until examination requirements have been fulfilled.

'AGRADE' Accelerated Graduate Enrollment

The College of Liberal Arts has established an accelerated combined undergraduate and graduate program ('AGRADE') whereby qualified seniors in the College of Liberal Arts may enroll simultaneously in some undergraduate and graduate programs of the College. A maximum of fifteen credits may be applied towards both undergraduate and graduate degrees in a student's major field if the major department is an 'AGRADE' participant. (Students should contact the chairperson of their major department to ascertain its 'AGRADE' status.) Those who elect the 'AGRADE' program may expect to complete the Bachelor's and Master's degrees in five years of full-time study.

Eligibility: 'AGRADE' applicants must have an overall h.p.a. which places them in the top twentieth percentile of the senior class (*cum laude*). Applicants are also expected to have performed at a superior level in their major, as determined by the major department and reflected in an h.p.a. in the major of at least 3.6 at the time of application.

Application: A student seeking 'AGRADE' status should present to the Graduate Admissions Committee of his/her major department all of the materials which that department requires for normal admission, EXCEPT for the Graduate Record Examination (GRE) required by some departments. For departments in which the GRE is required, it is expected that this examination will be taken at the normal time and scores forwarded to the major department. Specific departmental admission requirements can be found in the University Graduate Bulletin or in the Graduate Office of the College of Liberal Arts (577-2690).

The earliest date by which a student may apply for the 'AGRADE' program is during the semester in which he/she completes ninety credits toward the undergraduate degree.

'AGRADE Credits': Students may elect a minimum of three and a maximum of fifteen 'AGRADE' credits. These will be used to complete the baccalaureate degree as well as to serve as the beginning of graduate study. Upon formal admission to a master's program,

¹ Designation of the field is part of the degree title.

'AGRADE' credits are transferred as if they were graduate credits transferred from a graduate program at another university. The remaining graduate credits required for the master's degree will be earned in the conventional manner following formal admission to the graduate program.

For more details about the 'AGRADE' program, contact the chairperson of the department in which 'AGRADE' enrollment is sought, or the Graduate Office of the College of Liberal Arts (577-2690).

DEGREE REQUIREMENTS

Graduate degrees are conferred not merely upon the completion of a prescribed number of courses nor necessarily after a given period of residence, but rather in recognition of each candidate's outstanding ability and high attainments as evidenced in all course work, research, scholarly writing, examinations and personal fitness for a chosen profession. All course work must be completed in accordance with the academic procedures of the Graduate School (see pages 16-30) and College of Liberal Arts regulations. In addition to the general Graduate School requirements for degrees and to the information provided below, other requirements are specified by the individual graduate departments. Students should consult the programs and requirements of the departments in which they plan to major.

Candidacy

Candidacy is an advanced status recommended by student advisers and authorized by the Graduate School or Liberal Arts Graduate Office upon evidence of superior scholarship, appropriate personal qualities and promise of professional competence. Students should note that admission as an applicant does not assure acceptance as a candidate for a degree, and that candidacy is a necessary but not sufficient requirement for graduation.

To be eligible for candidacy, students must file officially approved *Plans of Work*. The *Plan* should provide for effective concentration in a major field, with proper supporting courses in related fields. Ph.D. applicants should file their *Plan* with the Graduate School; master's applicants with the graduate officer of the College of Liberal Arts. In preparing a *Plan*, students should evaluate with care their personal and professional objectives as well as all degree and departmental requirements. Normally, a student enrolled in a master's degree program is expected to file a *Plan of Work* by the time twelve graduate credits or their equivalent have been earned.

Applicants for candidacy should petition their adviser to advance their rank to 'candidate.' In most departments candidacy must be authorized by the time twelve graduate credits have been earned or subsequent registration is denied.

It is recommended that an approved *Plan* be filed by applicants for the Ph.D. degree when approximately forty credits beyond the baccalaureate degree have been earned. *In addition to filing the Plan, students must have satisfied any foreign language requirements and must have passed the Final Qualifying Examination (written and oral) and must have submitted and received the Graduate Dean's approval on the Dissertation Outline before the doctoral committee will recommend candidacy.*

Commencement

Information concerning commencement announcements, caps and gowns, invitations, tickets, time and place, assembling and other relevant items will be mailed to graduates by the Alumni Office prior to the event. Candidates for advanced degrees are requested and expected to attend the commencement at which the University confers upon them the honor of the degree earned.

Master's Degree Requirements

In most master's degree programs, the minimum requirement for the degree is thirty-two credits under either Plan A or Plan B or Plan C as cited below. At least twenty-four credits must be taken in residence. At least six credits of work in the major field, in addition to the essay

or thesis, must be in courses open only to graduate students (courses numbered 7000 and above).

Plan A requires twenty-four credits of course work plus an eight credit thesis.

Plan B requires twenty-nine credits of course work plus a three credit essay.

Plan C requires thirty-two credits of course work. Essay or thesis not required. Authorized only in selected areas. Most departments require a final comprehensive examination. Students should consult adviser.

These requirements vary slightly by departments; see listings under the individual departments for exact information.

DOCTORAL DEGREE REQUIREMENTS

Preliminary Qualifying Examination

Responsibility for preliminary qualifying examinations is vested in the graduate faculty of each department; specifically, in its committee on doctoral study. Accordingly, committees may require this examination of all candidates or of any candidate prior to the final qualifying examination.

Final Qualifying Examination for Candidacy

The final qualifying examination is required of all applicants. Applicants may request their doctoral committee to authorize the final qualifying examination after an approved *Plan of Work* has been filed with the Graduate School. The examination will consist of both written and oral portions. When this examination has been passed, and when the Dean of the Graduate School has approved the Dissertation Outline, applicants will be advanced to the status of 'doctoral candidate.'

The written qualifying examination will cover applicant's major and minor areas and may include such other related matters as the doctoral examining committee may prescribe. Within thirty days after the written examination has been passed, the oral qualifying examination will be conducted by the doctoral examining committee in the presence of the chairperson of the departmental committee on doctoral study or his/her designee and a graduate examiner approved by the Graduate School. This examination will relate to the subject matter of the written examination, the applicant's major and minor areas and other pertinent matters.

If an examining committee does NOT certify that the applicant has passed either the written or oral examinations, it must make specific recommendations with reference to admitting the applicant to a second examination and specify any additional work that should be completed prior to such an examination. If a second examination is held, it must be scheduled within one calendar year and shall be considered final.

Student doctoral committees, including one member from outside of the student's department, are selected at the time the doctoral *Plan of Work* is prepared. For the Oral Qualifying Examination, a Graduate Examiner outside of the student's department is appointed to the committee by the Graduate School. The Graduate Examiner files a brief report to the Graduate School detailing the conduct of the Oral Qualifying Examination. The Graduate Examiner also must be present at the final dissertation defense.

Essays, Theses, and Dissertations

There is no prescribed form for the Master's essay. Essay guidelines, indicating standard style manuals for each department and title-page samples, are available in the Liberal Arts Graduate Office, 2215 Faculty/Administration Building.

Master's degree candidates under the essay plan register for the course numbered 7999, Master's Essay Direction, in the department of their major; a total of three credits must be elected.

The original copy of the essay should be submitted to the Liberal Arts Graduate Office after it is approved and signed by the adviser. This copy will be returned to the department within a reasonable time after the student has graduated.

The thesis or dissertation *must be an original work, either in or definitely related to the student's major area of specialization.* If proper standards of quality, objectivity, originality, and independence are maintained, candidates may use data which they have derived from their University research. Neither the results of the research nor the publication of findings can be restricted by any non-university agency nor can they be published prior to acceptance by the Graduate School, unless prior approval of such publication has been secured from both the adviser and the Graduate School. Advisers have primary responsibility for approval of the essay or thesis, but every member of a doctoral committee must read, approve and sign the dissertation.

Students may not begin work on a manuscript until they have submitted an approved *Plan of Work* and outline form. They may then register for the thesis or dissertation and pay regular fees in the same manner as for all other course work.

Master's candidates under the thesis plan register for the course numbered 8999 in the department of their major. This course is entitled *Master's Thesis Research and Direction* and must be elected for a total of eight credits. Ph.D. candidates register for thirty credits in the course numbered 9999 in their major field, *Doctoral Dissertation Research and Direction*. All credit used toward meeting dissertation requirements must be earned in this course.

The publication and dissemination of research findings will not be restricted by the University after the manuscript has been received and accepted by the Graduate Office.

Outline and Record Form

Before students begin working on theses or dissertations, they must file outlines and record forms. Master's candidates must prepare three copies which, after receiving departmental approval, will be forwarded to the Liberal Arts Graduate Office. Doctoral candidates must prepare four copies which, after receiving departmental approval, will be forwarded to the Graduate School.

Financial Aid

For general sources of graduate financial aid, see the section on Graduate Financial Assistance, beginning on page 30. Specific information may be found in various departmental sections of the College of Liberal Arts, below.

COLLEGE DIRECTORY

ADMINISTRATION

DEAN	2226 Faculty/Admin. Bldg.; 577-2514
ASSOCIATE DEAN:	
Li Way Lee	2226 Faculty/Admin. Bldg.; 577-2517
ASSOCIATE DEAN:	
Donald Spinelli	2226 Faculty/Admin. Bldg.; 577-8895

SERVICE AREAS

Bulletin and Scheduling	2226 Faculty/Admin. Bldg.; 577-2311
Liberal Arts Graduate Office	2226 Faculty/Admin. Bldg.; 577-2690
Major/Curriculum Office	2226 Faculty/Admin. Bldg.; 577-3117
Personnel Records	2226 Faculty/Admin. Bldg.; 577-4876

DEPARTMENTAL and PROGRAM OFFICES

Africana Studies . . . . .	.51 W. Warren, Rm. 4011; 577-2321
African American Film Institute . . . . .	.51 W. Warren, Rm. 2228; 577-2321
American Studies . . . . .	.411 State Hall; 577-3067
Anthropology . . . . .	.137 Manoogian; 577-2935
Canadian Studies . . . . .	.227 State Hall; 577-0541
Classics, Greek, and Latin . . . . .	.431 Manoogian; 577-3032
Comparative Literature . . . . .	.51 W. Warren, Rm. 1200; 577-7962
Composition . . . . .	.51 W. Warren, Rm. 1200; 577-2450
Criminal Justice	2305 Faculty/Admin. Bldg.; 577-2705
Economics	2074 Faculty/Admin. Bldg.; 577-3345
English . . . . .	.51 W. Warren, Rm. 120; 577-2450
English Language Lab . . . . .	.351 Manoogian; 577-2729
Film Studies . . . . .	.51 W. Warren, 577-7710
Foreign Language Lab . . . . .	.385 Manoogian; 577-3022
German and Slavic Languages . . . . .	.443 Manoogian; 577-3024
History . . . . .	.3094 Faculty/Admin. Bldg.; 577-2525
Humanities . . . . .	.51 W. Warren; 577-3035
International Studies . . . . .	.351 Manoogian; 577-8072
Junior Year in Germany . . . . .	.473 Manoogian; 577-4605
Legal Studies . . . . .	.171 Law School Annex; 577-3947
Linguistics . . . . .	.51 W. Warren; 577-8642
Near East and Asian Studies . . . . .	.437 Manoogian; 577-3015
Parents and Children Together (PACT) . . . . .	.87 E. Ferry; 577-3519
Philosophy . . . . .	.51 W. Warren, Rm. 3001; 577-2474
Political Science	2040 Faculty/Admin. Bldg.; 577-2630
Public Affairs	2049 Faculty/Admin. Bldg.; 577-2668
Romance Languages & Literatures . . . . .	.487 Manoogian; 577-3002
Sociology	2228 Faculty/Admin. Bldg.; 577-2930
Women's Studies . . . . .	.51 W. Warren; 577-6331

Mailing address for all offices:

(Department Name), College of Liberal Arts,
Wayne State University,
656 W. Kirby,
Detroit, Michigan 48202

ANTHROPOLOGY

Office: 137 Manoogian Hall; 577-2935
Chairperson: Marietta Baba

Professors

Barbara C. Aswad, Marietta L. Baba, John Friedl, Bernice A. Kaplan,
Guerin C. Montilus, Bernard Ortiz de Montellano, Mark L. Weiss

Associate Professors

Allan W. Batteau, Gordon L. Grosscup (Emeritus) Andrea Sankar, Frances
Trix

Assistant Professors

Tamara Bray, Lisa Gurr, Linda Hogle

Adjunct Professors

Morris Goodman, Gabriel W. Lasker (Emeritus), Eugene Perrin

Adjunct Associate Professors

Elizabeth Briody, Dorothy Nelson

Graduate Degrees

MASTER OF ARTS with a major in Anthropology

MASTER OF ARTS with a major in Anthropology and a concentration in applied medical anthropology

DOCTOR OF PHILOSOPHY with a major in Anthropology and specializations in cultural anthropology, archaeology, ethnohistory, medical anthropology, physical anthropology, urban anthropology, applied anthropology, business anthropology, and industrial and organizational anthropology.

Anthropology is a comparative social science which seeks to uncover principles that govern human behavior. Anthropology is divided into the fields of cultural, physical, and linguistic anthropology, and archaeology. Wayne State's department offers a broad-based Master of Arts degree in anthropology, and a Master of Arts with a concentration in applied medical anthropology. Additionally, the Ph.D. with a major in anthropology is offered in a variety of sub-fields. The Department also offers an opportunity to pursue graduate studies in business and industrial anthropology at the M.A. and Ph.D. levels.

Today, anthropologists are employed in a wide range of areas. Not only do they gain their livelihood in traditional institutions such as colleges, universities, and museums, but the general and specialized skills of anthropology also suit them for employment in numerous public and private settings, most notably health, governmental, and social agencies, business and industrial settings, as well as institutions supporting historic preservation and public archaeology. Accordingly, graduate programs in this department are designed to accommodate a variety of specific student interests and objectives.

Individuals who present degrees in fields other than anthropology and desire admission to graduate degree programs will be individually reviewed. Admission will be allowed at the discretion of the Graduate Committee after review of the applicant's background, training, and academic standing; supplementary work may also be individually prescribed. Three letters of recommendation must be submitted.

Scholarship: All course work completed to satisfy the following degree requirements must be done in accordance with the regulations of the Graduate School and the College governing graduate scholarship and degrees, see pages 16-30 and 204-206, respectively. All students are required to maintain a 'B' average. A grade of 'C' in two courses will be sufficient reason to dismiss a student from a graduate program.

Master of Arts

With a Major in Anthropology

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Additionally, applicants must satisfy the following:

(1) The student must have completed Anthropology 2100 and 2110 or their equivalents. Admission may be granted while these deficiencies are remedied.

(2) The student must submit three letters of recommendation. Forms for this purpose may be secured from the Department office and are to be returned to the chairperson of the Graduate Committee.

(3) The student must submit a letter of intent outlining his/her research interests and intentions in the field of anthropology, so that the Department may determine if the student's goals are compatible with its available expertise. The student may also mention any life history experience which may be helpful in the decision to admit.

(4) The student must arrange for his/her Graduate Record Examination (GRE) scores to be sent to the Department.

(5) The student must have an undergraduate honor point average (h.p.a.) of at least 3.3, except for applicants in the areas of business and medical anthropology where a minimum of 3.5 is required. Admission may be granted in exceptional cases where the honor point average is less than 3.3. Admission is contingent upon h.p.a., GRE scores, recommendations, the compatibility of research and educational goals with departmental resources, and the availability of openings in programs with high demand.

(6) All applications and admissions material may be submitted to the Department and the Graduate School at any time. Generally, all materials should be submitted by October 1 for admittance to the Winter Semester, and by February 1 for admittance in the following Fall Semester. Applicants will not be permitted to perform graduate study until all material has been received and reviewed.

Matriculation: All applicants for the M.A. with a Major in Anthropology must initiate their graduate work as Plan C candidates. (For definition of master's degree plans, see below.) During the course of study, at a time determined in consultation with the student's Departmental committee (but certainly by the time the student has completed 24 credits in the M.A. program), the student must take the M.A. Qualifying Examination. The examination should demonstrate a command of anthropological data, theory and methodologies, and also should demonstrate the student's ability to synthesize material drawn from different areas in anthropology. Each student will be examined in three areas of anthropology, selected in consultation with the student's departmental committee. Two of the areas must be chosen from the traditional four sub-fields of anthropology (cultural, physical, linguistics or archeology). for the third area, the student may choose either a third of the traditional four sub-fields, or — in conjunction with his/her committee — may request to be examined in-depth regarding a more circumscribed area of study.

Plan A is designed for students who wish to conduct research and write a thesis on a topic of particular interest. One component of the thesis should be the demonstration of an ability to integrate information from at least two of the traditional sub-fields in anthropology. Students interested in *Plan A* must secure the agreement of their adviser and constitute an M.A. thesis committee. They also must switch out of *Plan C* and into *Plan A*. This can be done by filing a *Revised Plan of Work* that includes the required Thesis credits (see below)

Each student must file a *Plan of Work* prior to completion of twelve credits.

DEGREE REQUIREMENTS: The Master of Arts with a Major in Anthropology is offered as *Plan A* and *Plan C* options. All students, except those in the M.A. concentration in medical anthropology, must fulfill the foreign language requirement (see below).

Plan A: *Twenty-four credits in course work plus an eight-credit thesis.* Twenty-one credits must be in anthropology, six of which in anthropology courses at the 7000 level (directed studies and thesis credits excluded; see below). The following core courses or their equivalent

lents must be completed with a grade of 'B' or better: ANT 5140, 5200, 5270, 5320, 6300 and 6310, a culture area course, ANT 5210 (or, for students planning to continue for the doctorate, ANT 7200 and 7210 may be substituted), a statistics course to be chosen in consultation with the adviser, and a 7000-level graduate seminar (ANT 7200 and 7210 are not eligible options here). Any of the above requirements, with the exception of ANT 7200, 7210 and the graduate seminar, may have been completed as an undergraduate. A student who enters the M.A. program after completing a B.A. in anthropology is expected to complete the above core requirements, and in addition complete: one further course in the student's sub-field; one course in another of the three sub-fields; and one additional seminar at the 7000 level. Students must satisfactorily complete the written M.A. examination. A final oral examination is required for a *Plan A* thesis

Plan C: *Thirty-two credits of course work.*

Course requirements for this option are the same as for *Plan A* as stated above except that no thesis credit is applicable to the degree. In addition to satisfaction of course requirements, students must demonstrate competence in research and superior performance on the written M.A. examination.

— with a Concentration in
Applied Medical Anthropology

This master's degree program is offered under the following option:

Plan A: *Forty-two credits including a six-credit internship and a three-credit report.*

The following courses must be completed as an undergraduate or graduate student: ANT 5200, 5310 or 5320, 5400, and an additional course in methodology and research techniques; ANT 6300, 6310, 7200, 7210, 7680, 7699, 7996, 7997, and SOC 6280 or its equivalent. Additional credits to count for this degree must be approved, in writing, by the student's adviser and the Graduate Committee prior to being taken; appropriate courses are in anthropology and/or cognate disciplines.

Additional information regarding this program is available from the Department upon request.

Doctor of Philosophy
With a Major in Anthropology

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Only a limited number of applicants who have demonstrated superior ability can be accepted. To be considered for admission, a student must have a master's degree.

In addition to the transcripts and other materials required by the Graduate School, the department requires all materials cited above for admission to the Master of Arts program. An applicant's admissibility into the doctoral program will not be reviewed until these materials have been received. For further information, contact the chairperson of the Graduate Committee.

Candidacy must be established by filing a *Plan of Work*, successfully completing Qualifying Examinations, and submitting an acceptable dissertation prospectus. The *Plan of Work* should be filed before the student has completed forty graduate credits (including transfer credits).

DEGREE REQUIREMENTS: The Doctor of Philosophy requires ninety credits beyond the baccalaureate degree, thirty of which must be earned as dissertation credit. All course work must be completed in accordance with the academic procedures of the College of Liberal Arts and the Graduate School governing graduate scholarship and degrees; see pages 204-206 and 16-30, respectively.

The student is expected to have completed as an undergraduate or graduate student the core requirements and statistics requirement for an M.A. degree in anthropology at Wayne State University, and have completed three 7000-level anthropology seminars and two methodology courses, as approved by the Graduate Committee. The student is expected to command in detail theories, concepts, methodology

and research techniques in common usage in the student's subfield of concentration (cultural anthropology, linguistics, archaeology or physical anthropology).

A student must establish, by written examination, competence in depth over at least three specialties and is expected to satisfactorily complete an oral examination in his/her specialties. Additionally, the student is expected to: (1) complete substantial field research, which will ordinarily be of sufficient duration and scope to provide materials for the student's dissertation (in the case of physical anthropology and some other specializations, the dissertation may be based on laboratory research); and (2) submit an acceptable dissertation and present a final lecture.

Foreign Language Requirement: Graduate students, except those in the M.A. concentration in medical anthropology, must demonstrate a proficiency in an approved scholarly language. Approved foreign languages include Arabic, Chinese, French, German, Italian, Japanese, Portuguese, Russian and Spanish. Proficiency may be demonstrated in any of the following ways: (1) a grade of 'C' or better in one and one-half years of work in the language offered to meet the requirement (three semesters or five quarters of classwork at any accredited college or university); (2) satisfactory performance on a standardized (Educational Testing Services) examination; (3) certification of competence to carry out research in the relevant language by a member of the graduate faculty of Wayne State or an equivalent university. The nature of the tools of research and requirements for satisfactory proficiency will be determined by each student's doctoral committee. Additionally mandated tools of research may include additional statistics, mathematics, computer science and/or a field language.

For Further Information: A more detailed discussion of the doctoral program, and information on graduate study in business and industrial anthropology and in medical anthropology, is available from the department upon request. See also Graduate Degree Requirements, page 27, for information on the required minor, residency, and other University requirements.

Financial Aid

General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 30 of this bulletin. The following information pertains to the Anthropology Department:

Assistantships and Fellowships: A limited number of assistantships and fellowships are available. Consult the Department chairperson for further details.

Leonard Moss Memorial Scholarship: One or more awards are made annually to graduate students in support of tuition or an outstanding research proposal.

GRADUATE COURSES (ANT)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to gradu-

ate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509 .

5060 Urban Anthropology. (SOC 5540) Cr. 3

Prereq: ANT 2100 or consent of instructor. Social-cultural effects of urbanization from a cross-cultural perspective with emphasis on the developing area of the world. The process of urbanization; the anthropological approach in the area of urban studies. (Y)

5140 Biology and Culture. Cr. 3

Prereq: ANT 2100 or 2110 or consent of instructor. Interrelationships between the cultural and biological aspects of humans; human genetic variability, human physiological plasticity and culture as associated mechanisms by which humans adapt to environmental stress. (I)

5180 Introduction to Forensic Science. Cr. 3

Prereq: CRJ 1010 or ANT 2110 or consent of instructor. Introductory survey of the natural, medical, and behavioral sciences with regard to forensic applications. Topics may include: toxicology, forensic pathology, fingerprints, ballistics, analysis of the human skeleton, body fluid identification. (B)

5200 Social Anthropology. Cr. 3

Prereq: SOC 2010 or ANT 2100. Social anthropological thought and practices, in concert with explanations of social institutions and their structure. Role of social organization in molding of human behavior, and validity of socioanthropological discourse. Ethnographies will be read for cross-cultural perspective. (Y)

5210 Anthropological Methods. Cr. 3

Prereq: ANT 2100 or consent of instructor. Undergraduate majors in anthropology are introduced to basic methods. Students engage in a research experience supervised by the instructor, write a field journal, and complete a final exam. Participant observation, field notes, interviewing skills. (Y)

5240 Cross Cultural Study of Gender. Cr. 3

Prereq: ANT 2100 or consent of instructor. Evolutionary and cultural bases of female roles using a world sample, division of labor, marriage and sexual behavior, power and ideology. (I)

5260 The African Religious Experience: A Triple Heritage. (AFS 5260) (GIS 5260) Cr. 3

A triple heritage has contributed to the shaping of lives of African descent: the indigenous, Islamic and Christian religions. Analysis of these legacies, their specificity, interplay and significance in Africa, the Caribbean, South and North America. (B)

5270 Introduction to Archaeology. Cr. 3

ANT 2100 or 3200. For advanced anthropology students. Current theoretical and methodological approaches to investigation of past societies; frameworks include culture history, processual, structuralist, neo-Marxist; methods and techniques used to investigate ancient environments, subsistence strategies, ideologies, and social, political and economic organizations. (Y)

5280 Field Work in Archaeology of the New World. Cr. 5 (Max. 10)

Prereq: consent of instructor; ANT 5270 recommended. Introduction to reconnaissance and excavation of sites; preparation and cataloging of specimens; analysis of data. Material fee as indicated in the Schedule of Classes. (F)

5310 Language and Culture. (LIN 5310) Cr. 3

Prereq: ANT 2100 or 5200 or SOC 2010 or consent of instructor. Explore the rich interconnections of language and culture in distant and local communities, in contexts where languages are declining or developing anew, and in life cycle and ordinary contexts of daily life. Students are also expected to explore their own language and cultural backgrounds and those to which they are drawn. (F)

5320 Language and Societies. (LIN 5320) Cr. 3

Prereq: ANT 2100 or 5200 or SOC 2010 or consent of instructor. Contemporary linguistic anthropologists see language as a form of social action. How has this understanding of language in society

evolved? Read classic works of linguistic anthropology and contemporary studies in this growing field. Engage in research in language in society. (W)

5350 (AFS 5350) African American Religious History and Practice. (GIS 5350) Cr. 4

Prereq: upper division or graduate standing. Historical role and function of religion among African Americans from slavery to the current period. Analysis of religion as the mainstay of African American survival and its contribution to African American identity. (B)

5370 Magic, Religion and Science. Cr. 3

Prereq: ANT 2100 or 5200 or SOC 2010 or consent of instructor. The nature and variety of religious belief and practice; theoretical interpretations. (B)

5380 History of Anthropology. Cr. 3

History of Ideas approach; historical development of British, French, American, German, Belgian, Russian, and Third World anthropology. (Y)

5400 Anthropology of Health and Illness. Cr. 3

Prereq: ANT 2100 or consent of instructor. An anthropological perspective on the study of health and illness. Folk medical beliefs and practices, cultural patterns for coping with illness, and organization of health institutions cross-culturally. (Y)

5410 Anthropology of Age. Cr. 3

Prereq: ANT 2100 or consent of instructor. Old age examined from a cultural perspective; social and political factors; cross-cultural consideration of values which affect the experience of old age and the status of the elderly. Role of ethnicity and minority status in aging. (Y)

5420 Community Health Ethnography. Cr. 3

Prereq: ANT 2100. Fieldwork while serving as volunteer in health service agency. Medical and urban anthropology; field journal required. (B)

5510 Precolombian Mesoamerican Cultures. (CBS 3510) Cr. 3

Prereq: ANT 2100 or consent of instructor, or CBS 2010. Survey of the history and characteristics of cultures in Mesoamerica prior to colonization, from the Maya and Olmec to the Aztec. (I)

5600 Museum Studies. Cr. 3

Introduction to basics of museums, museum work, and museum theory. Topics include: collections management, data bases, interpretive exhibit methods, current issues in museum studies, legal concerns, role of museums as educational institutions. (I)

5996 Capstone Seminar in Anthropology. Cr. 3

Prereq: upper division or graduate standing. Review and integrate central practices and theories in anthropology through discussion of the four major subfields and applied areas of anthropology. Special attention will be given to new developments in the different fields. Required for undergraduate majors; recommended for new graduate students without extensive background in anthropology; also open to those outside anthropology who desire a thorough view of research areas and theoretical perspectives in anthropology. (Y)

6080 (ENG 5600) Studies in Folklore. Cr. 3

Prereq: ENG 2280 or ENG 3600 or ENG 4650 or ANT 2100 or consent of instructor. Use of folklore in literature; field work; analysis of collected oral literature; study of separate genres of oral literature and analysis of parallel texts. Topics to be announced in Schedule of Classes. (I)

6170 Political Anthropology. Cr. 3

Prereq: ANT 2100 or 5200 or SOC 2010 or consent of instructor. Comparative political systems of traditional societies. Government, the state, warfare, law, and social control. Theoretical approaches with analysis of representative societies. (I)

6230 Cultures of Subsaharan Africa. Cr. 3

Prereq: ANT 2100 or SOC 2010 or consent of instructor. Subsaharan African cultures and societies; emphasis on both complex and simple political systems. (I)

6290 Culture Area Studies. Cr. 3 (Max. 9)

Prereq: ANT 2100 or 5200 or SOC 2010 or consent of instructor. Culture and social changes. Origins and functional interrelationships, regional variation in population, settlement, race contact, acculturation, migration, social institutions. Topics to be announced in Schedule of Classes. (I)

6300 Anthropological Theory I. Cr. 3

Required for first year graduate students. Examination of some major debates in anthropology in historical and contemporary perspective; continuities and breakthroughs. (Y)

6310 Anthropological Theory II. Cr. 3

Prereq: ANT 6300. Required for first-year graduate students. Continuation of ANT 6300. (Y)

6360 (HIS 7860) Oral History: A Methodology for Research. (LIS 7770) Cr. 3

Oral history as a methodology for research. Interviewing procedures and techniques of indexing, transcribing, and analyzing historical content of oral history interviews. (I)

6370 Symbolic Anthropology. Cr. 3

Human ability to create symbols to communicate. Oral tradition and myth; utopia and uchronia and the imaginary construction of the world; art and the eschatological discourse. (Y)

6390 Contemporary Theory in Anthropology. Cr. 3

Prereq: ANT 6380 or 24 credits in anthropology or consent of instructor. Analytical framework in use and developments in theory since 1940; the comparative method in the social sciences. Contemporary anthropological problems. (W)

6450 Culture, Health Policy and AIDS. Cr. 3

Prereq: ANT 2100 or consent of instructor. Interface of cultural, scientific and political factors in the formation of health policy. Focus on specific health problem (e.g., AIDS, aging); analysis of social construction of the problem, and political and medical aspects. (Y)

6500 North American Prehistory. Cr. 3

Prereq: ANT 2100 or consent of instructor; 5270 recommended. Prehistory of North America north of Mexico from the late Pleistocene to Euro-American contact. (I)

6550 Practicum in Archaeology. Cr. 2 (Max. 8)

Prereq: ANT 5270 or 5280, or consent of instructor. Selected topics; emphasis on application of theory, practice, and research. Topics include: cultural resource management, ceramic analysis, settlement pattern studies, materialities, historical archaeology, archaeological data management. (Y)

6650 Studies in Physical Anthropology. Cr. 2-4 (Max. 12)

Prereq: ANT 2110 or consent of instructor. Selected topics in physical anthropology. Topics to be announced in Schedule of Classes. (I)

6680 Studies in Cultural Anthropology. Cr. 2-4 (Max. 12)

Prereq: ANT 2100 or 5200 or consent of instructor. Selected topics in cultural anthropology. Topics to be announced in Schedule of Classes. (I)

6700 Topics in Medical Anthropology. Cr. 3

Prereq: ANT 2100 or consent of instructor. Selected topics in medical anthropology with relevance to theory, practice, and research. (B)

6710 Medical Anthropology: Alcohol/Drug Use and Abuse. Cr. 3

Prereq: ANT 2100 or consent of instructor. Biological and cultural aspects of alcohol and drug use and abuse considered in the context of medical anthropology and its theory, practice and research. (Y)

6992 Field Practicum in Business/Industrial Anthropology. Cr. 2-8

Prereq: ANT 7200 or consent of instructor. Students gain firsthand experience in conceptualizing, conducting, and/or implementing applied research in business/industrial organizations. (F,W)

7200 Methodology and Research Techniques I.

Cr. 1-3 (Max. 6)

Qualitative methods techniques and research design. Students conduct field research in their area of interest, with a focus on data gathering methods. (B)

7210 Methodology and Research Techniques II. Cr. 3

Prereq: graduate standing; ANT 7200. Continuation of ANT 7200. Training in computer and other tools for data analysis. Students learn to analyze data collected during field research. (Y)

7220 (ULM 7220) Seminar in Survey Research Methods. (P S 7620) (SOC 7220) Cr. 3

Prereq: advanced undergraduate or graduate training in general research methods and statistics; open to upper level undergraduates with consent of instructor. Hands-on approach to understanding the strengths and potential pitfalls of the survey method. Topics include: design of survey research (including theory, measurement and ethics), sampling (including special populations), questionnaire development and survey administration. (F)

7250 (NUR 7060) Transcultural Health and Life Cycle. Cr. 3

Prereq: NUR 7100. Advanced comparative knowledge of transcultural health care values, beliefs, and socialization practices of people from Western and non-Western cultures. Comparative theories and research methods of differences and similarities among different cultures are presented and discussed. Critical issues and problems of child and adult enculturation and socialization relevant to culturally sensitive and competent health care practices. (W)

7260 (ULM 7260) Urban Poverty and Racial Segregation. (AFS 6600)(P S 7260) (SOC 7350) (U P 7260) Cr. 3

Prereq: graduate standing. Review of theories of poverty from various economic/political perspectives; historical intervention policies; current literature on interplay of racial, economic, and spatial factors on growing economic inequality among urban whites and African-Americans. Political rationale and meaning of 'underclass' debate. (Y)

7620 Seminar in Problems and Concepts in Archaeology. Cr. 3 (Max. 15)

Central concepts and theories. Current developments, problems and contemporary research orientations. Topics to be announced in Schedule of Classes. (B)

7630 Seminar in Problems and Concepts in Cultural Anthropology. Cr. 2-3 (Max. 9)

Central concepts and theories. Current developments, problems and contemporary research orientations. Topics to be announced in Schedule of Classes. (Y)

7650 Seminar in Physical Anthropology. Cr. 3

Prereq: ANT 2110. Current developments, problems, research orientations. Topics to be announced in Schedule of Classes. (Y)

7680 Seminar in Medical Anthropology. Cr. 3 (Max. 6)

Interrelations of environmental, biological, and cultural factors in human adaptation; the cultural ecology of health and disease; cross-cultural perspectives on medical beliefs and practices; medical care systems of Western and non-Western peoples. (Y)

7690 Seminar in Comparative Health Systems. Cr. 3

Alternative health systems around the world. The economic, political and belief systems of various cultures and their effect on health beliefs and practices. (Y)

7700 Seminar in Business and Industrial Anthropology. Cr. 3-9

Prereq: ANT 2100 or equiv.; 3150 or consent of instructor. Primary applications of anthropology within business and industry, including applications in the international business arena and within domestic industrial organizations. (B)

7990 (ANA 7990) Directed Study in Physical Anthropology. Cr. 1-8 (Max. 8)

Prereq: written consent of adviser and graduate officer. (T)

- 7991 Directed Study in Linguistics. (LIN 7991) Cr. 1-9 (Max. 9)**
Prereq: written consent of adviser and graduate officer. Open only to graduate students. A research problem which requires field work or intensive and systematic reading of original technical literature. (T)
- 7992 Directed Study in Archaeology. Cr. 1-9 (Max. 9)**
Prereq: written consent of adviser and graduate officer. Open only to graduate students. A research problem which requires field work or intensive and systematic reading of original technical literature. (T)
- 7993 Directed Study in Cultural Anthropology. Cr. 1-9 (Max. 9)**
Prereq: written consent of adviser and graduate officer. Open only to graduate students. A research problem which requires field work or intensive and systematic reading of original technical literature. (T)
- 7994 Directed Study in Medical Anthropology. Cr. 1-9 (Max. 9)**
Prereq: written consent of adviser and graduate officer. Open only to graduate students. Research problem requiring field work or intensive and systematic reading of original technical literature. (T)
- 7995 Directed Study. Cr. 1-9 (Max. 9)**
Prereq: written consent of adviser and graduate officer. (T)
- 7996 Internship in Applied Medical Anthropology. Cr. 3-6 (Max. 6)**
Prereq: consent of adviser; 16 graduate-level credits in anthropology; enrollment in Applied Medical Anthropology program. Offered for S and U grades only. Practicum experience in a health-care facility, human service agency, governmental health program, or other setting appropriate to the student's goals. Supervised practice may focus on clinical, managerial, program development and evaluation, or research functions at the field site. Approximately 20 hours per week. (T)
- 7997 Internship: Final Report. Cr. 3**
Prereq: ANT 7996. Final report on internship project to be developed in cooperation with faculty advisor and sponsor at the internship agency. (T)
- 7998 Field Problem. Cr. 1-9 (Max. 9)**
Prereq: consent of adviser and written consent of graduate officer. Open only to graduate students. A research problem which requires field work or intensive and systematic reading of original technical literature. (T)
- 8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)**
Prereq: consent of adviser. (T)
- 9999 Doctoral Dissertation Research and Direction. Cr. 1-16 (30 req.)**
Prereq: Candidacy Status of consent of the Graduate School. Offered for S and U grades only; interim Y mark permitted. (T)

ART HISTORY

Office: 150 Art Bldg., 450 Reuther Mall; 577-2980
Chairperson: Marion Jackson
Associate Chairperson: Carolyn J. Hooper
Slide Collection Curator: Terry Kirby

Professors

Bernard M. Goldman (Emeritus), Joseph Gutmann (Emeritus), Marion Jackson, Horst Uhr

Associate Professor

Brian Madigan

Assistant Professors

Sarah Guberti-Bassett, Nancy Locke

W. Hawkins Ferry Endowed Chair in Twentieth Century Art History and Criticism

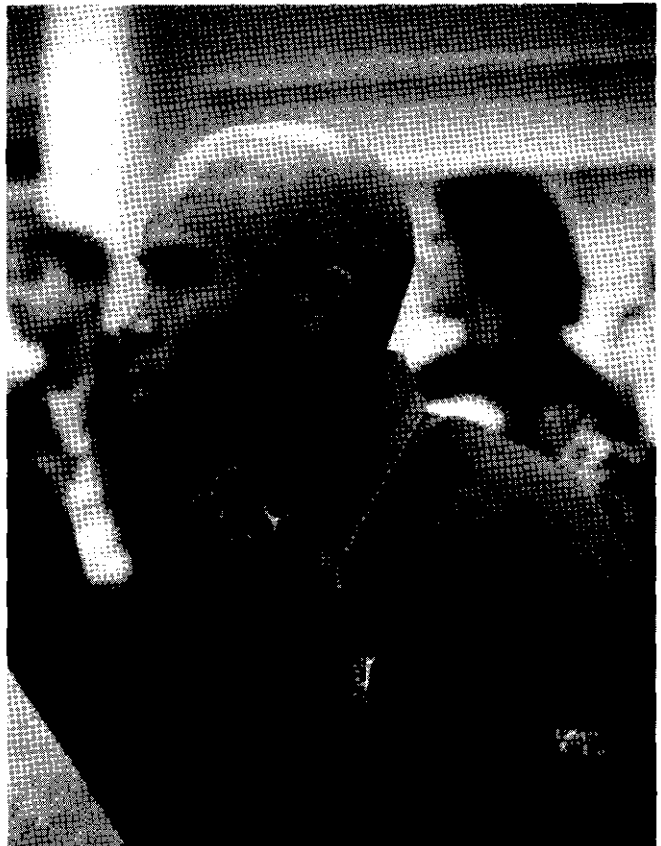
Erika Wolf

Graduate Degree

MASTER OF ARTS with a major in art history

Students may earn the Master of Arts degree in art history from the College of Fine, Performing and Communication Arts.

For information on this program, see the Department of Art and Art History, College of Fine, Performing, and Communication Arts, page 155; or contact the Department.



CLASSICS, GREEK, and LATIN

Office: 431 Manoogian Hall; 577-3032

Chairperson: Kathleen McNamee

Professors

Kathleen McNamee, Richard W. Minadeo (Emeritus)

Associate Professors

Ernest J. Ament (Emeritus), Joel B. Itzkowitz, Michelle V. Ronnick, Kenneth R. Walters

Assistant Professor

Jennifer A. Sheridan

Lecturer

Alexander Kalogirou

Graduate Degree

MASTER OF ARTS with a major in Classics and concentrations in ancient Greek and Latin, Latin, or ancient studies

This department offers courses and programs of instruction in Latin and Greek (both ancient and modern), in the Classical literature of these languages in English translation, and in aspects of Greek and Roman culture. Graduate minor or cognate credit may be earned in classics courses in English. The substance of these studies constitutes the basis of Western civilization and education for over two thousand years. The prevalence of this heritage in a wide variety of academic disciplines affords Classics majors excellent preparation for a variety of careers: teaching at the high school or university level, professional work in law, library and information science, museum practice, political science, medicine and the health sciences (when combined with science study); or non-academic fields such as government, publishing, tourism and business, where intelligence and a broad liberal education are valued. The Department offers cognate work for majors in other departments.

Scholarship: All course work for the following degrees must be completed in accordance with the academic procedures of the Graduate School and the College governing graduate scholarship and degrees, see pages 16-30 and 204-206, respectively.

Master of Arts with a major in Classics

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Additionally, the applicant must present an undergraduate major in Latin, Greek, or Classics, or receive the consent of the graduate adviser for graduate work.

Candidacy must be established by the time twelve credits have been earned.

DEGREE REQUIREMENTS: The master's degree in Classics is offered under the following options:

Plan A: Twenty-four credits in course work, plus an eight-credit thesis.

Plan B: Twenty-eight credits in course work, plus a four-credit essay.

Plan C: Thirty-two credits in course work.

Concentrations available under *Plan A* or *Plan B* are: Latin, or ancient Greek and Latin. Concentrations available under *Plan C* are: Latin, ancient Greek and Latin, or ancient studies. Requirements are:

Latin: Under *Plan A*, course work must include at least twenty-four credits in Latin exclusive of Latin 8999; at least eight of these twenty-four credits must be in courses numbered 7000 or higher. Latin 5000 does not satisfy these requirements; a final written and/or oral examination is required.

Under *Plan B*, course work must include at least twenty-eight credits in Latin exclusive of Latin 7999; at least eight of these twenty-eight credits must be in courses numbered 7000 or higher. A maximum of four credits in cognate or related fields may be applied under this Plan; Latin 5000 does not satisfy these requirements; a final written and/or oral examination is required.

Under *Plan C*, course work must include at least thirty-two credits in Latin exclusive of Latin 7999; at least eight of these thirty-two credits must be in courses numbered 7000 or higher. A maximum of four credits in cognate or related fields may be applied under this Plan; Latin 5000 does not satisfy these requirements; a final written and/or oral examination is required.

Ancient Greek and Latin: Under *Plans A* and *B*, a minimum of twelve credits in course work is required in *each* language (ancient Greek and Latin) exclusive of Greek or Latin 8999 or 7999. A minimum of two courses (exclusive of thesis or essay courses) in one language must be in courses numbered 7000 or higher. (A maximum of four credits in cognate or related fields may be applied under *Plan B*.) Greek or Latin 5000 does not satisfy these requirements; a final written and/or oral examination is required.

Under *Plan C*, a minimum of sixteen credits in course work must be taken in one language, and a minimum of twelve credits in the other. A maximum of four credits in cognate or related fields may be applied under *Plan C*. Greek or Latin 5000 does not satisfy these requirements; a final written and/or oral examination is required.

Ancient Studies: This concentration is available only under *Plan C*. A minimum of twenty credits is required in either ancient Greek or Latin, exclusive of Greek or Latin 5000, plus at least six credits in Classics (CLA) courses at the 5000-level or above and at least six additional credits in courses selected from the following list. At least two courses elected in this plan must be in courses numbered 7000 or above.

ANT 5270	Introduction to Archaeology
ANT 5310	Language and Culture
A H 5200	Early Greek Art
A H 5210	Hellenistic and Roman Art
A H 5220	Ancient Greek Architecture
A H 5250	Ancient Rome
A H 5260	Classical Greek Art
A H 5300	Early Christian and Byzantine Art
A H 5310	The Ancient City of Athens
A H 5320	Classical Architecture in Britain and the United States
CLA 5190	Daily Life in the Ancient World
CLA 5200	Special Studies
CLA 5250	Ancient Greek and Roman Drama
CLA 6250	(CLA 3250) The Ancient City
HIS 5330 or 7330	History of Ancient Greece
HIS 5340 or 7340	History of Ancient Rome
HIS 5360 or 7360	The Early Middle Ages: 300-1000
PHI 5410	Plato
PHI 5420	Aristotle
SPC 7190	Classical Rhetorical Theory

Assistantships and Scholarships

General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 30 of this bulletin.

Teaching assistantships and scholarships are available to qualified graduate students. Applications for most scholarships should be made directly to the Graduate School, but applications for teaching assistantships and for the William A. VanDeven Scholarship should be submitted to the Department, in care of the graduate adviser. Applications for teaching assistantships are due by March 1.

GRADUATE COURSES

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

CLASSICS (CLA)

5190 Daily Life in the Ancient World. Cr. 3

Prereq: one CLA or HIS course or consent of instructor. Topics such as family, gender relations and sexual mores, housing, city and country life, athletics, festivals and entertainment, soldiering, slavery, trade, and farming; focus on everyday experiences. (Y)

5200 Special Studies. Cr. 1-4 (Max. 8)

Prereq: minimum of one previous classics course, 200 level or above. In-depth study of some aspect of Greek and Roman civilization. Topics may be drawn from the fields of literature, archaeology, art and history, and will be announced in Schedule of Classes. All readings in English. (I)

5990 Directed Study. Cr. 1-4 (Max. 8)

Prereq: undergrad., at least two classics courses and written consent of chairperson; grad., written consent of chairperson and graduate officer. Directed independent research in depth on a topic or author not treated in the regular classics offerings, culminating in a course paper. (T)

6250 (CLA 3250) The Ancient City. (HIS 3340) Cr. 3-4

Prereq: graduate standing. Study of the growth and development of urban centers in ancient Greece and Rome from the Bronze Age to the time of Constantine. Special attention given to geographic, sociological, political and cultural factors. (B)

6260 (CLA 3999) Further Studies in Mythology. Cr. 3 (Max. 6)

Prereq: CLA 2000 or GER 1700 or equivalent introductory mythology course in any other department, or consent of instructor. An in-depth study of mythology with special reference to particular classical myths or theories of myth. (I)

GREEK (GRK)

5000 Ancient Greek for Graduate Students. Cr. 1-3 (Max. 3)

Prereq: graduate standing. Introduction to basic vocabulary, forms and grammar of classical Greek leading to the reading of continuous Greek prose passages. Offered in conjunction with GRK 1010 or GRK 1020. (F,W)

5110 Modern Greek for Graduate Students. Cr. 1-3

Prereq: consent of instructor. Vocabulary and grammar of modern Greek. Emphasis on conversation, reading and writing. (F,W)

5200 Greek Lyrical Poetry. Cr. 4

Prereq: GRK 2600 or equiv. or consent of instructor. Study of personal lyric poetry as a reflection of the individual and society in post-Homeric Greece. (I)

5300 Attic Orators. Cr. 4

Prereq: GRK 2600 or equiv. or consent of instructor. Development of Greek prose style and rhetoric in selected works of the Attic orators. (I)

5400 Greek Philosophy. Cr. 4

Prereq: GRK 2600 or equiv. or consent of instructor. The origin and development of Greek philosophy as seen through representative selections from the Presocratics, Plato, Aristotle, Epicurus, and the Stoics. (I)

5600 Epic Poetry. Cr. 4

Prereq: GRK 2600 or consent of instructor. Study of the epic poetry of Homer, Hesiod, Apollodorus and others in ancient Greek. Theory of oral vs. literary composition, the Homeric question, and metrics. (I)

5990 Directed Study. Cr. 1-4 (Max. 8)

Prereq: undergrad., written consent of chairperson; grad., consent of chairperson and graduate officer. (T)

6250 Greek Drama. Cr. 4

Prereq: any 3000-level or above Greek course, or consent of instructor. Selected readings from the plays of Aeschylus, Sophocles, or Euripides and from the plays of Aristophanes or Menander. History and theory of the development of Greek drama and its subsequent influence on world literature. (I)

7810 Studies in Greek Poetry. Cr. 4 (Max. 12)

Prereq: undergrad. major in Classics or Greek or consent of instructor. A major poet or genre of poetry. Topics to be announced in Schedule of Classes. (B)

7820 Studies in Greek Prose. Cr. 4 (Max. 12)

Prereq: undergrad. major in Classics or Greek or consent of instructor. A major prose author or prose genre. Topics to be announced in Schedule of Classes. (B)

7999 Master's Essay Direction. Cr. 1-4

Prereq: consent of adviser. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of adviser. (T)

LATIN (LAT)

5000 Latin for Graduate Students. Cr. 1-3 (Max. 3)

Basic vocabulary, forms and grammar of Latin leading to the reading of continuous Latin prose passages. (T)

5810 Roman Historians. Cr. 4

Prereq: LAT 2600 or equiv. or consent of instructor. Selected readings from Tacitus, Livy, Caesar or Sallust illustrating the Roman rhetorical and ethical analysis of republican and imperial history. (I)

5830 Roman Philosophy. Cr. 4

Prereq: LAT 2600 or equiv. or consent of instructor. Readings in Latin of the Roman philosophers, including the works of Lucretius, Cicero, Manilius, and Seneca. (I)

5850 Epic. Cr. 4

Prereq: LAT 2010 or 2600 or equiv. Readings in Latin of the works of Ennius, Vergil, Lucan, Statius and others. (I)

5860 Lyric and Elegy. Cr. 4

Prereq: LAT 2600 or equiv. or consent of instructor. Readings in Latin of lyric and elegaic poetry including the works of Catullus, Tibullus, Horace, and Propertius. (I)

5990 Directed Study. Cr. 1-4 (Max. 8)

Prereq: undergrad., written consent of chairperson; grad., written consent of chairperson and graduate officer. (T)

6820 Roman Rhetoric. Cr. 4

Prereq: LAT 3150 or equiv. or consent of instructor. Study of Roman rhetorical theory and practice. (I)

6840 Roman Drama. Cr. 4

Prereq: LAT 3150 or equiv. or consent of instructor. Study of Roman comedy and tragedy through study of plays of Plautus, Terence, and Seneca. Early history of Roman drama studied through literary remains of Accius, Pacuvius, and Naevius. (I)

7810 Studies in Latin Poetry. Cr. 4 (Max. 12)

Prereq: major in Classics or Latin or consent of instructor. A major poet or genre of poetry. Topics to be announced in Schedule of Classes. (B)

7820 Studies in Latin Prose. Cr. 4 (Max. 12)

Prereq: major in Classics or Latin or consent of instructor. A major prose author or prose genre. Topics to be announced in Schedule of Classes. (B)

7999 Master's Essay Direction. Cr. 1-4

Prereq: consent of adviser. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of adviser. (T)



COMPARATIVE LITERATURE

Office: English Department, Room 2250, 51 W. Warren; 577-2450
Interim Director: Anca Vlasopolos

Faculty

Faculty members from the Departments of English, Classics, Greek and Latin, Humanities, Near Eastern Languages and Literatures, Romance Languages and Literatures, and German and Slavic Languages and Literatures.

Graduate Degree

MASTER OF ARTS with a Major in Comparative Literature

Admission: All applicants must meet the general standards for admission to graduate study as determined by the University and stated elsewhere in this bulletin (page 16). In addition, the student must be prepared to do graduate work in the literature of two languages, one of which may be English.

Candidacy must be established by the time twelve credits have been earned.

DEGREE REQUIREMENTS: The Master of Arts with a major in comparative literature is offered only as a Plan B master's program requiring thirty-three credits including a three-credit essay. The student is required to take a seminar in literary theory and the comparative study of literature, course work in two literatures, and a course in translation. Each student completes his/her program by writing a master's essay.

Courses of Instruction: Courses are drawn from the departments of faculty members who participate in this program; see above. Individual programs will be designed by the student and his/her adviser.

CRIMINAL JUSTICE

Office: 2305 Faculty/Administration Building; 577-2705
Chairperson: Steven J. Stack

Faculty

David C. Portalatin, Assistant Professor, Criminal Justice
Denis Hunter, Lecturer, Criminal Justice
Thomas M. Kelley, Associate Professor, Criminal Justice
Steven J. Stack, Professor and Chairperson, Criminal Justice
Olga Tsoudis, Assistant Professor, Criminal Justice
Marvin Zalman, Professor, Criminal Justice

Graduate Degree

MASTER OF SCIENCE in Criminal Justice

The Criminal Justice graduate program is a professional course of study designed to prepare persons for positions of leadership in the administration of justice. The study of criminal justice begins with analysis of the entire justice system as a force for social order. Advanced study inquires into the political, organizational, social and behavioral aspects of various components of criminal justice. Research courses give students the tools with which to independently analyze criminal justice and skills important for career development. Courses are offered in the following areas: criminal justice administration, police and police administration, juvenile justice and counseling, corrections, and research and quantitative methods.

Master of Science in Criminal Justice

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Strong undergraduate social science preparation is recommended, and additional undergraduate course work may be specified in criminal justice or related areas where such preparation is inadequate. Applicants must submit transcripts of all previous college work, and the *Application for Graduate Admission* with all the required information supplied to the Office of University Admissions. Transcripts must be mailed directly from the previously attended college or colleges. The aptitude sections of the Graduate Record Examination are required. Three letters of recommendation, including two from college teachers familiar with the applicant's academic work, should be mailed to: Graduate Adviser, Criminal Justice Department, at the address above. Applicants for this degree should consult the departmental graduate adviser; telephone (313) 577-2705.

Admission requirements include at least a 3.0 honor point average in upper-division courses, and the achievement of satisfactory scores on the aptitude sections of the Graduate Record Examination in accordance with Departmental graduate admissions policy.

Candidacy must be established by the time nine credits have been earned. An official *Plan of Work* must be filed by that time.

DEGREE REQUIREMENTS: The Master of Science degree is awarded upon successful completion of thirty-two credits in selected course work, including required core courses (see below) and electives, as described in the student's *Plan of Work* and the satisfactory completion of either a master's thesis or a master's essay. All course work must be completed in accordance with the academic procedures of the College and the Graduate School governing graduate scholarship and degrees; see pages 204-206 and 16-30, respectively. Students should also obtain a copy of the Criminal Justice Department's Guidelines for graduate policies and procedures. The degree is offered as either a *Plan A* or *Plan B* option, as follows:

Plan A: thirty-two credits in course work including a thesis.

This plan is designed for students who intend to pursue doctoral work in the social sciences and who demonstrate exceptional ability in

research methods. Consult the Department Chairperson or the Graduate Committee Chairperson for further details.

Plan B: thirty-two credits in course work, including a three credit essay demonstrating substantial research and mastery of a selected topic.

CORE COURSES:

Credits

CRJ 7010 — Contemporary Criminal Justice 3
P S 7320 — Organization Theory and Behavior 3

One course in administrative law:

CRJ 6750 or P S 6120
— Administrative Law in Criminal Justice 3
— Administrative Law and Regulatory Politics 3

One course in social science research methodology:

ANT 5210 or P S 7660 or SOC 7200
— Methods in Anthropology 3
— Research Methods in Policy and Politics 3
— Adv. Survey of Approaches and Tech. of Social Research 4

One course in applied statistics in the social sciences:¹

P S 5630 or SOC 6280
— Statistics and Data Analysis in Political Science I 4
— Social Statistics 4

One of the following area seminars:

CRJ 6230 — Advanced Law Enforcement Administration 3
P S 6350 — Judicial Administration 3

Elective Courses: The remaining courses are to be chosen after a conference with the graduate adviser to determine the plan which is most consistent with the student's educational and career goals. These courses will be specified in the student *Plan of Work*. Some elective credit may have to be used to satisfy the College of Liberal Arts requirement that at least six credits in course work be at the 7000 level or higher, and that at least six credits, excluding core courses, be taken in the major area. All remaining courses toward the degree must be taken at the 5000 level or higher.

Assistantships

General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 30 of this bulletin.

The Criminal Justice Department offers a graduate assistantship for one academic year, but which may be extended for an additional academic year. Qualifications include high undergraduate academic performance, high Graduate Record Examination scores, and admission as a regular master's student in the Criminal Justice master's degree program. Interested individuals may apply at any time between September 1 through May 1 for the following academic year.

GRADUATE COURSES (CRJ)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

1. If a student has previously completed a basic course in applied statistics, the graduate adviser may require the student to take an advanced course.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

5060 Comparative Criminal Justice Systems. Cr. 3

No credit after former CRJ 6500. Selected criminal justice systems in other nations. (I)

5700 Understanding and Coping With Stress in Law Enforcement. Cr. 3

Provides criminal justice personnel with a bio-social framework or model to identify specific stresses peculiar to law enforcement work and develop adaptive mechanisms to mediate stress and alleviate the psychological effects of stress. (W)

5710 Constitutional Criminal Procedure. Cr. 4

Prereq: minimum of twelve credits in criminal justice; CRJ 1010. Not for graduate credit without consent of graduate program director. Constitutional safeguards and legal controls on governmental action. Constitutional doctrines examined: due process, equal protection of the laws, search and seizure, self-incrimination, double jeopardy, right to counsel, speedy trial, bail, cruel and unusual punishments. Topics may include: role of Supreme Court, investigation, arrest, stop and frisk, searches, electronic eavesdropping, confessions, preliminary examination, grand jury, plea bargaining, jury trial, sentencing, prisoners' rights, death penalty. (T)

5720 Criminal Law. Cr. 4

Not for graduate credit without consent of graduate program director. An examination of the common law. Development of the criminal law, the general elements of crime, general defenses, principles of accountability, and the particular elements of specific crimes. (T)

5790 Topics in Justice and Law. Cr. 4

Prereq: junior status; 3.0 h.p.a. or above, or honors student. Legal analysis of selected topics in justice and law; rotating topics including political trials. (I)

5810 (SOC 5810) Law in Human Society. Cr. 3

Law and the legal structure in its social context. Development, enforcement, and interpretation of law; emphasis on the American governmental system. Reciprocal effects of law and the society in which it develops; comparative analysis. For pre-law, criminal justice, and political science students, as well as for sociology majors. (Y)

5860 Research in Criminal Justice. Cr. 4

Criminal justice data sources; designs for research; analysis and application of descriptive and inferential statistics in criminal justice planning and evaluation. (F,W)

5910 Seminar on Crime, Victimization, and Society. Cr. 4

Prereq: CRJ 1010 and 5860. Review of advanced research on crime, victimization, and society. (F,W)

5994 (PCS 5000) Dispute Resolution. (P S 5890) (PSY 5710) Cr. 3

Overview of the processes and sectors in the field of dispute resolution including negotiation, mediation, arbitration, and conciliation. (T)

5995 Special Topics in Criminal Justice. Cr. 3 (Max. 9)

Prereq: CRJ 1010. No credit for repeated section. (Y)

6000 Internship. (U S 6000) Cr. 1-8 (Max. 8)

Prereq: written consent of adviser. A comprehensive internship program involving various criminal justice agencies. Placement may be made in court, corrections, police, juvenile justice, and other agencies at the state, county and local levels; work opportunities include agency procedure and policy, patrol, case analysis, report writing and research. (T)

6230 Advanced Law Enforcement Administration. Cr. 3

Prereq: CRJ 1010 and CRJ 4600. Police-management problems; organization and objectives, planning and coordination, public relations and support. (W)

6350 (P S 6350) Judicial Administration. Cr. 3

Investigation of management of court processes and personnel; role of court administrators; financing, budgeting, speedy trial, indigent representation problems; alternatives to litigation; impact analysis. (B)

6430 Counseling Strategies with Youthful Offenders. Cr. 3

Prereq: CRJ 4410. No credit after former CRJ 6991. Application of causal theories to counseling strategies. Models for offender classification and treatment. Counselor attitudes and styles. Special issues in the treatment of delinquents. Individual and group models for counseling. Evaluation models to assess counseling effectiveness. (B)

6600 Social and Legal Dynamics of Child Abuse. Cr. 3

Prereq: CRJ 4410. Dynamics and psychopathology of child abuse: its incidence and impact on the family, society, and the numerous social and legal agencies involved in the detection, processing, and treatment of both child abusers and the abused. (F)

6750 Administrative Law in Criminal Justice. Cr. 3

Prereq: junior, senior or graduate level standing. Functions, powers, procedures, and constitutional limitations germane to administrative agencies and officers, with particular emphasis on those operating in the criminal justice field. (W)

6860 (SOC 6860) Organized Crime: Its History and Social Structure. Cr. 3

Prereq: CRJ 3850 or SOC 3820. Open only to juniors, seniors and graduate students. Analysis of the history and social structure of organized crime. Contemporary national and international forms of criminal enterprises. (B)

7010 Contemporary Criminal Justice. Cr. 3

Survey of classic literature and important contemporary studies of all major facets of criminal justice system, including law, police, prosecution, defense, judiciary, probation, corrections, and parole. (B)

7050 Deviant Behavior and Social Control. (SOC 7060) Cr. 3

Description and explanation of selected types of deviant/criminal behavior. Review of selected efforts at controlling deviant/criminal behavior. (Y)

7200 Public Policy and the Criminal Justice System. Cr. 3

Analysis of interrelationship of criminal justice system components and the political setting surrounding the formulation and administration of public policies for crime control. (I)

7990 Directed Study. Cr. 1-3

Prereq: 24 graduate credits in major and written consent of adviser. (T)

7999 Master's Essay Direction. Cr. 1-3

Prereq: written consent of adviser. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8

Prereq: written consent of adviser. (T)

ECONOMICS

Office: 2074 Faculty/Administration Bldg.; 577-3345; Fax: 577-0149
Chairperson: Robert J. Rossana
Administrative Assistant: Delores G. Tennille
Web Site: www.econ.wayne.edu

Professors

Ralph M. Braid, David I. Fand (Emeritus), Thomas J. Finn, Jr. (Emeritus), Allen C. Goodman, I. Bernard Goodman (Emeritus), Mark L. Kahn (Emeritus), Li Way Lee, Jay H. Levin, John M. Mattila (Emeritus), John D. Owen (Emeritus), Karl Roskamp (Emeritus), Robert J. Rossana

Associate Professors

R. King Adamson (Emeritus), Kevin D. Cotter, Gail A. Jensen, Stephen J. Spurr

Assistant Professors

Basma Bekdache, Julie Hunsaker, Panagiotis Mavros

Graduate Degrees

MASTER OF ARTS with a major in Economics

DOCTOR OF PHILOSOPHY with a major in Economics

(Also see *MASTER OF URBAN PLANNING with specialization in economics, under Urban Planning, page 426; and Master of Arts in Industrial Relations, under Industrial Relations, page 430.*)

Economists should have broad intellectual interests as well as technical expertise. The Department encourages applications from students with strong quantitative skills, regardless of undergraduate major. Accordingly, the Department sets minimal course prerequisites for its graduate programs.

The M.A. in Economics is frequently a terminal degree leading to careers in business, public service, or junior college teaching. Because many master's students study part-time, the Department schedules the core courses in the evening.

The M.A. Program in Industrial Relations (M.A.I.R.) is also oriented toward students with full-time jobs. Sponsored jointly by the Departments of Economics, Psychology, and Management, the program prepares students for careers in industrial relations, focusing on the structure and process of collective bargaining. M.A.I.R. is described on page 430.

The Ph.D. curriculum provides thorough training for professional economists through course work, tutorials and research workshops. It gives students a solid foundation in economic theory and econometrics and offers a wide choice of specializations. Because the program is rigorous and adheres to strict timetables, it is not advisable to combine doctoral study with full-time employment. About two-thirds of the Department's Ph.D. graduates hold academic positions; one-third choose careers in business, research organizations or government.

Master of Arts With a Major in Economics

Director: Kevin D. Cotter

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Applicants to this program must hold a bachelor's degree, with an undergraduate honor point average of at least 3.0 for regular admission. Exceptions may be authorized only by the Department's Admissions Committee. Applicants from other countries must demonstrate English profi-

ciency by obtaining a satisfactory score on the Test of English as a Foreign Language (TOEFL).

Applicants are expected to have completed the following courses or their equivalents as undergraduate or post-bachelor students:

ECO 5000..... Intermediate Microeconomics
ECO 5050..... Intermediate Macroeconomics
ECO 5100..... Introductory Statistics and Econometrics
MAT 2010 or other introductory course in differential and integral calculus.

Students may earn graduate credit for only one of these 5000-level prerequisite courses. One of the prerequisites may be completed following regular admission.

DEGREE REQUIREMENTS: The Department of Economics offers the Master of Arts degree under Plan C, as described below. With the approval of the M.A. program adviser, the student must choose this option when filing a *Plan of Work*. All course work must be completed in accordance with the academic procedures of the College and the Graduate School governing graduate scholarship and degrees; see pages 204-206 and 16-30, respectively.

Plan C: *Thirty-two graduate credits are required.*

Economics 6000, 6050, and 6100 or the equivalent must be elected. At least eight credits, exclusive of Economics 7996, must be completed at the 7000- or 8000-level. Neither a thesis nor an essay is required under this plan. A final written examination is required.

Candidacy: To be eligible for candidacy, the student must file a *Plan of Work*, approved by the master's program adviser, with the graduate officer of the College of Liberal Arts. (Candidacy will not be authorized unless the applicant's honor point average is 3.0 or better.) Students enrolled in master's degree programs are expected to file a *Plan of Work* by the time eight to twelve graduate credits have been earned.

Doctor of Philosophy with a Major in Economics

Director: Stephen J. Spurr

The Ph.D. is a scholarly degree. It indicates not only a superior knowledge of economics, but also intellectual initiative and an ability to design and carry out independent research. Students are judged on the basis of these attributes as well as on their performances in the classroom and in qualifying examinations. Doctoral students are required to attend the Department's faculty-student workshops and are encouraged to present research papers at these meetings.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Applicants to this program must hold a bachelor's degree and have an honor point average of at least 3.0. Applicants must include verbal, quantitative and analytical Graduate Record Examination scores and three letters of recommendation from officials or teaching staff of the institution(s) most recently attended. Applicants from other countries must demonstrate English proficiency by obtaining a satisfactory score on the Test of English as a Foreign Language (TOEFL).

Applicants are expected to have completed the following courses or their equivalents as undergraduates or post-bachelor students:

ECO 5000..... Intermediate Microeconomics
ECO 5050..... Intermediate Macroeconomics
ECO 5100..... Introductory Statistics and Econometrics
MAT 2010..... Calculus I

DEGREE REQUIREMENTS: Ph.D. students in economics must successfully complete ninety credits in graduate study, consisting of sixty credits in course work and thirty credits in dissertation research. All course work must be completed in accordance with the academic procedures of the College and the Graduate School governing graduate scholarship and degrees; see pages 204-206 and 16-30, respectively. Advancement to candidacy will require at least three years of full-time study beyond the bachelor's degree and is granted upon completion of the following requirements:

1. Completion of a *Plan of Work*, which must be approved by the Chairperson of the Graduate Committee in Economics and by the

Dean of the Graduate School. The *Plan of Work* must be filed by the completion of the first year of doctoral study.

2. Special proficiency in economic theory (ECO 7020, 7000, 7010, 7050, 7060) and in two of the following six fields: industrial organization; international economics; labor and human resources economics; health economics; urban/public economics; and monetary economics. Proficiency must be demonstrated by successful completion of the written qualifying examinations in economic theory and the two other selected fields.

3. Demonstration of basic competence in quantitative methods (Economics 7100 and 7110).

4. An oral examination on research.

5. Completion of a Doctoral Dissertation Outline and Record of Approval. This form must be approved by the student's dissertation advisory committee, the Chairperson of the Graduate Committee in Economics, and the Dean of the Graduate School.

Minor Requirements: Students must complete at least eight credits in a minor field outside economics, subject to the approval of the Chairperson of the Graduate Committee.

The Doctoral Dissertation: The doctoral candidate is required to submit a doctoral dissertation on a topic satisfactory to his/her Faculty Dissertation Committee and designed to test his/her proficiency in economic analysis.

Final Lecture: Upon acceptance of the dissertation, the student will deliver a final lecture in accordance with Graduate School procedures.

Fellowships, Assistantships and Awards

General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 30 of this bulletin.

Teaching and research assistantships providing tuition, stipends and health insurance are available each year to highly qualified graduate students. Fellowships and tuition scholarships are also available. Preference in selection for these positions and stipends is given to doctoral students. Applications for Fall Semester appointments with financial aid should reach the Department by March 15; later applications will be considered if positions are available. Applications must include verbal, quantitative, and analytical Graduate Record Examination scores and three letters of recommendation from officials or teaching staff at the institution(s) most recently attended. Applicants from other countries must also demonstrate proficiency in spoken English before being assigned to teaching duties.

The Department encourages its graduate students to compete for the fellowships and scholarships awarded by the Graduate School (see page 33), foundations, professional organizations, government units, and corporations.

Two departmental awards have been created to encourage research and publication in economics: the *Samuel M. Levin Essay Award* for the best research paper includes a prize of \$1000; the *Mendelson Research Grants* provide summer stipends of \$1500 to selected doctoral students working on their dissertations.

GRADUATE COURSES (ECO)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

Field A — Economic Theory

5000 Intermediate Microeconomics. Cr. 4

Prereq: ECO 2010, MAT 1500 or MAT 1800 or equiv. based on satisfactory score on mathematics placement examination. Theory of the firm and consumer. Analysis of a price system as a means to efficient allocation of productive resources. (T)

5020 Fundamentals of Economic Analysis. (ECO 7020) Cr. 4

Prereq: ECO 5000 and MAT 2010 or MAT 5010 or equiv. ECO 5020 offered for undergraduate credit only; ECO 7020 offered for graduate credit only. Basic mathematical methods applied to economic analysis, including applications of differential and integral calculus, analytical geometry, and linear algebra. Problems used to illustrate applications in microeconomics and macroeconomics. (F)

5050 Intermediate Macroeconomics. Cr. 4

Prereq: ECO 2020, MAT 1500 or MAT 1800 or equiv. based on satisfactory score on mathematics placement examination. Theory of national income determination. National output and income, saving and capital formation. (T)

6000 Price and Allocation Theory. Cr. 4

Prereq: ECO 5000 or equiv.; MAT 2010 or equiv. Introduction to the theory of consumer choice and the theory of production, and other selected topics. Primarily for M.A. students and for Ph.D. students who want to review. (F)

6050 Macroeconomics. Cr. 4

Prereq: ECO 5050 or equiv. No credit after ECO 7050. Determination of national income, unemployment and interest rates; theories of inflation; effectiveness of macroeconomic public policies. Primarily for M.A. students and for Ph.D. students who want to review. (W)

6450 Economic Analysis and Public Administration. Cr. 3

No major or minor credit in economics. Basic tools of microeconomic analysis; decision-making by individuals, firms (including government regulation), collectivities (including benefit-cost analysis). Application of analysis to areas of public administration, such as: aging, health care, education, pollution, discrimination, income stabilization, industrial policy, other long-term policy issues. (S)

7000 Microeconomic Theory I. Cr. 4

Prereq: ECO 5000, 7020; MAT 2010 or MAT 5010 or equiv. Theory of choice; theory of cost and production; theory of the competitive firm. Price and output in non-competitive markets. General competitive equilibrium and welfare economics. (W)

7010 Microeconomic Theory II. Cr. 4

Prereq: ECO 7000. Continuation of ECO 7000. (F)

7020 (ECO 5020) Fundamentals of Economic Analysis. Cr. 4

Prereq: ECO 5000 and MAT 2010 or MAT 5010 or equiv. ECO 5020 offered for undergraduate credit only; ECO 7020 offered for graduate credit only. Basic mathematical methods applied to economic analysis, including applications of calculus, analytical geometry, and linear algebra. Problems to illustrate applications in microeconomics and macroeconomics. (F)

7050 Macroeconomic Theory I. Cr. 4

Prereq: ECO 5050 or equiv. Determination of national income, employment, interest rates and the price level; static and dynamic models; cycle and growth models; classic, Keynesian and neo-Keynesian models. (F)

7060 Macroeconomic Theory II. Cr. 4

Prereq: ECO 7050 or equiv. Continuation of ECO 7050. (W)

8050 Dissertation Workshop in Economic Theory.
Cr. 4 (Max. 8)

Prereq: completion of qualifying examinations in economic theory. Offered for S and U grades only. Evaluations of proposed and current research in micro- or macroeconomic theory, or both. Topics to be announced in Schedule of Classes. (T)

Field B — Quantitative Methods

5100 Introductory Statistics and Econometrics. Cr. 4

Prereq: ECO 2010, 2020; MAT 1500 or MAT 1800 or equiv. based on satisfactory score on mathematics placement examination. Preliminary data analysis; simple regression; multiple regression; probability and statistics; inference in multiple regression; generalized regression. (T)

6100 Introduction to Econometrics. Cr. 4

Prereq: ECO 5050 and 5100 or consent of instructor. Application of statistics and mathematics to the quantitative analysis of the position of and changes in the economy as a whole. Typical problems formulated as testable hypotheses. Models of the economy analyzed. (F)

7100 Econometrics I. Cr. 4

Prereq: ECO 7020 or consent of instructor. Probability; random variables, frequency distributions; hypothesis testing, estimation and properties of estimators. Estimating the classical linear model using ordinary least squares, maximum likelihood, and best linear unbiased estimators. Best linear unbiased estimators when relaxing classical assumptions. (F)

7110 Econometrics II. Cr. 4

Prereq: ECO 7100 or consent of instructor. Autocorrelation, heteroscedasticity, Koyck and Almon distributed lag models, multicollinearity, specification analysis, testing the equality of sets of coefficients, dummy variables, pooling of time series and cross-section data, error in variable models, mixed estimation, missing observations, grouping of data. Simultaneous equation systems. (W)

Field C — Industrial Organization

5200 Regulation and Regulated Industries. Cr. 4

Prereq: ECO 2010. Public regulation of prices, profits, service, and entry in industries such as electrical power, natural gas, telephones, broadcasting, and transportation; the rationale for having public regulation, and the analysis of its economic effects; reform of the scope and practice of regulation; public ownership; regulation of occupational and product safety standards and environmental standards. (Y)

5210 Market Power and Economic Welfare. Cr. 4

Prereq: ECO 2010. Monopoly, oligopoly, and competition in U.S. industry; sources of market power and their effect on prices, profits, and technological progress, as illustrated by such industries as steel, automobiles, petroleum, retailing, or prescription drugs. Selected topics in antitrust policy. (Y)

5250 Economic Analysis of Law. Cr. 4

Prereq: ECO 2010. Economic analysis of property rights, torts, contracts, criminal law, the law of business organizations and financial markets, and the law of taxation. Economic analysis of litigation; the use of economics and statistics in litigation. (Y)

7200 Industrial Organization I. Cr. 4

Prereq: ECO 6000 or consent of instructor. Theories of competition and market power. Topics include concentration, scale economies, product differentiation, entry barriers, collusion, mergers, price discrimination, information, and advertising. (B)

7210 Industrial Organization II. Cr. 4

Prereq: ECO 6000 or consent of instructor. Economic analysis of antitrust policy and public regulation of industry. Rationale for regulation and mandates of various regulatory agencies. Problems in public utility rate-making. Misallocations induced by regulation. Role of competition in regulated industries. (B)

8250 Dissertation Workshop in Industrial Organization.
Cr. 4 (Max. 8)

Prereq: completion of qualifying examination in industrial organization. Offered for S and U grades only. Evaluations of proposed and current research in industrial organization. (T)

Field D — International Economics

5300 International Trade. Cr. 4

Prereq: ECO 2010. Factors in international economic relations; patterns of international specialization; balance of international payments; foreign exchange; commercial policy of the United States and other countries; foreign investment and economic development; international economic cooperation. (F)

5310 International Finance. Cr. 4

Prereq: ECO 2010. Major policy issues in the field of international finance with emphasis on open economy macroeconomics. Topics include the balance of payments and the foreign exchange market; monetary and fiscal policies in open economies; the floating exchange rate system; international financial markets; the European monetary system; the Third World debt problem; and proposals to reform the international monetary system. (W)

7300 Advanced International Trade Theory. Cr. 4

Prereq: ECO 6000 or consent of instructor. The theory of international trade and commercial policy: classical and modern models of the determinants of international trade and their empirical verification; welfare aspects of trade and trade intervention; customs union theory; effective protection. (B)

7310 Advanced International Monetary Theory. Cr. 4

Prereq: ECO 6000 or consent of instructor. Foreign exchange rate and balance of payments adjustment theory under alternative exchange rate regimes; stabilization policies in open economies; financial capital movements; monetary unions; economic growth and the balance of payments. (B)

7370 International Trade, Investment and Labor Markets.
Cr. 3

Study of world economies; theories of labor and trade economics applied to the North American economy and the flow of labor, goods, services and capital within and across America and other economies. (W)

8350 Dissertation Workshop in International Economics.
Cr. 4 (Max. 8)

Prereq: completion of qualifying examination in international economics. Offered for S and U grades only. Evaluations of proposed and current research in international economics. (T)

Field E — Labor and Human Resources

5490 American Labor History. (HIS 5290) (HIS 7290) Cr. 4

Prereq: ECO 2010 or consent of instructor. Development of the American labor movement; its behavior in the contemporary scene. Labor's experiments with social, political, legal, and economic institutions. Comparisons with foreign labor movements. (B)

6410 Labor Markets. Cr. 4

Prereq: ECO 2010. Labor supply; causes of and remedies for unemployment; labor mobility and the operation of labor markets; productivity and real wages; wage determination; human capital, income distribution, and economic development; poverty and its causes; economic impact of collective bargaining. (Y)

6420 Labor Relations Institutions and Public Policy. Cr. 3

Prereq: ECO 2010 or graduate standing. Overview of labor force trends; U.S. unionism; management of labor relations; collective bargaining: procedure and substance; bargaining power in the private and public sectors. Comparative trends and principles in industrial relations systems of other societies also examined. (F,S)

7400 Labor Economics and Human Resources. Cr. 4

Prereq: ECO 5000 and 5050 or consent of instructor. Labor force participation and composition; factors affecting wage levels (money and real) and wage structure. Theoretical and empirical analyses of occupational choice, labor mobility, and income inequality. (B)

7410 Human Resources, Labor Markets, and Public Policy. Cr. 4

Prereq: ECO 6000 and 6100 or consent of instructor. Theoretical and empirical analyses of aggregate labor supply and demand and of investment in human capital. Evaluation of education, manpower, health, and welfare programs. (B)

7430 (AFS 6430) Economics of Inequality. Cr. 4

Prereq: upper division or graduate standing. Not for Economics Ph.D. field credit. Theoretical and empirical analysis of sources of income inequality in the U.S. economy. (Y)

7470 Economic Factors in Industrial Relations. Cr. 3

Prereq: ECO 1020 and 5100 or consent of instructor. Wage determination under collective bargaining: key bargains, patterns, orbits of coercive comparison. Application of wage criteria in negotiations, fact-finding, and interest arbitration. Fringe benefits vs. cash earnings. Estimating costs of contract changes. Designed mainly for students in M.A.I.R. program; doctoral students in Economics who wish to take this course must have the consent of the Ph.D. adviser in economics. (W)

7490 (I R 8500) Strategic Analysis of North American Labor and Human Resource Issues. Cr. 3

Prereq. for MAIR students: all core courses, must be taken in last nine credits of program. Open only to M.A.I.R. students. Strategic labor and human resource analysis in the micro (game theory) and macro (planning) levels. Integration of MAIR program skills. Student teams work as consultants for a client organization on a strategic labor or human resource problem. (W)

8450 Dissertation Workshop in Labor and Human Resources Economics. Cr. 4 (Max. 8)

Prereq: completion of qualifying examination in labor and human resources economics. Offered for S and U grades only. Evaluations of proposed and current research in labor and human resources economics. (T)

Field F — Public Finance**5500 Public Finance: Taxation and Expenditure Theory. Cr. 4**

Prereq: ECO 2010 or consent of instructor. Role of government in a market economy: sources of market failure--public goods and externalities; principles of taxation and expenditures; tax incidence; federal tax structure; selected government expenditure programs. (S,F)

5510 Public Choice. Cr. 4

Prereq: ECO 2010 or consent of instructor. Decision-making process of government; cost benefit analysis; voting rules--majority voting and alternatives; theories of representative democracy; theory of bureaucracy; theory of rent seeking; government as Leviathan. (W)

5520 State and Local Public Finance. (U P 6750) Cr. 4

Prereq: ECO 2010 or consent of instructor. Theory and practice of state and local government taxation and expenditure. Attention devoted to State of Michigan and municipalities in Detroit metropolitan area. Topics include: government organization, voting and mobility models, property and sales taxes, user charges, grants, education expenditure, and economic development. (W)

5550 Economics of Health Care. Cr. 4

Prereq: ECO 2010. Allocation of health care resources, with respect to demand and supply of health care. Roles of hospitals, physicians, and health insurance; market imperfections and their role in economics of health care. (Y)

7500 Public Finance I. Cr. 4

Prereq: ECO 5510 or consent of instructor. Problems of budgeting, public choice, government expenditure, incidence shifting, tax effects, national debt, stabilization and economic growth. (B)

7510 Public Finance II. Cr. 4

Prereq: ECO 5510 or consent of instructor. Continuation of ECO 7500; research problems in public finance. (B)

7550 (C M 7400) Economics of Health Care I. Cr. 3-4

Prereq: ECO 6000 or consent of instructor. No credit after ECO 5550. Offered for four credits only to economics students. Analytically rigorous examination of the allocation of health care resources. Additional analyses of the economics of information and the role of advertising. Required of all M.S. students in Community Health Services program. (B)

7560 Economics of Health Care II. Cr. 4

Prereq: ECO 6000 or consent of instructor. No credit after ECO 5550. Particular roles of hospitals, physicians, and health insurance. Analysis of government policies. (B)

8550 Dissertation Workshop in Public Finance. Cr. 4 (Max. 8)

Prereq: completion of qualifying examination in public finance. Offered for S and U grades only. Evaluations of proposed and current research in public finance. (T)

Field G — Economic Development**5600 Introduction to Development Economics. Cr. 4**

Prereq: ECO 2010 or consent of instructor. National poverty and economic growth viewed from an historical and theoretical perspective; particular emphasis on national and international policies. (Y)

6650 (ULM 6210) Regional, State, and Urban Economic Development: Policy and Administration. (P S 6440) (U P 6550) Cr. 3

Prereq: graduate standing. Examination of regional, state, and local economic development theory, analysis, policy and administration. (B)

Field H — Monetary Economics**5700 Money and Banking. Cr. 4**

Prereq: ECO 2010. Role of the Federal Reserve System, the commercial banks, and the non-bank public (including financial intermediaries) in determining the money supply; central banking and techniques of monetary control; indicators and targets of monetary policy; and how money affects economic activity. (F,W)

7700 Monetary Economics I. Cr. 4

Prereq: ECO 6000 or consent of instructor. Objectives, mechanisms, economic effects of alternative monetary and banking policies; interrelations of the latter with fiscal policies. Recent American and foreign experience, proposed changes in domestic monetary and banking structure, relation of monetary and banking structures, relation of monetary policy to business fluctuations, problems arising from the International Monetary Fund and Bank. (B)

7710 Monetary Economics II. Cr. 4

Prereq: ECO 6000 or consent of instructor. Development of monetary theory; present theories of relations between money, prices, and national income; methods of monetary control employed by government authorities; current controversies. (B)

8750 Dissertation Workshop in Monetary Economics. Cr. 4 (Max. 8)

Prereq: completion of qualifying examination in monetary economics. Offered for S and U grades only. Evaluations of proposed and current research in monetary economics. (T)

Field I — Urban and Regional Economics**5800 Urban and Regional Economics I. (U P 5820) Cr. 4**

Prereq: ECO 2010 or consent of instructor. Introduction to the economic foundations of urban problems; land use, housing, poverty, transportation, local public finance; regional industry mix, income, growth and development; the national system of cities and location of firms. (Y)

6810 (ULM 6150) Political Economy of the Urban Ghetto. (SOC 6850) (U P 6670) Cr. 3

Prereq: graduate standing; upper division undergraduates by consent of instructor. Examination of the economic, social and political transformation of U.S. cities; particular attention to the formation, dynamics, economics and social sub-systems of urban ghettos and their relationship to broader contexts. (B)

7800 Urban/Public Economics I. Cr. 4

Prereq: ECO 6000 or consent of instructor. The city as an economic system, including rents, prices, and locations of activities. Monocentric and polycentric models. Topics include housing and real estate, industrial location, and racial segregation and discrimination. Economic theory and empirical applications will be presented. (B)

7810 Urban/Public Economics II. Cr. 4

Prereq: ECO 6000 or consent of instructor. Spatial competition (equilibrium prices and locations of firms or stores). Theory of public goods. Externalities. Taxation from the standpoint of efficiency and income distribution. Effects of taxation on labor supply and savings. Theoretical and applied models of local public finance. Tax competition between local governments. Transportation economics. (B)

Directed Readings, Thesis Direction and Special Courses

7996 Research in Economics. Cr. 2-8 (Max. 16)

Prereq: consent of adviser. Open to qualified students who desire opportunity for research and directed study. May be conducted as seminar. (T)

7999 Master's Essay Direction. Cr. 1-3 (3 req.)

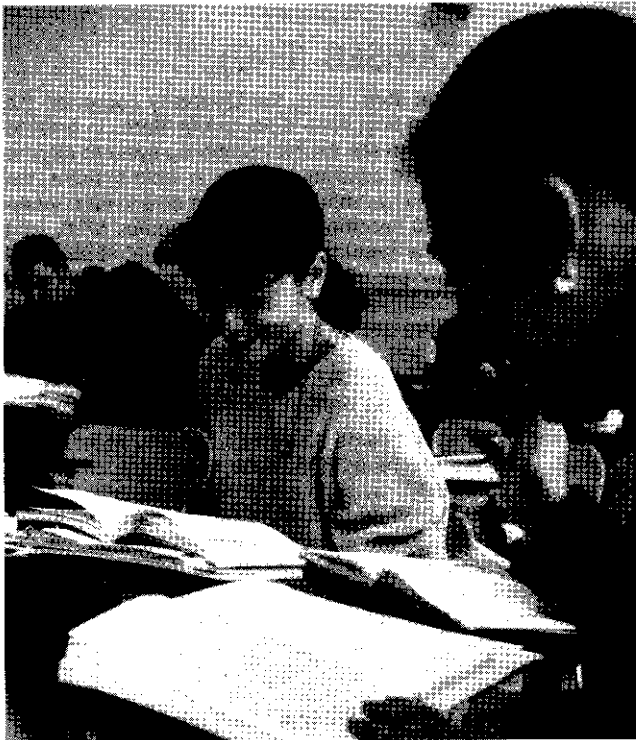
Prereq: consent of adviser. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of adviser. (T)

9999 Doctoral Dissertation and Research. Cr. 1-16 (30 req.)

Prereq: consent of doctoral adviser. Offered for S and U grades only. (T)



ENGLISH

Office: Room 1200, 51 West Warren; 577-2450
Chairperson: Robert Burgoyne
Academic Services Officer: Margaret M. Maday

Professors

Lesley Brill, Robert Burgoyne, Barbara A. Couture, Walter F. Edwards, Henry L. Golemba, Jerry Herron, Donna Landry, Christopher T. Leland, Kathyne Lindberg, Gerald MacLean, Arthur F. Marotti, Sondra A. O'Neale, Herman Rapaport, John R. Reed, Michael H. Scrivener, Anca Vlasopolos, Renata M. Wasserman

Associate Professors

Anthony Aristar, Ellen Barton, Cynthia Erb, William Harris, Janet C. Langlois, Bernard Levine, Ljiljana Progovac, Ross J. Pudaloff, Martha Ratliff, Ruth E. Ray, Elizabeth S. Sklar

Assistant Professors

Robert Aguirre, Gwen Gorzelsky, Margaret Jordan, Alison Landsberg, Sheila Lloyd, Richard C. Marback, Bruce S. Morgan, Yvonne Paschal, Frances Ranney, Barrett Watten

Graduate Degrees

MASTER OF ARTS with a major in English

MASTER OF ARTS in Comparative Literature

DOCTOR OF PHILOSOPHY with a major in English

The graduate programs of the English Department offer advanced study in bibliographical and textual studies, comparative literature, composition and rhetoric, creative writing, cultural studies, film studies, folklore, gender studies, linguistics, literature (including African-American, Irish, postcolonial, and other literatures in English), popular culture and cultural studies, and women's studies. Applicants for the M.A. degree may pursue special interests by satisfying the requirements in one of the two writing-emphasis programs, or by taking appropriate course work in the areas mentioned. The proportion of the total program devoted to such areas, however, will vary according to the strength of the student's background in English and American literature, as determined by the Graduate Director. The Ph.D. programs are designed to develop the applicant's potential as a scholar, critic, and teacher of language and literature. Emphases in the Doctor of Philosophy program include American literature, composition and rhetoric, critical theory, cultural studies, English literature, film studies, popular culture and cultural studies, and women's studies.

Master of Arts With a Major in English

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Students who wish to register as graduate majors in English should consult the departmental Graduate Director, but submit their formal application to the Graduate Admissions Office. An applicant who does not have an undergraduate major or a strong minor in English may be asked to take courses as prerequisites before receiving credits toward the master's degree. The General Test of the Graduate Record Examination is required for all applicants prior to admission. The Subject Test of the Graduate Record Examination is recommended for all applicants, especially for those whose achievement in English may not be fairly represented by the undergraduate honor point average. All applicants are additionally required to submit a writing sample, a statement of purpose, and at least two letters of recommendation.

DEGREE REQUIREMENTS: The Master of Arts degree is offered as a Plan A or Plan B option. All course work must be completed in accordance with the academic procedures of the College and the Graduate School governing graduate scholarship and degrees; see pages 204-206 and 16-30, respectively.

Plan A: *Thirty-three credits, including an eight-credit thesis.*

Plan B: *Thirty-three credits, including a three-credit essay.*

Major Requirements: The student's graduate program should be planned to supplement undergraduate preparation so that he/she will have knowledge of literature and of critical approaches to literary and cultural studies, in addition to special interests such as writing, linguistics, or film. Outside this general requirement, each individual program can accommodate particular interests and needs. It must include, however, at least five graduate (7000-level) seminars, and the essay or thesis. The remaining courses may be at the 5000, 6000, or 7000 level.

Comparative Literature: For course requirements, see p. 214

Writing Emphasis Curriculum: This M.A. program is for students who wish to specialize in either creative or technical writing. The program is career oriented, but flexible enough to prepare students for a variety of options. *Plan A* (twenty-five credits of course work plus an eight-credit thesis) may be used for the creative writing emphasis; *Plan B* (twenty-seven credits in course work, a three-credit internship, and a three-credit essay) is required for the technical emphasis.

Foreign Language Requirement: Students are required to have a reading knowledge of at least one foreign language. Students may demonstrate a competence in a variety of ways; for further details, consult the English Department.

Doctor of Philosophy With a Major in English

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Admission to the doctoral program in English is open to superior students who may apply to the Ph.D. program with either a bachelor's or a master's degree. Application credentials should be filed in the Graduate School not less than three, and preferably five, months before the applicant plans to register for doctoral work. The applicant must also address a letter to the Department's Graduate Director indicating his/her educational history, interests, reading, aptitudes, and other matters which will enable the committee to evaluate the student's ability and qualifications. The General Test and the Subject Test of the Graduate Record Examination are required, as are samples of the student's scholarly and critical writing. At least two letters of recommendation are required.

DEGREE REQUIREMENTS: The Doctor of Philosophy requires ninety credits beyond the baccalaureate degree, thirty of which must be earned as dissertation credits. All course work must be completed in accordance with the academic procedures of the College and the Graduate School governing graduate scholarship and degrees; see pages 204-206 and 16-30 respectively.

Course Requirements: Students will take their course work in the graduate seminars (7000-level) and the advanced graduate seminars (8000-level); a minimum of two advanced seminars is required. Specific course work is chosen in consultation with faculty so that the most appropriate sequence of courses will prepare students adequately in their particular fields of expertise.

Cognate: The University requires a minor of at least eight credits in course work outside the department. A student has an opportunity to develop an interdisciplinary focus to enhance his or her overall program in one of numerous areas, including but not limited to American studies, anthropology, art history, film studies, foreign literatures, history, linguistics, and psychology.

Foreign Language Requirement: Students are required to have a reading knowledge of at least one foreign language. Students may demonstrate a competence in a variety of ways; for further details, consult the English Department.

Final Qualifying Examination: The examination must be taken within one calendar year after the completion of course work.

A final Public Lecture Presentation-Defense, after the dissertation has been completed, is also required. For a description of this, see page 29.

For further details concerning examinations and requirements, please contact the English Department.

Financial Aid

General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 30 of this bulletin.

Albert Feigenson Endowed Memorial Scholarship: Award open to full-time students majoring in music or English, with high scholastic standing and demonstrated financial need. Application deadline is April 1; contact the English Department and the Office of Scholarships and Financial Aid.

The Loughhead-Eldredge Endowed Scholarships in Creative Writing: Two scholarships of approximately \$2000 per year are available to M.A. students in creative writing who are in good academic standing and are enrolled for at least six credits. Application deadline is April 1.

Doretta Burke Sheill Endowed Memorial Scholarship: Award open to students majoring in English with high scholastic achievement, character, leadership, and financial need. Application deadline is April 1; contact the English Department and the Office of Scholarships and Financial Aid.

Stephen H. Tudor Memorial Scholarship in Creative Writing: Award open to full-time degree-seeking students majoring in English who have completed at least fifteen credits in residence and demonstrate high achievement in creative writing. Application deadline is April 1; contact the English Department for details.

Assistantships: A number of departmental teaching assistantships are available to doctoral students and to M.A. students who intend to pursue doctoral studies. Inquiries and applications should be addressed to the Graduate Director of the Department.

GRADUATE COURSES (ENG)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

5010 Advanced Expository Writing. Cr. 3 (Max. 6)

Prereq: grade of B or better in an intermediate writing course or consent of instructor. Advanced study and practice in various forms of expository prose, especially the essay. Topics to be announced in Schedule of Classes. (Y)

**5030 Topics in Women's Studies. (W S 5030)
Cr. 3 (Max. 9)**

Thematic, critical or generic study of women and literature. Topics to be announced in Schedule of Classes. (Y)

5040 Film Criticism and Theory. (FLM 5040) Cr. 4

Prereq: ENG 2450 or another film course or consent of instructor. Survey of the major film theories from Munsterberg to contemporary film semiotics; examination of various attempts made at a systematic understanding of the cinema. Material fee as indicated in the Schedule of Classes. (Y)

5050 Concepts in Film Studies. (FLM 5050) Cr. 3-4 (Max. 12)

May not be elected more than three times. Specific movements or tendencies in film historiography. Topics to be announced in Schedule of Classes. Material fee as indicated in the Schedule of Classes. (B)

5060 Styles and Genres in Film. (FLM 5060) Cr. 4 (Max. 12)

Study of significant works within selected genres: the western, the horror film, comedies. Emphasis on styles of particular directors. Topics to be announced in Schedule of Classes. Material fee as indicated in the Schedule of Classes. (Y)

5070 Topics in Film. (FLM 5070) Cr. 4 (Max. 12)

Topics (such as film and fusion of the arts) to be announced in Schedule of Classes. Material fee as indicated in the Schedule of Classes. (Y)

**5080 Topics in Cross-Disciplinary and Cultural Studies.
Cr. 3 (Max. 9)**

Study of cultural formations and practices from comparative and interdisciplinary perspectives furnished by history, semiotics, anthropology, linguistics, sociology, feminism, psychoanalysis, rhetoric, etc. Topics to be announced in Schedule of Classes. Required of English majors, but one may substitute another course in cross-disciplinary or comparative studies. (Y)

5090 Topics in Literary and Cultural Theory. Cr. 3 (Max. 9)

Study of literary and cultural theory in various contexts -- urban, metropolitan, ethnic, global -- with reference to primary texts. Topics to be announced in Schedule of Classes. Required of English majors; another theory course may be substituted. (Y)

5100 Literature of the Middle Ages. Cr. 3

Readings in Old and Middle English literature (900-1500), mostly in translation. Topics to be announced in Schedule of Classes. (I)

5110 Chaucer. Cr. 3

Readings from *The Canterbury Tales* and from Chaucer's other works in cultural context. (I)

5120 Topics in Medieval Literature. Cr. 3 (Max. 9)

Themes, genres, writers in English and continental Medieval literature. Topics to be announced in Schedule of Classes. (I)

5140 Introduction to Old English. Cr. 3

The fundamentals of language and grammar and the literary analysis of Old English texts. (Y)

5150 Shakespeare. Cr. 3

For English majors and others interested in more intensive study than is offered in ENG 2200. Some attention to Shakespearean scholarship. (Y)

5160 Studies in Old English. Cr. 3-4 (Max. 12)

Prereq: ENG 5140 or 6100 or equiv. Selected topics such as *Beowulf*, poetry of the Exeter Book, gnomic literature, saints' lives. Topics to be announced in Schedule of Classes. (B)

5170 Literature of the English Renaissance: 1500-1660. Cr. 3

Survey of literature in all genres from Skelton through Milton, with an emphasis on non-dramatic poetry and prose. (B)

5180 Milton. Cr. 3

Emphasis on Milton's major poetry through attention to his prose and to historical background. (I)

5190 Topics in Renaissance Literature. Cr. 3 (Max. 9)

Studies of particular authors or groups of authors from 1500-1660 or of literary works from period, generic, thematic or methodological focuses. Topics to be announced in Schedule of Classes. (B)

5200 Restoration and Eighteenth Century Literature. Cr. 3

A survey of English literature from 1660 to 1784. Readings from authors such as John Dryden, Aphra Behn, Mary Astell, Alexander Pope, Lady Mary Montagu, Jonathan Swift. (B)

**5240 Topics in Restoration and Eighteenth Century Literature.
Cr. 3 (Max. 9)**

For students familiar with literary history of the period. Special topics for detailed study of a genre, movement or author to be announced in Schedule of Classes. (B)

5250 Nineteenth Century Literature. Cr. 3

A survey of nineteenth century British literature, with works selected from such authors as Wordsworth, Keats, Dickens, Carlyle, Tennyson, Swinburne and Hardy. (B)

5260 Literature of the Romantic Period. Cr. 3

A survey of English literature from 1789-1832. Emphasis on the major poets (Blake, Wordsworth, Coleridge, Keats, Shelley and Byron), with some attention to the major essayists (De Quincey, Hazlitt and Lamb) and novelists (Austen and Scott). (B)

5270 Literature of the Victorian Period. Cr. 3

A survey of English literature from 1832-1901. Emphasis on major poets (Tennyson, Arnold, Swinburne), novelists (Dickens, Eliot, Hardy), and prose writers (Carlyle and Ruskin). (B)

5290 Topics in Nineteenth Century Literature. Cr. 3 (Max. 9)

Readings emphasize thematic, generic, historic or aesthetic concerns in literature of the period. Topics to be announced in Schedule of Classes. (B)

5300 Twentieth Century British Literature. Cr. 3

Selected works in all genres from 1900 to the present. (B)

**5320 Topics in Twentieth Century British Literature.
Cr. 3 (Max. 9)**

Selected writers, themes, or genres, movements: Eliot, Auden, Shaw, Lawrence; the modern novel, Bloomsbury, The Great War, the 'Thirties. Topics to be announced in Schedule of Classes. (B)

5400 American Literature to 1800. Cr. 3

A survey of American literature from the beginnings through the early national period, emphasizing the constructions of crucial cultural phenomena like nation-building, colonialism, liberty and union, assimilation. (B)

5410 American Literature: 1800-1865. Cr. 3

Survey of writers, themes and movements which have had dramatic influence in defining American culture. Writers such as Dickinson, Douglass and Emerson, and literary movements like Transcendentalism and Romanticism are studied as well as the forces that produced them, especially race, class and gender. (Y)

5420 American Literature: 1865-1914. Cr. 3

Survey of important literary texts that arose from cultural phenomena like post-reconstruction, urbanization, immigration, the suffrage movement, and native rights. Literary movements like Realism and Naturalism will be studied as well as influential writers like Cahan, Chopin, Dreiser and Dunbar. (Y)

5450 Modern American Literature. Cr. 3

Survey of culturally-significant writers, themes and movements since 1914, such as: the Harlem Renaissance, Modernism, Postmodernism; authors like Ellison, Hemingway, Morrison, Stein. (Y)

**5460 Topics in American Literature of the Twentieth Century.
Cr. 3 (Max. 9)**

Twentieth century literature from specific perspectives, such as generic, historical, thematic. Topics to be announced in Schedule of Classes. (I)

5470 Survey of African-American Literature. Cr. 3

Historical survey of African-American literature from Colonial times through the twentieth century. (B)

5480 Topics in African-American Literature. Cr. 3 (Max. 9)

Thematic, generic or historical perspectives; topics such as early black writers, Harlem Renaissance, African-American poetry, contemporary black writers. Topics to be announced in Schedule of Classes. (B)

5490 Topics in American Literature. Cr. 3 (Max. 9)

Thematic, generic, or historical perspectives; may cover writers of different periods. Topics such as American humor, the theme of work, Southern literature, the city in literature. Topics to be announced in Schedule of Classes. (I)

5500 Topics in English and American Literature. Cr. 3 (Max. 9)

Generic, historical or thematic perspectives. Topics such as the romantic hero, the divided self in modern literature; to be announced in Schedule of Classes. (I)

5520 Irish Literature. Cr. 3

Major twentieth century Irish writers in the context of Irish history and politics: W.B. Yeats, James Joyce, major dramatists. (I)

5580 The Art of Translation. Cr. 3

Methods and theories of translation, analysis of distinguished literary translations and student practice. Required of all students in the Comparative Literature Program. (I)

5590 Topics in Comparative Literature. Cr. 3 (Max. 9)

The study of literary texts from an international point of view. Topics to be announced in Schedule of Classes. (B)

5600 Studies in Folklore. (ANT 6080) Cr. 3

Basic concepts, methods, and issues of folklore study. Comparative and interdisciplinary approach to problems of definition, form, creation, performance, transmission, and cultural, historical, psychological and literary significance. (B)

5650 Folklore and Literature. Cr. 3

Identification and analysis of the interrelations of folklore and literature. (B)

5670 Topics in Folklore and Folklife. Cr. 3 (Max. 9)

Topics such as fieldwork; analysis of collected oral literature; study of separate genres of oral literature, social folk custom, and folk arts. Topics to be announced in Schedule of Classes. (B)

5700 Introduction to Linguistic Theory. (LIN 5700) Cr. 3

Introduction to the scientific study of language and methodologies of linguistic analysis: phonetics and phonology, morphology, syntax, semantics, sociolinguistics, and pragmatics. Introduction to selected disciplinary and interdisciplinary topics: typology and universals, communication systems, psycholinguistics, sociolinguistics, historical linguistics, anthropological linguistics. (T)

5710 Phonology. (LIN 5290) Cr. 3

Prereq: ENG 5700 or LIN 5700. Basic introduction to articulatory phonetics; natural language sound systems and phonological processes studied through data analysis of phonological problems from a wide range of languages. (Y)

5720 Topics in Language. (LIN 5720) Cr. 3 (Max. 12)

Topics such as phonology, morphology, semantics, pragmatics, historical linguistics, history of English, pidgins and creoles, language variation. Topics to be announced in Schedule of Classes. (T)

5730 Traditional Grammar. (LIN 5730) Cr. 3

Comprehensive analysis of English sentence structure and parts of speech using the terminology and descriptive approach of traditional grammar. (T)

5740 Theory of Syntax. (LIN 5300) Cr. 3

Prereq: ENG 5700 or LIN 5700. The theory of grammatical systems examined through analysis of sentence and word formation in a vari-

ety of human languages. Diversity and universals in grammar discussed and various theories of syntax reviewed. (Y)

5750 Theory of English as a Second Language. (LIN 5750) Cr. 3

Detailed examination of theories of language and language acquisition relevant to the non-native speaker of English. Review of research in language acquisition and language learning. (B)

5760 American Dialects. (LIN 5760) Cr. 3

Survey of chief social and geographic dialects of American English and introduction to theory of language variation. (I)

5770 Sociolinguistics. (LIN 5770) Cr. 3

Identification of sociolinguistic principles used by English speakers and writers in choosing among the different English codes, styles, registers and social dialects in American and other communities. (B)

5780 Approaches to Technical and Professional Writing. Cr. 3

Survey of the theory and practice of technical and professional communication. Topics include the rhetoric and teaching of technical communication, analysis of on-the-job writing and rhetorical situations, and use of new communications technology. Some technical report writing, a research paper, and extensive reading and writing. (B)

5790 Writing Theory. Cr. 3

Review of linguistic, rhetorical, and/or literary theories of written language. Analysis of the principles, purposes, types, and modes of written discourse. Course includes extensive reading and writing. (B)

5820 Internship Practicum. Cr. 3 (Max. 6)

Undergrad. prereq: junior or senior standing, written consent of internship director; grad. prereq: written consent of graduate director. Students work 18-20 hours per week as writers, editors or researchers in publishing firms and in public information and research divisions of other businesses and community organizations; students meet once per week in classroom sessions on analytical, literary and other scholarly texts related to their workplace experience. (T)

5830 Introduction to Technical and Professional Writing. Cr. 3

Prereq: grade of B or better in intermediate writing course or consent of instructor. Intensive writing course that develops communication skills used in the workplace. Designed for students preparing to become technical writers/editors and students who will write as part of their professional work. (B)

5870 Poetry Writing Workshop. Cr. 3 (Max. 6)

Prereq: ENG 3810, 3820, or 3830; or consent of instructor after submission of manuscript. The writing of poetry, conducted on a seminar basis; discussion and criticism of the work of students in the course. Frequent individual conferences. (Y)

5880 Fiction Writing Workshop. Cr. 3 (Max. 6)

Prereq: ENG 3810, 3820, or 3830; or consent of instructor after submission of manuscript. The writing of fiction, conducted on a seminar basis; discussion and criticism of the work of students in the course. Frequent individual conferences. (Y)

5890 Writing for Theatre. (THR 5130) Cr. 3 (Max. 6)

Prereq: ENG 3830 or consent of instructor. Advanced study, in a workshop setting, of dramatic structure and writing for the theatre, terminating in the writing of an original stage play. (Y)

5990 Directed Study. Cr. 1-3 (Max. 6)

Undergrad. prereq: 3.0 h.p.a., proposal submitted in preceding term, written consent of instructor and chairperson; grad. prereq: written consent of adviser and graduate officer. Advanced work for superior students whose program cannot be adequately met by scheduled classes. Course requires substantial written work. (T)

5991 Directed Study: Salford-W.S.U. Exchange. Cr. 3-9

Prereq: written consent of departmental adviser. Open only to students admitted to Salford-W.S.U. Exchange Program. (F,W)

6100 Introduction to Old English. Cr. 3

The fundamentals of language and grammar and the literary analysis of Old English texts. (Y)

6800 Advanced Creative Writing. Cr. 3 (Max. 6)

Prereq: grade of B or better in any 5000-level creative writing course or consent of instructor after submission of manuscript. Writing in any of the creative forms. Work by students presented in seminar meetings; individual conferences. Topics to be announced in Schedule of Classes. (Y)

7010 Introduction to Graduate Studies in Literature. Cr. 4

Prereq: graduate standing. Contemporary approaches to literary theory, scholarship, and criticism. (F)

7020 Studies in the Theory of Composition. Cr. 4 (Max. 16)

Prereq: graduate standing. Seminar on such topics as: the writing process, computers in composition, theory of basic writing, theory of technical/professional writing. Topics to be announced in Schedule of Classes. (Y)

7030 Survey of Research in Writing. Cr. 4

Prereq: graduate standing. Analyzing and evaluating research and research methods in reading, cognitive psychology, rhetoric, linguistics, composition, and other areas related to writing. (Y)

7040 The Teaching of Writing. Cr. 4

Prereq: graduate standing. Theory of teaching of expository writing: empirical and theoretical exploration of the writing process, written language competence, orality and literacy, and rhetorical theory. Review of pedagogical approaches, including use of the computer in composing. (Y)

7050 Studies in Criticism. Cr. 4 (Max. 12)

Prereq: graduate standing. Analysis of critical texts and ideas in specific writers and periods. Topics to be announced in Schedule of Classes. (Y)

7070 Topics in Research Methods in Composition Studies. Cr. 4 (Max. 12)

Prereq: graduate standing. Introduction to research methods in composition studies: case studies, ethnographies, cognitive studies, discourse analysis, interview studies, survey research, descriptive and experimental studies, historical research. Topics to be announced in Schedule of Classes. (Y)

7080 History of Rhetoric. Cr. 4 (Max. 8)

Prereq: graduate standing. Historical background on current theories and practices in composition and writing theory. Students survey past theories of rhetoric and investigate their historical and cultural contexts. (B)

7100 Studies in Old English. Cr. 3-4 (Max. 12)

Prereq: graduate standing; ENG 5140 or 6100 or equiv. Selected topics such as Beowulf, poetry of the Exeter Book, gnomic literature, saints' lives. Topics to be announced in Schedule of Classes. (I)

7120 Studies in Medieval Literature. Cr. 4 (Max. 12)

Prereq: graduate standing. Selected topics, such as Arthurian legend, the alliterative revival, problems in Chaucer criticism. Topics to be announced in Schedule of Classes. (I)

7150 Studies in Shakespeare. Cr. 4

Prereq: graduate standing. Special problems in current scholarship and criticism. (B)

7160 Studies in Renaissance Literature. Cr. 4 (Max. 12)

Prereq: graduate standing. Advanced studies of particular authors or groups of authors from 1500-1660, or of literary works from special sub-period, generic, thematic, or methodological focuses. Topics to be announced in Schedule of Classes. (B)

7200 Studies in Restoration and Eighteenth Century Literature. Cr. 4 (Max. 12)

Prereq: graduate standing. Studies of particular authors or genres. Topics to be announced in Schedule of Classes. (I)

7250 Studies in Romantic Literature. Cr. 4 (Max. 12)

Prereq: graduate standing. Topics, such as Wordsworth and Coleridge, crisis and triumph of the romantic imagination, to be announced in Schedule of Classes. (I)

7260 Studies in Victorian Literature. Cr. 4 (Max. 12)

Prereq: graduate standing. Poetry, non-fictional prose, drama, fiction. Topics to be announced in Schedule of Classes. (I)

7300 Studies in Twentieth Century Literature. Cr. 4 (Max. 12)

Prereq: graduate standing. Problems in American or British literature. Topics to be announced in Schedule of Classes. (I)

7340 Studies in Genres. Cr. 4 (Max. 12)

Prereq: graduate standing. Study of specific genres (drama, poetry, utopia, elegy, pastoral, film noir, and the like) using English or American texts (or using a comparative literature approach). Topics to be announced in the Schedule of Classes. (B)

7380 Studies in the Novel. Cr. 4 (Max. 12)

Prereq: graduate standing. Advanced study of the novel. Topics to be announced in Schedule of Classes. (B)

7400 Studies in American Literature Through the Nineteenth Century. Cr. 4 (Max. 12)

Prereq: graduate standing. Advanced study of such topics as Puritanism, Transcendentalism, Fugitive Slave Narratives and Indian Captivity Narratives as evidenced in such authors as Dickinson, Douglass, Franklin, Hawthorne, Hutchinson, Jacobs, Whitman. Topics to be announced in Schedule of Classes. (B)

7410 Studies in American Literature of the Twentieth Century. Cr. 4 (Max. 12)

Prereq: graduate standing. Advanced study of literary representations of crucial cultural issues as demonstrated among writers, movements, and selected texts. Possible writers include T.S. Eliot, Toni Morrison, Gertrude Stein; movements like Modernism and Postmodernism, and cultural phenomena like assimilation and reification may be treated. Topics to be announced in Schedule of Classes. (B)

7420 Studies in American Literature. Cr. 4 (Max. 12)

Prereq: graduate standing. Advanced studies in American literature from generic, historical, thematic or theoretical perspectives. Topics such as realism, assimilation, naturalism, urbanization, immigration, colonialism, construction and reconstruction. Topics to be announced in Schedule of Classes. (B)

7450 Studies in African-American Literature. Cr. 4 (Max. 12)

Prereq: graduate standing. Advanced study of topics in African-American literature. Topics to be announced in Schedule of Classes. (B)

7500 Topics in Film Studies. Cr. 4 (Max. 12)

Graduate seminar in film studies: methods of analysis, historical approaches, theoretical issues. Topics to be announced in Schedule of Classes. (Y)

7510 Advanced Studies in Film. Cr. 4 (Max. 12)

Advanced studies in film from theoretical, generic, historical, and auteurist perspectives. Topics to be announced in the Schedule of Classes. (Y)

7520 Topics in Contemporary Culture. Cr. 4 (Max. 12)

Prereq: graduate standing. Canonical/traditional and non-traditional materials of contemporary culture. Topics to be announced in Schedule of Classes. (Y)

7550 Studies in Comparative Literature. Cr. 4 (Max. 12)

Prereq: graduate standing. The interrelations of literatures: movements, genres, periods, themes and motifs. Required of M.A. candidates in Comparative Literature when offered as "Literary Theory and the Comparative Study of Literature." Topics to be announced in Schedule of Classes. (I)

7590 Topics in English and American Literature. Cr. 4 (Max. 12)

Prereq: graduate standing. Advanced studies in English and American literature from specific perspectives such as generic, historical or thematic. Topics to be announced in Schedule of Classes. (I)

7650 Studies in Folklore and Literature. Cr. 4 (Max. 12)

Prereq: graduate standing. Advanced study of the interrelations of folklore and literature. Topics to be announced in Schedule of Classes. (I)

7670 Studies in Folklore and Folklife. Cr. 4 (Max. 12)

Prereq: graduate standing. Folklore theory and techniques applied to the study of oral and written literature, social folk custom and folk arts. Topics to be announced in Schedule of Classes. (I)

7710 Advanced Studies in Linguistic Structure. (LIN 7710) Cr. 4 (Max. 12)

Prereq: graduate standing. Current issues in linguistic theory, including problems in phonology, morphology, syntax, formal semantics; also included are grammatical organization and the interrelationships among components, constraints on rules, and linguistic metatheory. Topics to be announced in Schedule of Classes. (I)

7720 Advanced Studies in Language Use. (LIN 7720) Cr. 4 (Max. 12)

Prereq: graduate standing. Current problems in language use, including issues in language variation, pidgins and creoles, first language acquisition, perception and production, and linguistic stylistics. Topics to be announced in Schedule of Classes. (I)

7770 Discourse Analysis. (LIN 7770) Cr. 4 (Max. 12)

Prereq: graduate standing. Analysis of inter-sentential relationships and of larger patterns. Implied and actual exchanges. Information ordering. Multi-level and intersectional analysis of expository prose. Topics to be announced in Schedule of Classes. (B)

7800 Seminar in Creative Writing. Cr. 4 (Max. 8)

Prereq: graduate standing. Intensive advanced study in creative writing and/or relevant critical theory. Topics such as: Writing the Novel, Narrative Perspective, Creative Text and Reader Response, to be announced in Schedule of Classes. (Y)

7990 Directed Study. Cr. 1-8 (Max. 8)

Prereq: written proposal submitted to graduate officer in preceding semester; written consent of adviser and graduate officer. Advanced work for superior English majors whose program of study cannot be adequately met by scheduled classes. (T)

7999 Master's Essay Direction. Cr. 1-3

Prereq: written consent of adviser. (T)

8050 Seminar in Critical Problems. Cr. 4 (Max. 12)

Prereq: written consent of graduate adviser. Open only to doctoral students. Advanced seminar on particular critical problem in English studies (literary theory, literary history, cultural studies, discourse and language studies, representation, and the like). Topics to be announced in Schedule of Classes. (Y)

8390 Seminar in English Literature. Cr. 4 (Max. 12)

Prereq: written consent of graduate adviser. Open only to doctoral students. Advanced seminar in some aspect or area of English literature. Topics to be announced in Schedule of Classes. (Y)

8420 Seminar in American Literature. Cr. 4 (Max. 12)

Prereq: written consent of graduate adviser. Open only to doctoral students. Advanced seminar on some aspect or area of American literature. Topics to be announced in Schedule of Classes. (Y)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: written consent of adviser. (T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16 (30 req.)

Prereq: written consent of doctoral adviser. Offered for S and U grades only. (T)

GERMAN and SLAVIC STUDIES

Office: 443 Manoogian Hall; 577-3024; Fax: 577-3266;
Chairperson: Donald Haase
Web Site: <http://www.langlab.wayne.edu/germslav/germslav.html>

Professors

Penrith B. Goff (Emeritus), Edmund Ordon (Emeritus), Marvin S. Schindler (Emeritus), Guy Stern

Associate Professors

Vladimir Bezdek (Emeritus), Achim Bonawitz (Emeritus), Kenneth Brostrom, Alfred Cobbs, Donald Haase, Maria C. Roth (Emerita)

Assistant Professors

Catherine Baumann, Frank J. Corliss, Jr. (Emeritus), Halimur Khan

Lecturers

Mark Ferguson, Alina Klin-Norris, Dickran Toumajan

Adjunct Faculty

Vera Andrushkiw, Hans-Peter Soder

Graduate Degrees

MASTER OF ARTS with a major in German

DOCTOR OF PHILOSOPHY with a major in Modern Languages

Master of Arts with a Major in German

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16.

DEGREE REQUIREMENTS: The master's degree in German is offered by this department under the following options:

Plan A: *Twenty-four credits in course work, plus an eight credit thesis and oral examination*

Plan B: *Twenty-nine credits in course work, plus a three credit essay and oral examination*

Plan C: *A minimum of thirty-two credits in course work depending on the Plan of Work. Course work is followed by three written examinations and an oral examination covering graduate studies.*

Students planning a teaching career on the college level or intending to continue to the doctoral degree should elect either Plan A or Plan B. Plan C, Language and Culture, is intended primarily for those interested in teaching on the elementary and secondary school levels, or for those with a more general interest in German language and culture.

Under all Plans, the Graduate School requires a minimum of six credits at the 7000 level or above.

Scholarship: All course work must be completed in accordance with the academic procedures of the College of Liberal Arts and the Graduate School governing graduate scholarship and degrees; see pages 204-206 and 16-30, respectively.

Master's Option in Germany: Students accepted into the German graduate program have the opportunity to earn graduate credit towards a Master of Arts in German while spending two semesters studying at the University of Munich. The opportunity is made possible by the cooperation of the Junior Year in Germany Program, which facilitates the student's matriculation, registration, and housing in Munich.

All students must first be admitted to the German graduate program before they will be considered eligible to participate in this option. Students already enrolled are eligible to participate upon successful completion of sixteen graduate credits within the department with a grade of 'B' or better, approval of the M.A. *Plan of Work*, and/or the approval of the graduate adviser. Students who wish to spend their first year of graduate study in Munich must complete their studies on the W.S.U. campus in order to receive the M.A. degree. While in Germany the student will complete a minimum of eight credits per semester. W.S.U. credit will be granted only for those classes approved in advance by the graduate adviser and for which the student has earned *benotete Scheine*.

For further details and requirements, see the graduate adviser.

Doctor of Philosophy with a Major in Modern Languages

The Ph.D. in Modern Languages is an interdisciplinary, interdepartmental program administered jointly by the Department of German and Slavic Studies and the Department of Romance Languages and Literatures. Applicants wishing to major in German should write to the Department of German and Slavic Studies.

The Doctor of Philosophy in Modern Languages allows students to combine a major and a minor that best meet their interests and career goals. Several options are available:

Major Concentration: Doctoral students may concentrate their studies in French, German, or Spanish. Thirty-six graduate credits must be completed in one of these major areas.

Minor Concentration: Doctoral students broaden their course of study through the choice of a minor concentration. Minors are available in literary and cultural criticism, French, German, Italian, Russian, or Spanish.

The minor in literary and cultural criticism is fulfilled by taking a series of four designated courses for a total of sixteen graduate credits. These courses, which are taught in English, aim to increase the student's knowledge of criticism and theory in cultural, national, and international contexts. Courses rotate each semester among the German, Italian, French, Spanish, and Slavic language areas.

A minor in a second modern language may be fulfilled by taking sixteen graduate credits in French, German, Italian, Russian, or Spanish. Courses are chosen in consultation with the graduate adviser.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. The application for admission and transcripts of all previous college work should be filed in the Office of University Admissions at least three months in advance of the time the applicant plans to register.

DEGREE REQUIREMENTS

Course Requirements: A minimum of thirty-six credits on the graduate level in the major field, sixteen credits in one minor field, and eight credits in related courses. The total program must include thirty credits (excluding dissertation direction) at the 7000 level or above. Course requirements for the Master of Arts (Plan A or B) apply in the field of major concentration. The graduate adviser may approve certain courses taken under Plan C for application to doctoral study.

Language Requirements: The doctoral candidate must pass a Ph.D. reading examination in one language other than those of his/her major and minor fields. The choice of the language will be determined in consultation with the graduate adviser and subject to the approval of the Graduate Committee.

Qualifying Examinations: Within a reasonable time after the completion of all course work, students are required to pass extensive examinations, both written and oral, in the major and minor fields. Later, after the dissertation has been completed, a final oral presentation and defense of it is required.

Fellowships, Assistantships, and Scholarships

General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 30 of this bulletin.

University graduate fellowships for students working toward a Ph.D. degree provide a waiver of tuition fees, stipends, health insurance, and housing allowance. Support for summer study is also available. Graduate assistantships with teaching assignments are available to students working toward a Master of Arts degree as well as to doctoral candidates. They also provide a waiver of tuition fees and stipends.

The Martha S. Aust Graduate Scholarship in German is awarded annually to a student or students planning a teaching career in German. Amount of award and number of awards vary.

The Uwe K. Faulhaber Endowment in Applied German Studies annually makes funds available to employ a graduate student to assist a faculty member with a special project. All graduate and AGRADE students are eligible for consideration.

Graduate students may also apply for the Munich Exchange Fellowship, for a year of study in Munich.

All students are also encouraged to apply for Graduate-Professional Scholarships, which provide tuition awards to students not otherwise holding a graduate assistantship or fellowship.

GRADUATE COURSES

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

Courses Offered in English

No knowledge of a foreign language is presumed or required for the following courses, which are conducted in English with all readings in English. See also the Russian literature courses on page 229.

German in English Translation (GER)

5400 Cultural Studies and Criticism. (GER 7400) Cr. 3-4

Exploration of key concepts and major figures for scholarship in literary and cultural studies. Readings and class in English. Open to students from diverse disciplines. (I)

5450 Gender, Ethnicity, and Sexual Preference in German Literature and Film. (GER 7450) Cr. 3-4

Representations of gender, ethnicity, sexual preference of 19th- and 20th-century German culture through literature and film. Readings in English or German; films subtitled; discussions in English. Open to students from diverse disciplines. (I)

Slavic in English Translation (SLA)

5400 Cultural Studies and Criticism. (SLA 7400) Cr. 3-4

Important concepts and major figures in Slavic contributions to literary and cultural studies. Readings and class in English. Open to students from diverse disciplines. (I)

FOREIGN LANGUAGE INSTRUCTION

GERMAN (GER)

5100 Advanced Composition and Conversation. Cr. 3

Prereq: GER 3100 or 3200 or equiv. Emphasizes improvement of student's oral and written command of German. Detailed study of modern German syntax. (B)

5300 Children's Literature and Culture. (GER 7300) Cr. 3-4

Historical, cultural and critical aspects of German children's literature; includes works for young children and adolescents. (I)

5390 Exile and Holocaust. (GER 7390) Cr. 3-4

Holocaust, from a literary and cultural perspective. (I)

5400 Cultural Studies and Criticism. (GER 7400) Cr. 3-4

Exploration of key concepts and major figures for scholarship in literary and cultural studies. Readings and class in English. Open to students from diverse disciplines. (I)

5450 Gender, Ethnicity, and Sexual Preference in German Literature and Film. (GER 7450) Cr. 3-4

Representations of gender, ethnicity, sexual preference of 19th- and 20th-century German culture through literature and film. Readings in English or German; films subtitled; discussions in English. Open to students from diverse disciplines. (I)

5500 Pre-Modern Germany. (GER 7500) Cr. 3-4

Medieval period, Northern Renaissance, Reformation, and Baroque. Literary and nonliterary forms of representation, literary traditions and intellectual currents are examined within social, political and historical contexts. (I)

5650 Romanticism. (GER 7650) Cr. 3-4 (Max. 8)

German Romantic literature and thought in a European context. Survey of Romanticism as a period is linked to studies of specific writers, genres, and cultural developments. (I)

5670 Literature in the Age of Industrial Revolution. (GER 7670) Cr. 3-4 (Max. 8)

Nineteenth-century literary and cultural texts emanating from the period of rising industrialization in the German-speaking world. (I)

5720 Enlightenment and Sturm und Drang. (GER 7720) Cr. 3-4 (Max. 8)

Lessing, the Storm and Stress movement, Goethe, Schiller; literary and cultural achievements. (I)

5730 The Classical Age. (GER 7730) Cr. 3-4 (Max. 8)

Goethe, Schiller, and the literary background of Weimar and German Classicism. (I)

5770 Modernism. (GER 7770) Cr. 3-4 (Max. 8)

Fin-de-siecle Germany and Austria, modernism and the metropolis, modernism and the new media (film, radio), art and politics of the Weimar Republic. (I)

5780 Texts and Contexts Since 1945. Cr. 3-4 (Max. 8)

Recent and contemporary literary and cultural works in context of the political, social and intellectual developments since 1945. (I)

5790 Topics in German Studies. (GER 7790) Cr. 1-4 (Max. 12)

Special topics in German studies, focusing on culture, literature, language, or area studies. Topics to be announced in Schedule of classes. (I)

5800 Literature and Cultures of Minorities. (GER 7800) Cr. 3-4

Texts by minority writers in Germany construct new or non-German identities in response to cultural traditions reflected in the 'master-

pieces' of German literature. Turkish, Jewish, Afro-German and Czech authors are examined in relation to canonical works which portray notions of non-German ethnic groups. (I)

5850 Second Language Instruction: Theory and Methods. (FRE 5850) (FRE 7850) (GER 7850) (SPA 5850) (SPA 7850) Cr. 3

Theoretical basis of second language teaching models; historical overview of methodologies; current trends in teaching of reading, writing, listening, speaking, and culture. Implications of methodology on materials, classroom techniques, and testing. (B)

5990 Directed Study. Cr. 1-4 (Max. 8)

Undergrad. prereq: written consent of German adviser; grad. prereq: written consent of German graduate adviser and chairperson. (T)

6100 Critical Approaches to German Studies. Cr. 3-4

Prereq: consent of major adviser required for undergraduates. Major critical approaches to German literature and cultural texts, and the questions and problems that drive contemporary German studies. (B)

7000 Professional Issues in Language, Literature and Cultural Studies. Cr. 2-3 (Max. 6)

Examination of a significant academic issue or activity as it relates to the profession of university teaching and research. (I)

7300 (GER 5300) Children's Literature and Culture. Cr. 3-4

Historical, cultural and critical aspects of German children's literature; includes works for young children and adolescents. (I)

7390 (GER 5390) Exile and Holocaust. Cr. 3-4

Holocaust, from a literary and cultural perspective. (I)

7400 (GER 5400) Cultural Studies and Criticism. Cr. 3-4

Exploration of key concepts and major figures for scholarship in literary and cultural studies. Readings and class in English. Open to students from diverse disciplines. (I)

7450 (GER 5450) Gender, Ethnicity, and Sexual Preference in German Literature and Film. Cr. 3-4

Representations of gender, ethnicity, sexual preference of 19th- and 20th-century German culture through literature and film. Readings in English or German; films subtitled; discussions in English. Open to students from diverse disciplines. (I)

7500 (GER 5500) Pre-Modern Germany. Cr. 3-4

Medieval period, Northern Renaissance, Reformation and Baroque. Literary and nonliterary forms and representation, literary traditions and intellectual currents examined within social, political and historical contexts. (I)

7650 (GER 5650) Romanticism. Cr. 3-4 (Max. 8)

German Romantic literature and thought in a European context. Romanticism as a period linked to studies of specific writers, genres, cultural developments. (I)

7670 (GER 5670) Literature in the Age of Industrial Revolution. Cr. 3-4 (Max. 8)

Nineteenth century literary and cultural texts emanating from the period of rising industrialization in the German-speaking world. (I)

7720 (GER 5720) Enlightenment and Sturm und Drang. Cr. 3-4 (Max. 8)

Lessing, Storm and Stress Movement, Goethe, Schiller; literary and cultural achievements. (I)

7730 (GER 5730) The Classical Age. Cr. 3-4 (Max. 8)

Goethe, Schiller, and the literary background of Weimar and German Classicism. (I)

7770 (GER 5770) Modernism. Cr. 3-4 (Max. 8)

Fin-de-siecle Germany and Austria, modernism and the metropolis, modernism and new media (film, radio), art and politics of the Weimar Republic. (I)

7780 Texts and Contexts Since 1945. Cr. 3-4 (Max. 8)

Recent and contemporary literary and cultural works in context of the political, social and intellectual developments since 1945. (I)

7790 (GER 5790) Topics in German Studies. Cr. 1-4 (Max. 12)
Special topics in German studies, focusing on culture, literature, language, or area studies. Topics to be announced in Schedule of Classes. (I)

7800 (GER 5900) Literatures and Cultures of Minorities. Cr. 3-4

Texts by minority writers in Germany construct new or non-German identities in response to cultural traditions reflected in the 'masterpieces' of German literature. Turkish, Jewish, Afro-German and Czech authors are examined in relation to canonical works which portray notions of non-German ethnic groups. (I)

7850 (GER 5850) Second Language Instruction: Theory and Methods. (FRE 5850) (FRE 7850) (SPA 5850) (SPA 7850) Cr. 3

Theoretical basis of second language teaching models; historical overview of methodologies; current trends in teaching of reading, writing, listening, speaking, and culture. Implications of methodology on materials, classroom techniques, and testing. (B)

8680 Seminar in German Studies. Cr. 4 (Max. 16)

Topics to be announced in Schedule of Classes. (I)

7996 Research Project. Cr. 1-4 (Max. 12)

Prereq: written consent of graduate adviser and chairperson. (T)

7999 Master's Essay Direction. Cr. 1-3 (3 req.)

Prereq: consent of graduate adviser. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of adviser. (T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16 (30 req.)

Prereq: consent of graduate adviser. Offered for S and U grades only. (T)

POLISH (POL)

5990 Directed Study. Cr. 1-3 (Max. 12)

Prereq: POL 3020 or equiv., written consent of chairperson. (T)

RUSSIAN (RUS)

5600 Major Russian Writers. Cr. 3-4

For advanced undergraduate and graduate students interested in literature. Major nineteenth-century authors: Pushkin, Dostoevsky, Chekhov, Tolstoy, others. Close readings of works introduce traditions and character types within historical and socio-cultural contexts; relevant intellectual, religious, political concerns. Taught in English; readings in English or Russian. (F)

5650 Love, War, and Revolution in Russian Literature. Cr. 3-4

Prereq: consent of instructor. For advanced undergraduate and graduate students interested in literature. Close analysis of major twentieth-century works; overview of social, political, and cultural developments. Russian modernism, Socialist Realism, political dissidence in literature, emerging developments in post-Soviet period. Taught in English; readings in English or Russian. (W)

5990 Directed Study. Cr. 1-3 (Max. 12)

Prereq: undergrad., written consent of chairperson; grad., written consent of chairperson and graduate officer. For students who wish credit for program of work not included in regularly scheduled courses, either in language or in literature. Knowledge of Russian required. (T)

HISTORY

Office: 3094 Faculty/Administration Building; 577-2525;

Fax: 577-6987

Chairperson: Marc W. Kruman

Professors

Thomas N. Bonner (Emeritus), William J. Brazill, Jr., John J. Bukowczyk, R. V. Burks (Emeritus), Corinne Gilb (Emeritus), Edwin C. Hall (Emeritus), Charles K. Hyde, Christopher H. Johnson, Marc W. Kruman, Harry Magoulias (Emeritus), Philip P. Mason, Richard Miles (Emeritus), Alan Raucher, Monica Schuler, Samuel F. Scott, Melvin Small, Richard Studing, David Weinberg

Associate Professors

Effie Ambler, Marc Cogan, Jose Cuello, Elizabeth Faue, Osumaka Likaka, Stanley Shapiro, Stanley D. Solvick (Emeritus), Sandra VanBurkleo

Assistant Professors

Jorge China, Linda Housch-Collins, Joseph Ward

Lecturer

Lynn Laufenberg

Graduate Degrees

MASTER OF ARTS with a major in History

DOCTOR OF PHILOSOPHY with specializations in Europe, America, Archival Administration

GRADUATE CERTIFICATE in Archival Administration

The graduate program in history offers advanced education for qualified students who wish to develop the analytical and research skills appropriate to the study of history. Basic to all graduate programs in this discipline is an emphasis upon the location and classification of historical evidence, the interpretation of this evidence, and its synthesis in written or oral form. The purpose of historical research and writing is to advance understanding of the past, to place the problems of the contemporary world in historical perspective, and to furnish insight about the future.

Advanced degrees in history serve several audiences, chief among them being those intent upon a teaching career at the secondary, junior college or university level; those interested in employment in government research, as foreign service officers, or in the management of archival resources and public and private historical agencies; and those who wish to study history as a means of understanding contemporary society and social issues.

Both the M.A. and the Ph.D. programs provide sufficient flexibility to meet the professional needs of these various interests at differing levels of achievement. All M.A. students must show mastery of their subject matter and demonstrate an ability to do basic historical research. Attainment of the Ph.D. requires the ability to use such research tools as statistics and foreign languages, as well as extensive mastery of a series of historical fields and a demonstrated capacity for original research. The doctoral dissertation is the culmination of the historian's training and constitutes an enlargement of our knowledge and understanding of history. Normally one and one-half years of study will be required for the completion of the M.A.; fulfillment of all requirements for the Ph.D. will usually involve four years of full-time study.

Programs in Archives and Law: The Department administers a graduate certificate program in archival administration in cooperation with the Reuther Library of Labor and Urban Affairs (see below), as well as a joint J.D.-M.A. degree program operated in cooperation with

the Law School. Both programs are described in the Department's Graduate Handbook

Master of Arts with a Major in History

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. In addition, applicants to this program must satisfy the following criteria. The applicant normally must have adequate undergraduate preparation in either the social sciences or the humanities. The Department requires that all applicants submit a letter of intent, a writing sample, and at least two letters of recommendation from former instructors, and provide copies of transcripts from each college or university previously attended. Students whose undergraduate honor point average is below 2.75 must take the general aptitude and advanced history sections of the Graduate Record Examination and make their scores available to the Admissions Office.

The Department of History admits to the M.A. Program on a continuing basis; individuals are encouraged to apply at least eight weeks before the start of the term in which they plan to begin their program.

DEGREE REQUIREMENTS: Candidates for the master's degree in history must complete a total of thirty-five credits under Plans A, B, or C as outlined below. All students must take History 7830 (Methods and Research in History) during the first year in the program and, regardless of which Plan they pursue, all students must complete at least one 8000-level seminar. Course work must be completed in accordance with the academic procedures of the College and the Graduate School governing graduate scholarship and degrees; see pages 204-206 and 16-30, respectively.

Plan A: *Twenty-seven credits in graduate course work, of which at least twenty-two must be taken in history, plus an eight credit thesis.*

Plan B: *Thirty-two credits in graduate course work, including at least twenty-seven credits in history, plus a three credit essay.*

Under *Plans A and B*, the student must (1) complete course work in two fields of history (for fields, consult the *Departmental Graduate Handbook*); (2) complete a minimum of four courses numbered 7000 or above, exclusive of the thesis (HIS 8999) or essay (HIS 7999) (HIS 7990, Directed Study, will count toward the four-course requirement only if taken for more than two credits); and (3) pass a final oral examination on the thesis or essay and graduate course work.

Plan C: *Thirty-five credits in graduate course work, including at least thirty credits in history, with a minimum of eighteen credits in courses numbered 7000 or above. Upon completion of course work, Plan C students must pass a comprehensive written examination and a one-hour oral examination.*

Candidacy must be established by filing an official *Plan of Work* with the Department when twelve credits have been earned.

Graduate Certificate in Archival Administration

Admission Requirements: Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16.

Students may earn a certificate in archival administration by completing a twelve-credit program either within the regular M.S.L.S., M.A., or Ph.D. graduate program or in a non-degree curriculum. No more than nine credits may count toward both the certificate and the graduate degree. The certificate program requires successful completion of History 7840 (LIS 7710) and History 7850 (LIS 7720), as well as two other courses from the following: HIS 7801 (LIS 7750), HIS 7860 (LIS 7770/ANT 6360), HIS 7880, and HIS 7890 (LIS 7730)

Doctor of Philosophy with a Major in History

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. In addition to having completed a baccalaureate degree at an accredited college or university, applicants must supply copies of all appropriate transcripts, at least three letters of recommendation from former instructors, a statement of the applicant's goals and career objectives, and a sample of his or her scholarly papers. Furthermore, applicants must have taken the Aptitude section of the Graduate Record Examination and made their scores available to the Admissions Office. It is recommended that applicants also take the advanced history section of the Graduate Record Examination. After careful screening the Department will admit a limited number of highly qualified students to the doctoral program. Those admitted will be considered for graduate assistantships. Applications must be postmarked by March 1 and admission is always for the fall semester.

DEGREE REQUIREMENTS

The Doctor of Philosophy degree requires ninety credits beyond the baccalaureate degree, thirty of which must be earned as dissertation credit. All course work must be completed in accordance with the academic procedures of the College and the Graduate School governing graduate scholarship and degrees; see pages 204-206 and 16-30, respectively. For a detailed description of the program in history, see the Department's Graduate Handbook.

Foreign Language Requirement: Upon entering the program, students will be expected to offer a plan for satisfying the language requirement. They will be expected to demonstrate a reading knowledge of two languages to the appropriate University language department. With permission of the graduate director, a student may substitute certain specific auxiliary skills, such as statistics, for the second language.

Adviser: Upon entering the program, students will also be expected to select, in consultation with the Department's director of graduate studies, a faculty member who will serve as the student's adviser, both in general study and with respect to his or her dissertation. In consultation with the adviser, the student will then prepare a *Plan of Work* listing the courses that will prepare him or her in four fields of history (including a field in which the dissertation will be written), and a related cognate field outside the Department.

Curricula: The Department of History offers doctoral level work in the following geographical-chronological fields: ancient (not for dissertation topic), medieval, early modern Europe, modern Europe, France, Great Britain, Africa, America to 1877, and America since 1865. It also offers doctoral level work in the following topical fields: African-American, American foreign relations, American immigration/ethnic, American constitutional and legal, history of women, archival administration, economic, labor, urban. Students beginning in the fall of 1987 and thereafter must choose at least two geographical-chronological fields, one of which must be other than American history.

Admission to Candidacy requires completion of the following requirements:

1. Filing of an approved *Plan of Work* with the Graduate School;
2. Submission and approval of the *Doctoral Dissertation Outline and Record of Approval* form and the Dissertation Prospectus.
3. Satisfactory completion of written and oral qualifying examinations in four history fields. Cognate requirements will be met through satisfactory completion of course work in the cognate.

Dissertation: The dissertation is a work of original historical research and presentation on a topic selected by the student with the approval of the student's adviser and accepted as successfully completed by both the adviser and a dissertation committee. Upon completion of the dissertation, the student will be required to make a public lecture presentation-defense and to submit the dissertation for certification to the Graduate School.

Fellowships and Assistantships

General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 30 of this bulletin.

Each year a number of graduate assistantships and fellowships are awarded to qualified graduate students. For information, write the Department's Director of Graduate Studies.

In addition, the History Department offers the following departmental awards:

Mark and Linea Diem Endowed Award: Annual award for an outstanding senior history major.

Rolf and Jennie Johannessen Endowed Memorial Scholarship: Annual award for undergraduate and graduate students in history, with preference given to those studying Ancient history.

Alfred H. Kelly Endowed Memorial Award: Annual award of up to \$350 for research-related expenses by graduate students on projects in history.

Richard Place Endowed Memorial Award: Annual award for undergraduate students in history.

GRADUATE COURSES (HIS)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509

5010 British North America to 1789. (HIS 7010) Cr. 4

Prereq: HIS 2040. Expansion of British empire to North America, interaction among European, Native American, and African peoples, and development of New World institutions and culture through the framing of the American constitution. (I)

5030 Early American Republic: 1789-1850. (HIS 7030) Cr. 4

Emphasis on the political culture with special attention to the founding of the American Republic, the emergence of a modern economy, slavery, social reform, and the sectional crisis. (B)

5040 Civil War and Reconstruction: 1850-1877. (HIS 7040) Cr. 4

Emphasis on the coming of the Civil War, the war's impact on American society, and the reconstruction of the United States after the war. (B)

5050 The Emergence of Modern America: 1877-1917. (HIS 7050) Cr. 4

Emphasis on the rise of big business, social and intellectual change, protest movements and government policies. (B)

5060 Modern America: 1917-1945. (HIS 7060) Cr. 4

Analysis of economic and social problems, politics, and government policies. (B)

5070 Contemporary American History: 1945 to the Present. (HIS 7070) Cr. 4

Social, political, intellectual, economic, diplomatic, and cultural trends in the United States since World War II.

5080 Disease, Drugs and Doctors Since 1650. (HIS 7080) Cr. 4

Survey of health conditions, medical theories, and the professional development of medicine from the period of colonial settlement, through the social and scientific changes of the nineteenth century, to the problems and issues of twentieth-century health delivery. (B)

5090 Constitutional History of the United States from 1937 to the Present. (HIS 7090) Cr. 3

U.S. constitutional development since the Judicial Revolution of 1937, emphasizing New Deal constitutionalism, dramatic shifts in the role of courts and the executive branch, civil rights movements, and modern rights consciousness. (B)

5110 (ULM 6100) Class, Race, and Politics in America. (AFS 6100) (P S 6050) (SOC 7330) (U P 7030) Cr. 3

Prereq: senior standing or consent of instructor. Historical and analytic investigation into the role of class and race in American politics. (Y)

5120 American Foreign Relations to 1933. (HIS 7120) Cr. 4

United States involvement in the international system from the Revolution through World War I and Versailles. Emphasis on the War of 1812 and the Mexican and Spanish-American Wars. (B)

5130 American Foreign Relations Since 1933. (HIS 7130) Cr. 4

United States involvement in the international system from the twenties to the present. Emphasis on World War II to Vietnam and the role of the United States in the Cold War and the Third World. (B)

5160 Constitutional History of the United States to 1860. (HIS 7160) Cr. 4

Anglo-American constitutional development from European expansion and New World Settlement through the onset of the Civil War. Changing relationship between colonies and imperial center, emergence of revolutionary republic in North America, framing of new constitutional orders, nineteenth-century developments through 1860. (B)

5170 Constitutional History of the United States from 1860 to 1940. (HIS 7170) Cr. 4

United States constitutional development from the beginning of Civil War through the Judicial Revolution of 1937. Emergence of new constitutional agenda between 1860 and the 1890s. Progressive constitutionalism, changes in relations between branches of government and in the federation, New Deal constitutionalism, and struggles for enfranchisement of blacks and women. (B)

5190 History of American Social Thought. (HIS 7190) Cr. 4

Social thought and ideologies from the colonial era to the recent past, including Puritanism, the Enlightenment, Transcendentalism, Darwinism, Pragmatism, and the social sciences; emphasis on major figures and social context. (B)

5200 Women in American Life and Thought. (HIS 7200) Cr. 3

Role of women in the development of American society and in women's movements. (B)

5210 The Peopling of Modern America, 1790-1914: A History of Immigration. (HIS 7210) Cr. 3-4

Causes and consequences of immigration; immigrants and labor; immigrant culture and institutions; relationship between immigration, industrialization, and urbanization; racism, nativism, and immigration restriction. (B)

5220 The Changing Shape of Ethnic America: World War I to the Present. (HIS 7220) Cr. 3-4

Assimilation, cultural pluralism and the "melting pot"; persistence of ethnic cultures; class and ethnicity; internal migrations; America's

recent immigrants; race and ethnic relations in the city; the "new ethnicity." (B)

5251 History of Feminism. (HIS 7251) (W S 7020) Cr. 4

An upper division - graduate level course on the main ideological, intellectual, and political sources and developments in the history of feminism in the United States. (B)

5280 American Legal History. (HIS 7280) Cr. 4

Non-technical survey of relationships between private law and a developing American society from earliest settlement to the present. Emphasis on evolving conceptions of civil authority and private right, the legal profession, legal education, the law of slavery, and doctrinal developments touching property, labor, women, children, and others. (I)

5290 (ECO 5490) American Labor History. (HIS 7290) Cr. 4

Analysis of American workers and unions in the nineteenth and twentieth centuries. (B)

5300 Economic History of the United States. (HIS 7300) Cr. 4

Economic growth and development of the United States from origins to present. Emphasis on transformation from agrarian to industrial society and its social and economic impact. (B)

5310 Social Justice in America. (HIS 7310) Cr. 4

Prereq: junior standing. History of Anglo-American criminal justice system from English roots to the Omnibus Crime Control Act of 1968. Major components of criminal justice will be examined: law, courts, police, corrections, juvenile justice. Changing perspectives of deviance; violence in American history. (B)

5330 History of Ancient Greece. (HIS 7330) Cr. 3

Ancient Greek culture, emphasizing political events, social and economic institutions, cultural achievements. (B)

5340 History of Ancient Rome. (HIS 7340) Cr. 3

Institutional and cultural development. (B)

5350 The Hellenistic Period. (HIS 7350) Cr. 3

Social and economic developments, Alexandrian science, and Hellenization of the East from Alexander the Great to the Roman conquest of the eastern Mediterranean. (B)

5360 The Early Middle Ages: 300-1000. (HIS 7360) Cr. 3

Interaction of Roman, Christian and barbarian elements in the emergence of Europe as a cultural entity between the fourth and tenth centuries. (B)

5370 The High Middle Ages: 1000-1300. (HIS 7370) Cr. 3

Economic, social and cultural developments that transformed Western European civilization during the eleventh, twelfth and thirteenth centuries. (B)

5380 The Renaissance. (HIS 7380) Cr. 3

Europe in an age of transition between the fourteenth century and about 1530; Italian cultural and intellectual developments within a social and political context. (B)

5390 Europe in the Age of Reformation. (HIS 7390) Cr. 3

Protestant and Catholic reformation seen in the context of social, economic, and political conditions of the sixteenth and seventeenth centuries. (B)

5410 The French Revolution and Napoleon. (HIS 7410) Cr. 4

The dramatic changes of the late eighteenth and early nineteenth century that altered the course of French and European development and laid the basis for political modernization. (Y)

5440 Twentieth Century Europe. (HIS 7440) Cr. 4

Total war and disillusionment, attempts to restore stability and security, totalitarianism as an answer, more war and reconstruction, a divided Europe, the search for Europe's place in the world. (B)

5450 The Age of Ideology: Europe in the Interwar Period. (HIS 7450) Cr. 4

Social and cultural trends in modern European society; ideological struggles of interwar period. Topics include: impact of World War I;

development of communism, fascism, nazism; Freud and the liberal defense; existentialism; postwar disillusionment. (Y)

5460 History of the Holocaust. Cr. 4

Holocaust as a tragic conjuncture of general European and Jewish history. Topics include: development of anti-semitism in Europe and the rise of Nazism; European Jewry in the interwar period; the Third Reich's treatment of the 'Jewish Question' in the 1930s; Jewish resistance; fate of the survivors; implications of the Holocaust for contemporary society. (Y)

5470 Modern Germany. (HIS 7470) Cr. 3-4

The history of modern Germany against the background of its tradition and culture. Concentration on the Prussian-Austrian conflict, the emergence of German intellectual life, unification and modernization, and the crises and wars of the twentieth century. (I)

5480 Nazi Germany. (HIS 7480) Cr. 3-4

Hitler and Nazi Germany. Topics include: impact of World War I, the Weimar Republic, the growth of the Nazi party, the seizure of power, internal and foreign policies, and the war experience. (B)

5490 Russian History through the Revolution. (HIS 7490) Cr. 4

Development and transformation of state power, with particular attention to those economic and social elements peculiar to Russia. (Y)

5500 The Soviet Union. (HIS 7500) Cr. 4

Bolshevik seizure of power, collectivization of agriculture and forced-draft industrialization, Nazi German invasion, Khrushchev and deStalinization, predominance of the new middle class, nationality problems, problems of detente. (Y)

5530 History of World War I and II. (HIS 7530) Cr. 4

A military history of the two world wars of the twentieth century. (B)

5550 Britain 1485-1714. (HIS 7550) Cr. 4

Impact of religious, political and social change on British people during sixteenth, seventeenth, and early eighteenth centuries. (I)

5620 The Rise of the European Working Class: 1750-1850. (HIS 7620) Cr. 3

The impact of capitalism on peasant society; the transformation of handicraft industry; the emergence of the factory proletariat; class conflict and the working class movement in Europe's revolutionary age. (B)

5630 Socialism and the European Labor Movement. (HIS 7630) Cr. 3

Comparative labor history from 1850 to the present; Utopian socialism, Marxism, anarchism, syndicalism, communism, fascism; contemporary trends. (B)

5660 France Since 1815. (HIS 7660) Cr. 4

Struggle between old and new political forces, impact of industrialization, search for freedom with order, effect of total war, problems of decolonialization and European integration, cultural transformations. (Y)

5730 The History of West Africa. (HIS 7730) Cr. 4

West African states; Islam and socio-political change; the termination of the Atlantic slave trade; European conquest; West African resistance and the Colonial experience; nationalism and independence. (B)

5740 History of South Africa. (HIS 7740) Cr. 4

Historical origins of Apartheid with emphasis on nineteenth and twentieth century, including Dutch and British settlement, African state building, the mineral revolution, European racism, African resistance and nationalism. (B)

5995 Honors Seminar. Cr. 3

Prereq: consent of chairperson; honors standing in history. (T)

6000 Studies in Comparative History. Cr. 2-4

Topics to be announced in Schedule of Classes. (B)

6010 Studies in American History. Cr. 2-4 (Max. 9)

Topics to be announced in Schedule of Classes. (Y)

7010	(HIS 5010) Readings in British North America to 1789. Cr. 4	7310	(HIS 5310) Readings in Social Justice in America. Cr. 4 (B)
	(I)	7330	(HIS 5330) Readings in the History of Ancient Greece. Cr. 3 (B)
7030	(HIS 5030) Readings in the Early American Republic: 1789-1850. Cr. 4	7340	(HIS 5340) Readings in the History of Ancient Rome. Cr. 3 (B)
	(B)	7350	(HIS 5350) Readings in the Hellenistic Period. Cr. 3 (B)
7040	(HIS 5040) Readings in the Civil War and Reconstruction: 1850-1877. (HIS 7040) Cr. 4	7360	(HIS 5360) Readings in the Early Middle Ages: 300-1000. Cr. 3 (B)
	(B)	7370	(HIS 5370) Readings in the High Middle Ages: 1000-1300. Cr. 3 (B)
7050	(HIS 5050) Readings in the Emergence of Modern America: 1877-1917. Cr. 4	7380	(HIS 5380) Readings in the Renaissance. Cr. 3 (B)
	(B)	7390	(HIS 5390) Readings in Europe in the Age of Reformation. Cr. 3 (B)
7060	(HIS 5060) Readings in Modern America: 1917-1945. (HIS 7060) Cr. 4	7410	(HIS 5410) Readings in the French Revolution and Napoleon. Cr. 4 (Y)
	(B)	7440	(HIS 5440) Readings in Twentieth Century Europe. Cr. 4 (B)
7070	(HIS 5070) Readings in Contemporary American History: 1945 to the Present. Cr. 4	7450	(HIS 5450) Readings in The Age of Ideology: Europe in the Interwar Period. Cr. 4
	(B)	7470	(HIS 5470) Readings in Modern Germany. Cr. 3-4 (I)
7080	(HIS 5080) Readings in Disease, Drugs and Doctors Since 1650. Cr. 4	7480	(HIS 5480) Readings in Nazi Germany. Cr. 3-4 (Y)
	(Y)	7490	(HIS 5490) Readings in Russian History through the Revolution. Cr. 4 (Y)
7090	(HIS 5090) Readings in the Constitutional History of the United States from 1937 to the Present. (HIS 7090) Cr. 3 (B)	7500	(HIS 5500) Readings in the Soviet Union. Cr. 4 (B)
7120	(HIS 5120) Readings in American Foreign Relations to 1933. Cr. 4	7530	(HIS 5530) Readings in the History of World War I and II. Cr. 4 (B)
	(B)	7550	(HIS 5550) Readings in Britain: 1485-1714. Cr. 4 (I)
7130	(HIS 5130) Readings in American Foreign Relations Since 1933. Cr. 4	7620	(HIS 5620) Readings in the Rise of the European Working Class: 1750-1850. Cr. 3 (B)
	(Y)	7630	(HIS 5630) Readings in Socialism and the European Labor Movement. Cr. 3 (B)
7160	(HIS 5160) Readings in the Constitutional History of the United States to 1860. Cr. 4	7660	(HIS 5660) Readings in France Since 1815. Cr. 4 (Y)
	(F)	7730	(HIS 5730) Readings in the History of West Africa. Cr. 4 (I)
7170	(HIS 5170) Readings in the Constitutional History of the United States from 1860 to 1940. Cr. 4	7740	(HIS 5740) Readings in the History of South Africa. Cr. 4 (B)
	(W)		
7190	(HIS 5190) Readings in History of American Social Thought. Cr. 4		
	(B)		
7200	(HIS 5200) Readings in Women in American Life and Thought. Cr. 3		
	(B)		
7210	(HIS 5210) Readings in the Peopling of Modern America, 1790-1914: A History of Immigration. Cr. 3-4		
	(Y)		
7220	(HIS 5220) Readings in the Changing Shape of Ethnic America: World War I to the Present. Cr. 3-4		
	(Y)		
7251	(HIS 5251) History of Feminism. (W S 7020) Cr. 4		
	(B)		
7280	(HIS 5280) Readings in American Legal History. Cr. 4		
	(B)		
7290	(ECO 5490) Readings in American Labor History. (HIS 5490) Cr. 4		
	(Y)		
7300	(HIS 5300) Readings in the Industrial History of the United States. Cr. 4		
	(Y)		

7810 (LIS 7750) Introduction to Archival and Library Conservation. Cr. 3

Basic course in the fundamentals of archival and library conservation problems and methods essential for effective preservation management of paper and associated materials. (S)

7820 (LIS 7780) Computer Applications for Archives and Records Management. Cr. 3

Prereq: LIS 6210. Basic course on computer applications for control, access, and processing of archival materials and records in archives, libraries, historical agencies, businesses and museums. (Y)

7830 Methods and Research in History. Cr. 3

Required of all M.A. candidates. Methods and tools of research and documentation. Use of aids and guides. (F)

7840 Introduction to Archival Methods I. (LIS 7710) Cr. 3

Basic training in archival methods. (F)

7850 Introduction to Archival Methods II. (LIS 7720) Cr. 3

Prereq: HIS 7840. Continuation of HIS 7840. (W)

7860 Oral History: A Methodology for Research. (ANT 6360) (LIS 7770) Cr. 3

Techniques of gathering data from individuals for use in research, classroom teaching, in historical, cultural or other contexts. (S)

7870 (JDC 8270) Comparative Legal History. Cr. 3

Comparative study of the history of ancient and modern legal systems, with particular regard to possible relationships between law and the social and intellectual context in which it has developed. (Y)

7880 Administration of Historical Agencies. Cr. 3

The operation of public and private historical agencies, archives and museums. Determination of agency priorities, problems of staffing and finance, governmental regulations, community relations, and professional ethics. (I)

7890 Conservation and Administration of Photograph Collections. (LIS 7730) Cr. 3

Basic course in the fundamentals of photograph conservation; procedures for the organization and control of photographic collections used for research and historical documentation in archives, libraries, historical agencies and museums. (W)

7990 Directed Study. Cr. 1-3 (Max. 12)

Prereq: written consent of adviser and graduate officer. (T)

7999 Master's Essay Direction. Cr. 1-3

(T)

8020 Seminar in Nineteenth Century American History. Cr. 3 (Max. 12)

Prereq: HIS 7830 or consent of graduate director. (I)

8030 Seminar in Modern American History. Cr. 3 (Max. 12)

Prereq: HIS 7830 or consent of graduate director. (I)

8040 Seminar in the History of the Foreign Relations of the United States. Cr. 3 (Max. 6)

Prereq: HIS 7830 or consent of graduate director. (I)

8050 Seminar in the Constitutional and Legal History of the United States. (LEX 8386) Cr. 3

Prereq: HIS 7830 or consent of graduate director. (I)

8060 Seminar in North American Labor History. Cr. 3 (Max. 12)

Prereq: HIS 7830 or consent of graduate director. (B)

8110 (HED 8530) Seminar in the History and Philosophy of Higher Education. (EHP 7670) Cr. 4

The growth and development of American higher education including events, circumstances, and influential ideas. Comparison of systems of higher education in selected other countries. Emphasis on the relationship between social, political, and economic change and the evolution of higher education. (Y)

8160 Seminar in Comparative Labor History. Cr. 3 (Max. 12)

Prereq: HIS 7830 or consent of graduate director. (B)

8210 Seminar in Medieval History. Cr. 3 (Max. 12)

Prereq: HIS 5360 or 5370. (B)

8240 Seminar in Modern European History. Cr. 3 (Max. 12)

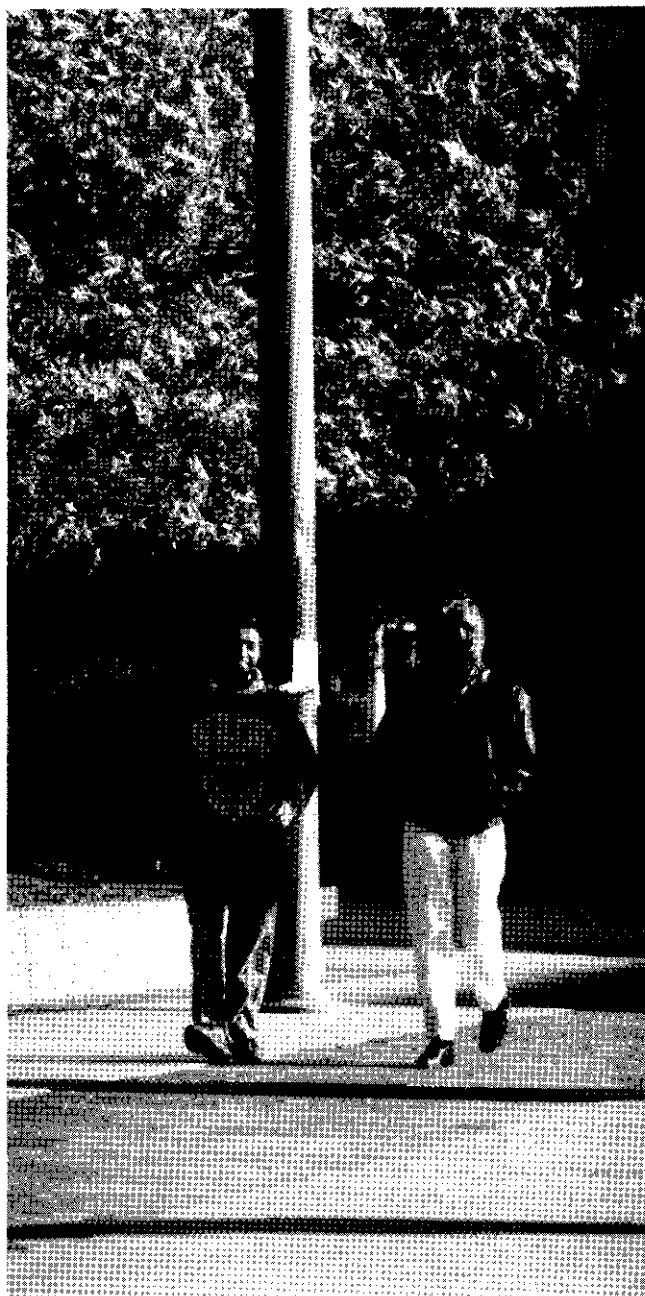
Prereq: HIS 7830 or consent of graduate director. (B)

8999 Master's Thesis Research and Direction. Cr. 1-8 (Max. 8)

(T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16 (30 req.)

Prereq: consent of doctoral adviser. Open only to Ph.D. candidates. Offered for S and U grades only. Register in multiples of three credits or as approved by graduate adviser and graduate dean. (T)



LINGUISTICS

Office: Room 4025, 51 West Warren; 577-8642

Director: Ellen Barton

Participating Faculty

Ellen Barton, *Associate Professor, English*

Eugenia Casielles-Suarez, *Assistant Professor,*

Romance Languages and Literatures

Walter Edwards, *Professor, English*

Joel Itzkowitz, *Associate Professor, Classics, Greek and Latin*

Alexis Manaster-Ramer, *Professor, Computer Science*

T. Michael McKinsey, *Professor, Philosophy*

Bruce Morgan, *Assistant Professor, English*

Ljiljana Progovac, *Associate Professor, English*

Martha Ratliff, *Associate Professor, English*

Aleya Rouchdy, *Professor, Near Eastern and Asian Studies*

Patricia Siple, *Associate Professor, Psychology*

Rebecca Treiman, *Professor, Psychology*

Frances Trix, *Associate Professor, Anthropology*

Graduate Degree

MASTER OF ARTS in Linguistics

Linguistics is devoted to the scientific study of language structure and use. The Linguistics Program at Wayne State offers an interdisciplinary approach to this field, permitting students to explore a wide range of topics and issues in language research. The program offers courses from the major areas of the field, including (a) the structural aspects of sentences (syntax), words (morphology), and speech sounds (phonology), (b) the historical development of language, (c) the semantic and pragmatic basis of language interpretation in sentences and discourses, (d) language variation and use in social contexts (sociolinguistics), (e) the processing and acquisition of language (psycholinguistics), and (f) the application of language to other areas of human knowledge.

Training in linguistics prepares students for advanced work in linguistic research, as well as for employment in teaching English and foreign languages; computer programming (especially in natural language processing); civil service and diplomatic work; broadcasting, mass media and public relations; and generally any profession requiring the precise use or analysis of speech or writing. The Linguistics Program is administered by a director and an advisory committee of participating faculty who regularly teach courses for the Program.

Master of Arts in Linguistics

Admission Requirements: Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. In addition, applicants to the linguistics program must have taken at least one year of a foreign language.

Candidacy must be established by the time twelve credits have been earned.

DEGREE REQUIREMENTS: The master's degree is offered by the College of Liberal Arts as a Plan B master's option: thirty credits in course work plus a three-credit essay. All course work must be completed in accordance with the regulations of the Graduate School and the College governing graduate scholarship and degrees; see pages 16-30 and 204-206, respectively.

The student is required to complete a basic core of general linguistics courses and then to concentrate on a particular area of linguistics, for example, linguistic structure, ethnolinguistics, psycholinguistics, sociolinguistics, or the study of a particular language. Programs are to be planned in consultation with an adviser and are to be approved by the Linguistics Committee. A master's essay is required.

The following courses must be taken if the student has not completed them as an undergraduate:

Credits

LIN 5700 — Introduction to Linguistic Theory.....	3
LIN 5290 — Phonology.....	3
LIN 5300 — Theory of Syntax.....	3

In addition, nine credits must be elected from the following:

LIN 5310 — Language and Culture.....	3
LIN 5570 — Philosophy of Language.....	4
LIN 5720 — Topics in Language..... (Max. 12 Cr.)	3
LIN 5770 — Sociolinguistics.....	3
LIN 6710 — Psycholinguistics.....	3
LIN 7710 — Advanced Studies in Linguistic Structure..... (Max. 12 Cr.)	4
LIN 7720 — Advanced Studies in Language Use..... (Max. 12 Cr.)	4
LIN 7770 — Discourse Analysis.....	4

The remaining courses should be elected from the following list of Courses of Instruction in a way that meets the interests of the student and forms a coherent program of study.

GRADUATE COURSES (LIN)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system and signs, see page 509

5050 (PHI 5050) Advanced Symbolic Logic. Cr. 4

Prereq: junior, senior, or graduate standing. Formal, extensive treatment of first-order predicate logic with emphasis on the notions of a formal logical language and truth in a model; the logic of identity; definite descriptions; brief introductions to set theory and the metatheory of propositional and first-order logic; some additional advanced topics to be selected by the instructor. (Y)

5200 (PHI 5200) Modal Logic. Cr. 4

Prereq: PHI 1850 or PHI 1860 or consent of instructor. The logic of necessity, possibility, and other modal notions as they occur in epistemic and deontic contexts. (B)

5210 (ARB 5210) Arabic Sociolinguistics. (N E 5210) Cr. 3

No knowledge of Arabic required. Arabic dialectology; Arabic as a minority language in contact. Theories and techniques developed outside Arabic, and their applicability to Arabic situations. (F)

5230 (ARB 5230) Structure of Arabic. (N E 5230) Cr. 3

No knowledge of Arabic required. Survey of historical constitution and theoretical structure of Arabic. (Y)

5290 (ENG 5710) Phonology. Cr. 3

Prereq: LIN 5700. The sound systems of a variety of human languages compared and contrasted in an introduction to the diversity

and similarities in human sound systems. Theories of the nature of sound systems and methods of analysis in phonology and morphophonology will be presented. (Y)

5300 (ENG 5740) Theory of Syntax. Cr. 3

Prereq: LIN 5700. The theory of grammatical systems examined through analysis of sentence and word formation in a variety of human languages. Diversity and universals in grammar and theories of syntax. (Y)

5310 (ANT 5310) Language and Culture. Cr. 3

Prereq: ANT 2100 or ANT 5200 or SOC 2010 or consent of instructor. Interconnections of language and culture in distant and local communities, in contextx where languages are declining or developing anew, and in life cycle and ordinary contextx of daily life. Students explore their own language and cultural backgrounds and those to which they are drawn. (F)

5320 (ANT 5320) Language and Societies. Cr. 3

Contemporary linguistic anthropologists see language as a form of social action. How this understanding of language in society has evolved: classic works in linguistic anthropology and contemporary studies. Research in language in society. (W)

5570 (PHI 5570) Philosophy of Language. Cr. 4

Prereq: PHI 1850 or PHI 1860 or any philosophy course from the Philosophical Problems group or graduate student in linguistics or consent of instructor. Intensive investigation and discussion of philosophical problems concerning meaning, truth, and the nature of language. (B)

5630 (PHI 5630) Twentieth Century Analytic Philosophy I. Cr. 4

Prereq: PHI 1850 or PHI 1860 and any philosophy course from the Philosophical Problems group or consent of instructor. Major works, movements, and writers in the analytic tradition in the twentieth century up to the 1940s. Frege, Russell, Moore, the early Wittgenstein, Carnap. (B)

5700 (ENG 5700) Introduction to Linguistic Theory. Cr. 3

Introduction to the scientific study of language and methodologies of linguistic analysis: phonetics and phonology, morphology, syntax, semantics, sociolinguistics, and pragmatics. Introduction to selected disciplinary and interdisciplinary topics: typology and universals, communication systems, psycholinguistics, sociolinguistics, historical linguistics, anthropological linguistics. (T)

5720 (ENG 5720) Topics in Language. Cr. 3 (Max. 12)

Topics such as morphology, semantics, pragmatics, historical linguistics, history of English, pidgins and creoles, language variation, to be announced in Schedule of Classes. (T)

5730 (ENG 5730) Traditional Grammar. Cr. 3

Comprehensive analysis of English sentence structure and parts of speech using the terminology and descriptive approach of traditional grammar. (T)

5750 (ENG 5750) Theory of English as a Second Language. Cr. 3

Detailed examination of theories of language and language acquisition relevant to the non-native speaker of English. Review of research in language acquisition and language learning. (B)

5760 (ENG 5760) American Dialects. Cr. 3

Survey of chief social and geographic dialects of American English and introduction to theory of language variation. (I)

5770 (ENG 5770) Sociolinguistics. Cr. 3

Identification of sociolinguistic principles used by English speakers and writers in choosing among the different English codes, styles, registers and social dialects in American and other communities. (B)

6200 (PSY 6200) Development of Memory. Cr. 3

Prereq: PSY 3090 and PSY 2400 or equiv.; and consent of instructor for undergraduates. Major theoretical models of memory development will be discussed and used to explore various aspects of the memory process from infancy to adulthood. (I)

6710 (PSY 6710) Psycholinguistics. Cr. 3

Prereq: graduate standing or undergraduates with a strong psychology or linguistics background. Theory and research in various topics in psycholinguistics, including language development, speech perception and production, and language comprehension and memory, discussed within the framework of the behaviorist, generative linguistic and information processing approaches to language. (Y)

7710 (ENG 7710) Advanced Studies in Linguistic Structure. Cr. 4 (Max. 12)

Current issues in linguistic theory, including problems in phonology, morphology, syntax, formal semantics; also included are grammatical organization and the interrelationships among components, constraints on rules, linguistic metatheory and language change. Topics to be announced in Schedule of Classes. (I)

7720 (ENG 7720) Advanced Studies in Language Use. Cr. 4 (Max. 12)

Current problems in language use, including issues in language variation, pidgins and creoles, first language acquisition, perception and production, and linguistic stylistics. Topics to be announced in Schedule of Classes. (I)

7770 (ENG 7770) Discourse Analysis. Cr. 4 (Max. 12)

Analysis of inter-sentential relationships and of larger patterns. Implied and actual exchanges. Information ordering. Multi-level and intersectional analysis of expository prose. Topics to be announced in Schedule of Classes. (B)

7790 (PHI 7790) Seminar in Philosophy of Language. Cr. 6 (Max. 12)

Prereq: PHI 1850 or equiv. or consent of instructor. (I)

7991 (ANT 7991) Directed Study in Linguistics. Cr. 1-9 (Max. 9)

Prereq: written consent of adviser and graduate officer. Open only to M.A. candidates or Ph.D. applicants. A research problem which requires field work or intensive and systematic reading of original technical literature. (T)

7999 Master's Essay Direction. Cr. 1-3

Prereq: consent of adviser. (T)



NEAR EASTERN and ASIAN STUDIES

Office: 437 Manoogian; 577-3015

Chairperson: Aleya A. Rouchdy

Professor

Aleya A. Rouchdy

Associate Professor

May Seikaly

Assistant Professor

Salim Khaldich

Graduate Degree

MASTER OF ARTS with a major in Near Eastern languages and specializations in Arabic or Hebrew

This department offers programs and courses of instruction which acquaint students with the languages and civilizations of the Near East with emphasis on the classical traditions of that locale.

Master of Arts with a Major in Near Eastern Languages

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Candidates for the master's degree with specialization in either Hebrew or Arabic must have an adequate knowledge of at least one Semitic language and some knowledge of the culture of the Near East.

DEGREE REQUIREMENTS: The master's degree is offered by this department under the following options:

Plan A: *Thirty-two credits including an eight credit thesis.*

Plan B: *Thirty-two credits including a three credit essay.*

All course work must be completed in accordance with the academic procedures of the College and the Graduate School governing graduate scholarship and degrees; see pages 204-206 and 16-30, respectively.

Candidacy must be established by the time fifteen credits have been earned.

— with Specialization in Hebrew

A student specializing in Hebrew is expected to demonstrate ability in the use of Hebraic sources and some proficiency in Arabic. In addition to Hebrew courses, the student will be required to take eight credits in Arabic. Under special circumstances, the student may be advised to elect six credits in cognate courses from the disciplines of history, philosophy, anthropology, linguistics, sociology, and political science. He/she is expected to write a thesis or attend a seminar where he/she must show ability in using sources and in doing original research as well as demonstrate proficiency in a modern language. A final oral and written examination will be required to test the ability of the student in the language and culture of his/her area of specialization. The student's program of study must have approval of the major adviser.

— with Specialization in Arabic

A student specializing in Arabic is expected to demonstrate ability in the use of Arabic sources. Under special circumstances, the student may be advised to elect six credits in cognate courses from the disciplines of history, philosophy, anthropology, linguistics, sociology and

political science. He/she is expected to write a thesis or attend a seminar where he/she must show ability in using sources and doing original research as well as demonstrate a proficiency in a modern language. A final oral and written examination will be required to test the ability of the student in the language and culture of his/her area of specialization. The applicant's program of study must have the approval of the major adviser.

GRADUATE COURSES

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509

ARABIC (ARB)

5010 Medieval Arabic Texts. Cr. 3

Prereq: ARB 2010 or consent of instructor. Reading and translation of Arabic Medieval texts. (Y)

5020 Media Arabic. Cr. 3

Prereq: two years of Arabic study through ARB 2020. Language pertinent to media communications: written, visual and audio material. Background in origin and development of journalism in the Arab world. Current major newspapers and magazines used as basic reading materials. (W)

5100 Teaching of Arabic as a Foreign/Second Language (TAFL). (N E 5100) Cr. 3

Theoretical and conceptual framework of second language learning. Proper training in pedagogy as related to learning Arabic as a foreign/second language. (Y)

5140 Readings in Modern Arabic Literature. Cr. 3

Prereq: knowledge of Arabic above ARB 2020. Advanced readings in modern Standard Arabic. (Y)

5210 Arabic Sociolinguistics. (LIN 5210) (N E 5210) Cr. 3

No knowledge of Arabic required. Arabic dialectology; Arabic as a minority language in contact. Theories and techniques developed outside Arabic, and their applicability to Arabic situations. (F)

5230 Structure of Arabic. (LIN 5230) (N E 5230) Cr. 3

No knowledge of Arabic required. Survey of historical constitution and theoretical structure of Arabic. (Y)

5990 Directed Study. Cr. 3-6 (Max. 9)

Prereq: Undergrad., consent of chairperson; grad., consent of chairperson or instructor. Readings; periodic consultations and reports. (T)

HEBREW (HEB)

5990 Directed Study. Cr. 3-6 (Max. 9)

Prereq: undergrad., consent of chairperson; grad., consent of chairperson and graduate officer. Readings; consultations, reports. (T)

NEAR EASTERN LITERATURE (N E)

5210 (ARB 5210) Arabic Sociolinguistics. (LIN 5210) (N E 5210) Cr. 3

No knowledge of Arabic required. Arabic dialectology; Arabic as a minority language in contact. Theories and techniques developed outside Arabic, and their applicability to Arabic situations. (F)

5230 (ARB 5230) Structure of Arabic. (LIN 5230) (N E 5230) Cr. 3

No knowledge of Arabic required. Survey of historical constitution and theoretical structure of Arabic. (Y)

5700 Topics in Middle Eastern Studies. Cr. 1-4 (Max. 8)

Specialized and topical studies in Middle East events, language, and literature. (Y)

5990 Directed Study. Cr. 3-6 (Max. 9)

Prereq: undergrad., consent of chairperson; grad., consent of chairperson and graduate officer. Readings, consultations, reports. (T)

7999 Master's Essay Direction. Cr. 1-3

Prereq: consent of adviser. (I)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of adviser. (I)



PHILOSOPHY

Office: Room 3001, 51 West Warren; 577-4583

Chairperson: Lawrence B. Lombard

Professors

Richard B. Angell (Emeritus), Herbert Granger, Lawrence B. Lombard, T. Michael McKinsey, Bruce Russell, Robert J. Yanal

Associate Professors

Barbara M. Humphries, Lawrence Powers, William D. Stine, Robert J. Titiev

Assistant Professor

Susan Vineberg

Graduate Degrees

MASTER OF ARTS with a major in Philosophy

DOCTOR OF PHILOSOPHY with a major in Philosophy

Master of Arts with a Major in Philosophy

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Admission requires approval by the Chairperson of the Department. Prerequisites should include courses in logic, value theory, and the history of philosophy. The Graduate Record Examination is required if the student's undergraduate honor point average is below 2.6 for a degree awarded by an accredited institution, or below 3.0 for a degree awarded by a non-accredited institution.

DEGREE REQUIREMENTS: The master's degree is offered by this department under the following options:

Plan A: *Twenty-four credits in course work, plus an eight credit thesis.*

Plan B: *Twenty-nine credits in course work, plus a three credit essay.*

Plan C: *(open only to prospective doctoral candidates registered in the Ph.D. program) Thirty-two credits of course work, plus satisfaction of all Ph.D. logic requirements and passing all doctoral Preliminary Examinations.*

Candidacy must be established by the time twelve credits have been earned. All students in the Master's Program must pass the Departmental examinations in elementary logic before the second year of full-time study.

Doctor of Philosophy with a Major in Philosophy

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16.

DEGREE REQUIREMENTS: Candidates for the doctoral degree must complete ninety credits beyond the baccalaureate degree, including thirty credits of dissertation directed study. All course work must be completed in accordance with the regulations of the Graduate School and the College governing graduate scholarship and degrees, see pages 16-30 and 204-206, respectively. In order to continue in the program and gain admission to candidacy, a student must satisfy the following:

1. Pass PHI 5050 or the Departmental Examination in elementary logic before the second year of full-time study;
2. Complete the Departmental Advanced Logic Requirements by the end of the fourth year of full-time study;

3. Satisfy the Area Requirements in metaphysics/epistemology, value theory, and history of philosophy by the end of the fourth year of full-time study;

4. Pass the Final Qualifying Examination, consisting of a written dissertation proposal and an oral examination on the dissertation topic, by the end of the first semester of the sixth year of full-time study;

5. Demonstrate competence in a foreign language by the end of the first semester of the sixth year of full-time study.

The candidate's doctoral committee must approve the doctoral dissertation prior to an oral presentation open to all interested faculty and students.

Before receiving a Ph.D., the student must give some classroom lectures under the supervision of the faculty of the Philosophy Department.

A detailed statement of departmental degree requirements is available at the Department office.

Assistantships and Fellowships

General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 30 of this bulletin.

A limited number of assistantships and fellowships are available to qualified students. Information may be obtained from the Director of Graduate Admissions in the Philosophy Department.

GRADUATE COURSES (PHI)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

History of Philosophy

5410 Plato. Cr. 4

Prereq: any philosophy course at the 200 level or above, or classics major, or consent of instructor. Selected readings on topics in Plato. (B)

5420 Aristotle. Cr. 4

Prereq: any philosophy course at the 200 level or above, or classics major, or consent of instructor. Selected readings on topics in Aristotle. (B)

5440 Continental Rationalism. Cr. 4

Prereq: any philosophy course at the 2000 level or above, or consent of instructor. Topics concerning Descartes, Spinoza or Leibniz. (I)

5450 British Empiricism. Cr. 4

Prereq: any philosophy course at the 2000 level or above, or consent of instructor. Topics concerning Locke, Berkeley or Hume. (I)

5460 Kant. Cr. 4

Prereq: any philosophy course at the 2000 level or above, or consent of instructor. Selected topics or readings in Kant's philosophy. (B)

5510 Special Topics in the History of Philosophy. Cr. 4 (Max. 8)

Prereq: any course from the History of Philosophy group or consent of instructor. Topics to be announced in Schedule of Classes. (I)

7810 Seminar in History of Philosophy. Cr. 5 (Max. 10)

Study of a philosopher or period. (I)

Theory of Value

5240 Special Topics in Social and Political Philosophy. Cr. 4 (Max. 8)

Prereq: any philosophy course at the 2000 level or above or major in political science or consent of instructor. Selected topics and readings from major social and political philosophers. Topics to be announced in Schedule of Classes. (I)

5270 Philosophy of Law. Cr. 4

Prereq: one philosophy course at the 2000 level or above or pre-law or law student standing or consent of instructor. Intensive investigation and discussion of special topics or particular authors in the philosophy of law. (B)

5280 History of Ethics. Cr. 4

Prereq: one philosophy course at the 2000 level or above or consent of instructor. A survey and discussion of historically important moral philosophers from Plato to Mill. (B)

5300 Twentieth Century Analytic Ethics. Cr. 4

Prereq: any philosophy course at the 2000 level or above or consent of instructor. Important twentieth century moral philosophers in the analytic tradition, such as G.E. Moore, W.D. Ross, Hare, Stevenson, Baier and Rawls. (B)

7830 Seminar in Aesthetics. Cr. 5 (Max. 10)

Prereq: PHI 3700 or consent of instructor. (I)

7840 Seminar in Ethics. Cr. 5 (Max. 10)

Prereq: any 500-level course in philosophy or consent of instructor. (I)

Philosophical Problems

5230 Philosophy of Science. (SOC 6080) Cr. 4

Prereq: PHI 1850 or 1860 or any course from the Philosophical Problems group or consent of instructor. Intensive investigation and discussion of special topics or particular authors in the philosophy of science. Topics and authors to be announced in Schedule of Classes. (Y)

5500 Topics in Metaphysics. Cr. 4

Prereq: any course from the Philosophical Problems group or consent of instructor. Intensive investigation and discussion of special topics or particular authors in metaphysics. Topics and authors to be announced in Schedule of Classes. (Y)

5530 Topics in Epistemology. Cr. 4

Prereq: any course from the Philosophical Problems group or consent of instructor. Intensive investigation and discussion of special topics or particular authors in the theory of knowledge. Topics and authors to be announced in Schedule of Classes. (I)

5550 Philosophy of Mind. Cr. 4

Prereq: any course from the Philosophical Problems group or consent of instructor. Intensive investigation and discussion of special topics or particular authors concerned with the nature and status of the mental and theories about the mental. Topics and authors to be announced in Schedule of Classes. (B)

5570 Philosophy of Language. (LIN 5570) Cr. 4

Prereq: PHI 1850 or 1860 or any philosophy course from the Philosophical Problems Group or graduate student in linguistics or consent of instructor. Intensive investigation and discussion of philosophical problems concerning meaning, truth, and the nature of language. (B)

5630 Twentieth Century Analytic Philosophy I. (LIN 5630) Cr. 4

Prereq: PHI 1850 or 1860 and any philosophy course from the Philosophical Problems Group or consent of instructor. Major works, movements, and writers in the analytic tradition in the twentieth century up to the 1940s. Frege, Russell, Moore, the early Wittgenstein, Carnap. (I)

5640 Twentieth Century Analytic Philosophy II. Cr. 4

Prereq: PHI 1850 or 1860 and any philosophy course from the Philosophical Problems Group or consent of instructor. Major works, movements, and writers in the analytic tradition from the 1940s to the present. Quine, Austin, Ryle, the later Wittgenstein. (I)

5800 Special Topics in Philosophy. Cr. 3-4 (Max. 9)

Topics and prerequisites to be announced in Schedule of Classes. (I)

7790 Seminar in Philosophy of Language. (LIN 7790) Cr. 5 (Max. 10)

Prereq: one 500-level course in philosophy or consent of instructor. (I)

7800 Seminar in Philosophy: Special Topics. Cr. 2-5 (Max. 10)

Prereq: one 500-level course in philosophy or consent of instructor. (I)

7850 Seminar in Epistemology. Cr. 5 (Max. 10)

Prereq: one 500-level philosophy course or consent of instructor. (I)

7860 Seminar in Metaphysics. Cr. 5 (Max. 10)

Prereq: one 500-level philosophy course or consent of instructor. (I)

Logic

5050 Advanced Symbolic Logic. (LIN 5050) Cr. 4

Prereq: junior, senior, or graduate standing. Formal, extensive treatment of first-order predicate logic with emphasis on the notions of a formal logical language and truth in a model; the logic of identity; definite descriptions; brief introductions to set theory and the metatheory of propositional and first-order logic; some additional advanced topics to be selected by the instructor. (Y)

5200 Modal Logic. (LIN 5200) Cr. 4

Prereq: PHI 1850 or 1860 or consent of instructor. The logic of necessity, possibility, and other modal notions as they occur in epistemic and deontic contexts. Propositional and quantified modal logic. (B)

5350 Logical Systems I. (MAT 5350) Cr. 4

Prereq: PHI 1850 or 1860 or MAT 5600 or MAT 5420 or consent of instructor. Metaresults concerning formal systems of sentential and first-order logics; soundness, completeness; independence of axioms; introduction to recursive functions; formalization of elementary arithmetic; discussion of Godel's incompleteness theorem and Church's Theorem. (I)

5390 Logical Systems II. (MAT 5390) Cr. 4

Prereq: PHI 5350 or MAT 5350 or consent of instructor. Detailed proofs of Godel's incompleteness results, Tarski's Theorem and Church's Theorem; formal axiomatic treatment of set theory and selected applications. (I)

5750 Philosophy of Logic. Cr. 4.

Prereq: PHI 1850 or 1860 and one other Philosophy course at the 2000 level or above, or consent of instructor. Topics concerning such issues as the nature of logic, the relation between logic and ontology, and the relation between logic and mathematics. Topics to be announced in the Schedule of Classes. (I)

7870 Seminar in Logic. Cr. 5 (Max. 10)

Prereq: PHI 1850 or 1860, and one 5000-level Philosophy course or consent of instructor. (I)

Special Courses

5990 Directed Reading. Cr. 1-6 (Max. 12)

Prereq: undergrad., consent of chairperson and instructor; grad., consent of chairperson, graduate officer and instructor. Intensive investigation by student on topic chosen by student in consultation with instructor. (T)

7999 Master's Essay Direction. Cr. 1-3 (3 req.)

Prereq: consent of adviser. (T)

8999 Master's Thesis Direction and Research. Cr. 1-8 (8 req.)

Prereq: consent of adviser. (T)

9999 Doctoral Dissertation Direction and Research. Cr. 1-16 (30 req.)

Prereq: consent of doctoral adviser. Offered for S and U grades only. (T)



POLITICAL SCIENCE

Office: 2040 Faculty/Administration Building; 577-2630
Chairperson: Ronald E. Brown

Professors

Philip R. Abbott, David W. Adamany, Timothy Bledsoe, Rondal G. Downing, Peter Eisinger, Charles D. Elder, Richard C. Elling, Otto Feinstein, Theodore B. Fleming, Jr. (Emeritus), Wesley L. Gould (Emeritus), Charles J. Parrish, Frederic S. Pearson, Henry J. Pratt, Murray B. Seidler (Emeritus), Jorge Tapia-Videla

Associate Professors

Ronald E. Brown, James T. Chalmers, Susan P. Fino, Michael Goldfield, Mary Herring, John M. Strate, Thomas Lyke Thompson

Assistant Professors

Brad Roth, Marjorie Sarbaugh-Thompson

Graduate Degrees

MASTER OF ARTS with a major in Political Science

MASTER OF ARTS-JURIS DOCTOR

MASTER OF PUBLIC ADMINISTRATION

*MASTER OF PUBLIC ADMINISTRATION
with a Major in Criminal Justice*

DOCTOR OF PHILOSOPHY in Political Science

The study of political science is aimed at understanding and illuminating the nature and problems of government and the role of politics in the modern world. This is accomplished through systematic exploration of the structure and processes of government at different levels and across nations, through the study of individual and collective political behavior, and through analyses of policy problems and the processes through which public policies are formulated and administered. The field of political science is of special importance to students whose career goals include:

1. Professions likely to involve participation in public affairs, including law, engineering, criminal justice, public health, social welfare and education.
2. Administrative or executive positions in government — local, state or federal.
3. Teaching of political and social science at the secondary, community college and university levels.
4. Positions in the diplomatic, foreign and overseas programs of the U.S. Government and of large private concerns doing business abroad.
5. Leadership, research and staff roles in citizen organizations, political parties, economic and social interest groups, municipal research bureaus and nonprofit organizations.
6. Positions associated with mass communications, such as radio, television and newspapers, where understanding of public affairs and governmental policies and organization is required for accurate reporting and analysis.
7. Positions in private enterprise where knowledge of governmental processes is essential, such as in industrial relations, legislative liaison and public relations.

Master of Arts with a Major in Political Science

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. A strong undergraduate performance is a prerequisite and substantial undergraduate preparation in the social sciences is recommended. Applicants must take the general aptitude sections of the Graduate Record Examination and have the results sent to the Department, 2040 Faculty/Administration Building, Wayne State University, Detroit MI 48202.

Applicants to the program should consult the Department's graduate adviser. Further information on this and other graduate requirements and programs is contained in the department's pamphlet *Policies and Procedures Governing Graduate Study in Political Science*, which is available from the department on request.

DEGREE REQUIREMENTS: The Master of Arts with a Major in Political Science is offered under the following options:

Plan A: *Thirty-three or thirty-four credits including an eight-credit thesis.*

Plan B: *Thirty-three or thirty-four credits including a three-credit essay.*

Depending on the student's program, thirty-three or thirty-four credits, including a minimum of twenty-four credits in political science, are required. All students must satisfy a general Departmental requirement aimed at the development of basic analytic and methodological skills by successfully completing Political Science 5693 (statistics) and Political Science 7660 (research methodology). These courses should be taken early in the student's program of study. In addition to the general requirements, students are expected to distribute their course work between a major and minor field. Students may elect a major concentration in American Government and Politics, Comparative and International Systems, Political Theory, Public Policy, or Urban Politics. The minor field may be in an area of political science other than the major or in a substantive area requiring course work outside of the Department. All course work must be completed in accordance with the regulations of the Graduate School and the College governing graduate scholarship and degrees, see pages 16-30 and 204-206, respectively.

A student's program must be finalized in a *Plan of Work* that should be filed by the time the student has earned twelve credits. The student should consult the Department's graduate adviser for guidance in the development of his/her *Plan of Work* and for the specific requirements of the major concentration. A written, comprehensive examination in the major field is required. If the thesis option is elected, an oral examination on the thesis is also required.

No credit will be granted without authorization of the Department's Graduate Committee for courses in Political Science taken at Wayne State University prior to formal admission to the M.A. program.

Master of Arts/Juris Doctor

This Department in cooperation with the School of Law offers a joint degree program leading to a Master of Arts degree in Political Science with a concentration in Law and Public Policy and a Juris Doctor degree.

Admission: Students in this program must be admitted to both the Law School and the Department of Political Science. These admissions need not be simultaneous. Students who have already been admitted to the Law School are not required to take the Graduate Record Examination, but must otherwise satisfy all departmental requirements for admission to the Master of Arts program (see above) and meet the following prerequisites: some undergraduate background in the social sciences to include course work in American politics and policymaking and in economics. Students lacking in the prerequisites are required to take prescribed course work in addition to the minimum required for the degree.

DEGREE REQUIREMENTS: This degree is offered only as a *Plan B* master's program requiring thirty-three credits including a three credit essay. Credit distribution must consist of twenty-one credits of politi-

cal science including P S 5630, 7660, and the essay credit; and twelve credits in law courses. Programs integrating course selections from the two principal areas are developed on an individual basis, each culminating in a written comprehensive examination.

Upon completion of these M.A. requirements and the Law School requirements for the J.D., students are awarded both degrees. Students may begin course work in either political science or the Law School. However, upon admission to the Law School, students must complete the required first year law curriculum before taking any other courses. Subsequently, a combination of political science and law courses may be taken. For further information regarding the joint program, students should consult the political science graduate advisor.

Master of Public Administration

This degree program is designed to prepare students for careers in the management of public and quasi-public (nonprofit) organizations through a curriculum that emphasizes the study of organizational dynamics, the legal and political context of public management, management techniques, and the analysis of public policies.

Accreditation: The program is accredited by the National Association of Schools of Public Affairs and Administration (NASPAA).

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Applicants should consult the Department's M.P.A. program director. Undergraduate preparation in the social sciences is recommended. Additional undergraduate course work may be specified where such preparation is inadequate. All applicants *must take* the general aptitude sections of the Graduate Record Examination and have the results sent to the Department.

For further information, prospective applicants should consult the *Graduate Program in Public Administration* brochure which is available from the Department on request.

DEGREE REQUIREMENTS: The Master of Public Administration is offered under the following option:

Plan C: *Thirty-nine credits in course work.*

Of the thirty-nine credits required for the degree, at least twenty-four of these credits must be earned in political science. Students without significant administrative background must meet an additional requirement of at least three credits of supervised internship over and above the minimum of thirty-nine credits otherwise required. All students must complete twenty-four credits of core requirements including P S 6640 7300, 7320, 7330, 7340, 7410 7660, and ECO 6450. As part of the thirty-nine credits, students are also required to complete an area of concentration consisting of at least nine credits, which may require course work outside of political science.

A student's program must be finalized in a *Plan of Work* which should be filed by the time the student has earned twelve credits. The student should consult the department's M.P.A. program director for guidance in preparing this *Plan of Work*. A written, comprehensive examination in public administration at the end of course work is required.

All course work must be completed in accordance with the regulations of the Graduate School and the College governing graduate scholarship and degrees, see pages 16-30 and 204-206, respectively. No credit will be granted for courses taken at Wayne State prior to formal admission to the M.P.A. program without prior authorization of the Department's Graduate Committee.

Areas of Concentration: Students in the M.P.A. program are required to select a substantive area of concentration consisting of a minimum of nine credits of interrelated course work. Students must consult with, and secure the approval of, the M.P.A. program director prior to undertaking this part of the program. A number of possible concentrations are listed below, but other areas specifically designed in light of a student's interests and career goals may be developed in consultation with the M.P.A. program director.

Criminal Justice Policy and Administration

Economic Development Policy and Administration

Gerontology and Aging Policy Management

Health Services Administration

Organizational Behavior and Management

Personnel Systems and Human Resources Management

Policy Analysis and Evaluation

Public Finance

Social Welfare Policy Management

Urban Policy and Management

Certificate in Gerontology: In conjunction with their degree work, M.P.A. students may also pursue a certificate in gerontology offered through the Wayne State University Institute of Gerontology. Students interested in this program should refer to the Graduate School General Information section of this bulletin, beginning on page 16.

Certificate in Economic Development: In conjunction with their degree work, M.P.A. students may also pursue a certificate in economic development, offered through the College of Urban, Labor, and Metropolitan Affairs. Students interested in this program should consult the College of Urban, Labor, and Metropolitan Affairs, page 423.

Master of Public Administration with a Major in Criminal Justice

This program is designed to prepare students for administrative positions in the criminal justice system. It combines basic training in public management with a substantive concentration in criminal justice.

Admission: Requirements for admission to this program are the same as those for the M.P.A. degree (see above). Applicants should consult the department's M.P.A. program director.

DEGREE REQUIREMENTS: The Master of Public Administration with a major in Criminal Justice is offered under the following option:

Plan C: *Thirty-nine credits of course work.*

Thirty-nine credits of graduate course work are required for this degree, but three additional credits of supervised internship are required for students without significant administrative background. All students must complete the twenty-four credits of core course work required for the M.P.A. (see above). In addition, students will take at least fifteen credits of course work relating to the field of criminal justice. This work may require courses not only in political science and criminal justice, but in other departments as well.

A student's program must be finalized in a *Plan of Work* which should be filed by the time the student has completed twelve credits. The student should consult the department's M.P.A. program director for guidance in developing his/her *Plan of Work*. A written, comprehensive examination is required.

All course work must be completed in accordance with the regulations of the Graduate School and the College governing graduate scholarship and degrees, see pages 16-30 and 204-206, respectively.

Further information is contained in the *Graduate Programs in Public Administration* brochure which is available from the Department on request.

'AGRADE' — Accelerated Graduate Enrollment

The Department of Political Science permits undergraduate majors with superior academic records to petition for accelerated graduate enrollment under the 'AGRADE' program of the College of Liberal Arts. This program allows qualified seniors to apply credits earned in specifically approved courses to both a bachelor's and a master's degree. Acceptance in the program is governed by the rules and procedures set forth by the College (see page 169). Students in the program must also satisfy the Department's normal admission requirements for the master's degree, including the aptitude sections

of the Graduate Record Examination, in order to be admitted to the Graduate School. For further details, students should contact the Department's graduate adviser.

Doctor of Philosophy with a Major in Political Science

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. The doctoral program is open only to highly qualified students. Those interested are urged to secure the pamphlet *Policies and Procedures Governing Graduate Study in Political Science* by writing to the Department, and to review the regulations concerning graduate study in the Graduate School section of this bulletin (see pages 16-30).

All students are required to take the general aptitude sections of the Graduate Record Examination. All applications for admission to the doctoral program in political science must have the approval of the Departmental graduate committee. Applicants may apply for admission at any time, but all application materials must be received at least six weeks prior to the start of the semester for which admission is sought. Applicants seeking financial aid should apply for Fall semester admission and submit all application materials by February 15.

The doctoral degree in political science indicates not merely superior knowledge of this discipline but also intellectual initiative and the ability to design and carry out independent research and evaluation. Students in their pre-candidacy stage will be judged on the basis of these attributes as well as on their grade-point performance. Possession of a master's degree does not automatically warrant admission to doctoral study.

DEGREE REQUIREMENTS: A Ph.D. student is required to complete a minimum of ninety graduate credits, thirty of which are earned through the dissertation and at least eight of which must be earned outside of the Department. The student's course work will be distributed over one major and two minor fields of political science. It will also involve the development of a substantive specialization that will normally require course work outside political science. Major concentrations may be elected in American Government, Public Administration, Public Policy, or Urban Politics. Minor concentrations may be in any of the above or in Political Theory or in Comparative and International Systems. Other concentrations may be allowed upon approval of the Departmental graduate committee. Students should consult the graduate adviser regarding the specific requirements of these concentrations. Satisfactory completion of written and oral final qualifying examinations are a condition for candidacy.

Admission to candidacy for the doctor's degree will usually require at least two years of full-time graduate study beyond the bachelor's degree. It is granted upon fulfillment of the following requirements:

1. Completion of Departmental and Graduate School residence and course requirements, including Political Science 7660 and 8600.
2. Filing an approved *Plan of Work* with the Graduate School.
3. Completion of a special research skill requirement and a general statistics requirement, Political Science 5630 and 6640 (or their equivalents);
4. Completion of a preliminary oral qualifying examination;
5. Completion of the final qualifying examination (written and oral);
6. Approval of a Dissertation prospectus.

Dissertation: The candidate is required to submit a doctoral dissertation on a topic satisfactory to his/her Faculty Advisory Committee, designed to demonstrate proficiency in political science analysis, a capacity for independent and creative research, and the ability to perfect and follow through on an appropriate research or evaluation design.

Assistantships and Scholarship Awards

Students admitted to graduate study in Political Science may apply for University fellowships, scholarships, and other forms of financial aid as described beginning on page 30. In addition, they may be eligible for the following assistantships, and scholarship awards offered through the Department.

Assistantships: Teaching and research assistantships in the Department of Political Science are available on a competitive basis to qualified students. Inquiries and applications should be directed to the Department's graduate adviser.

Awards:

The David Adamany Scholarship Award is given annually to an outstanding graduate student. Inquiries and applications should be directed to the Department Chairperson.

The Alfred M. Pelham Scholarship Award is given annually to a promising current or entering student in public administration. Candidates are nominated by the faculty, but applications are also accepted by the M.P.A. program director.

The Stephen B. Sarasohn Scholarship Award is given annually to one or more outstanding students to encourage and support graduate study, especially full-time study, in the Department. Candidates may be nominated by the faculty or apply directly. Inquiries and applications should be directed to the Department's graduate adviser.

The David H. Shephard Scholarship Award is given annually to an outstanding graduate student anticipating a career in public service. Nominations are made by the faculty.

Honorary Societies

Pi Sigma Alpha is the Wayne State chapter of the National Political Science Honorary Society for outstanding political science students.

Pi Alpha Alpha is the Wayne State chapter of the National Public Administration Honorary Society for outstanding public affairs/administration students.

GRADUATE COURSES (P S)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

5030 African American Politics. (AFS 5030) Cr. 4

Nature and texture of black politics; various perspectives on politics by blacks; the impact of blacks on American politics. (Y)

5040 Religion and Politics. Cr. 3

Prereq; P S 1010 or 1030. Religion and American political culture; religious institutions and religious movements; church lobbying in national, state, and local governments; specific manifestations of reli-

gion and politics; Afro-Americans, women and conservative Christians. (B)

5050 Politics and the Mass Media. Cr. 3

Prereq: P S 1010. Role of communications media in modern politics. Historical evolution of media; political impact of newspapers, radio and television; polling and the media; political advertising; media law; mass media and the future of American democracy. (Y)

5110 Constitutional Law. Cr. 4

Examination of the power of judicial review, barriers to court review, distribution of powers in the national government, federal-state relations, federal-state power to regulate and tax interstate commerce, and protection of property through the due process clause. (Y)

5120 Constitutional Rights and Liberties. Cr. 4

The Bill of Rights and the Fourteenth Amendment's due process and equal protection clauses, including rights of criminal defendants, freedom of speech and religion, race and sex discrimination. (Y)

5220 Issues in Urban Public Policy and Management. (U P 5150) Cr. 4

Prereq: P S 2240 and 2310 or consent of instructor. Examination of influences on urban policy formation and implementation. Problems of service distribution, policy impacts and policy evaluation in urban areas. Public administration in urban settings with focus on: program development/implementation, public facilities planning, land use controls, and public services. (B)

5510 U. S. and Canadian Political Thought. Cr. 4

Critical analysis of U. S. and Canadian political thought including the forms liberalism has taken throughout the history of both countries and the challenges of conservatism, democratic radicalism, and socialism; emphasis on role of political thought in public policy disputes. (B)

5560 Biopolitics. Cr. 4

Use of the perspective of the life sciences in the study of political behavior, political evolution, political institutions, and contemporary political issues. (B)

5630 Statistics and Data Analysis in Political Science I. Cr. 4

Student computer account required. Introduction to statistical description and inference in the study of politics, administration and public policy. Introduction to computer data processing and analysis; applications in the study of politics, administration and public policy. Material fee as indicated in the Schedule of Classes. (Y)

5720 China, Japan, and the Far East. Cr. 4

Introductory survey of postwar political and economic development of East Asia: China, Japan, South Korea, Taiwan, Hong Kong, Singapore. (Y)

5740 Ethnicity: The Politics of Conflict and Cooperation. (AFS 5740) (PCS 5500) Cr. 4

Current ethnic (racial, linguistic, religious, and cultural) conflicts regionally, nationally and internationally. Introduction to concepts and analytic perspectives for understanding ethnicity as a factor in nation building and maintenance. (Y)

5770 Government and Politics of Latin America. Cr. 4

Political, social, economic and cultural foundations, the structure and function of institutions, and political processes in Latin America. (B)

5810 American Foreign Policy and Administration. Cr. 4

Shaping and administering United States foreign policy; influences of Congress and interest groups on the White House; secrecy; and the foreign service. (B)

5820 International Law. Cr. 4

To what extent can a legal regime be said to govern international relations? Internal logic of international law; relation between law and power politics in international affairs. Sources of international law (treaty and custom); institutions of the international system and relationship to domestic law and the courts; state sovereignty; role of United Nations and other international organizations. Application of

legal norms to contemporary armed conflicts and human rights catastrophes. (I)

5830 International Conflict and Its Resolution. Cr. 4

Types of international conflict and such methods of resolution as negotiation, mediation and other third-party procedures. (B)

5850 (PCS 5000) Human Rights. (CRJ 5994) (PSY 5710) Cr. 4

Human rights examined as both a theoretical construct and as an internationally recognized set of legal norms. Explores: theoretical traditions that have inspired the human rights movement; critiques from liberal and conservative perspectives; international human rights treaties and efforts to implement their terms; controversies over cultural relativism, economic and social rights, treatment of women, and the question of non-intervention. (Y)

5890 (PCS 5000) Dispute Resolution. (CRJ 5994) (PSY 5710) Cr. 3

Overview of the processes and sectors in the field of dispute resolution including negotiation, mediation, arbitration, and conciliation. (Y)

5992 Political Science AGRADE Internship. Cr. 4

Prereq: consent of undergraduate adviser and M.P.A. program director. Open only to students in B.A./B.P.A./M.P.A. AGRADE Program. Internship to supplement classroom course work with practical experience gained through substantial involvement in a responsible capacity in a public or quasi-public agency or civic organization. (T)

5999 Special Topics in Political Science. Cr. 1-4 (Max. 16)

Prereq: consent of chairperson or instructor. Open only to juniors, seniors and graduate students. Topics to be announced in Schedule of Classes. (T)

6020 Intergovernmental Relations and American Federalism. Cr. 3

Legal, fiscal, political and administrative relationships among participants in American federal system. Current issues and public policies which affect or are affected by intergovernmental relationships. (B)

6050 (ULM 6100) Class, Race, and Politics in America. (AFS 6100) (HIS 5110) (SOC 7330) (U P 7030) Cr. 3

Prereq: senior standing or consent of instructor. Historical and analytic investigation into the role of class and race in American politics. (Y)

6070 Labor and American Politics. (I R 7420) Cr. 3

Role of organized labor in American politics. Historical background, including rise of the UAW and its role in Detroit and Michigan politics. Recent declines; future of organized labor as a force in American politics. (B)

6120 Administrative Law and Regulatory Politics. Cr. 3

Constitutional and statutory status of bureaucratic agencies; administrative powers and procedures; judicial review of administrative decisions; Congressional oversight of bureaucracies. (B)

6340 (I R 7430) Public Sector Labor Relations. Cr. 3

Prereq: graduate standing. History, present functionings, problems and current controversies surrounding public sector unions. (B)

6350 Judicial Administration. (CRJ 6350) Cr. 3

Investigation of management of court processes and personnel; role of court administrators; financing, budgeting, speedy trial, indigent representation problems; alternatives to litigation; impact analysis. (B)

6370 Comparative Public Administration. Cr. 3

Prereq: P S 2310 or equiv. Comparative analysis of major problems and issues affecting national administrative institutions, structures, processes and behavior in a cross-cultural perspective. (B)

6430 Social Welfare: Politics and Policy. Cr. 3

National government policy related to old-age assistance, income maintenance, food stamps, health care, and other entitlement programs. (B)

6440 (ULM 6210) Regional, State, and Urban Economic Development: Policy and Administration. (ECO 6650) (U P 6550) Cr. 3

Prereq: graduate standing. Examination of regional, state, and local economic development theory, analysis, policy and administration. (B)

6640 Statistics and Data Analysis in Political Science II. Cr. 3

Prereq: P S 5630 or equiv. Student computer account required. Modern statistical theory applied to the study of politics, administration, and public policy. Multivariate analysis: analysis of variance, multiple regression and correlation, path analysis, factor analysis, and discriminate function analysis. Material fee as indicated in the Schedule of Classes. (Y)

7030 American Political Processes. Cr. 3

Political socialization, public opinion, and political behavior. Role of political parties and interest groups in the political process. (B)

7040 American Governmental Institutions. Cr. 3

Examination of the functions, structure and processes of major American governmental institutions with special emphasis on the Congress and the Presidency. (B)

7050 American Political Culture. Cr. 3

Analysis of the relationship between belief systems and political action in America. Focus on patterns of social change and conflict management.

7210 Approaches to the Study of Urban Politics. Cr. 3

Examination of aspects of the urban political process and the research methods used in studying them. Topics include forms of political participation, political structures, community power and influence, strengths and weaknesses of case studies, comparative research, aggregate and individual data. (B)

7240 Urban Public Policy. (U P 7650) Cr. 3

Influences on urban policy makers, policy-making and implementation, service distribution and policy impacts. Applications to substantive policy areas. (B)

7250 Seminar in Urban Administration. (U P 7250) (ULM 7250) Cr. 3

Public administration in agencies with urban-related policy and program functions. Focus on: public services delivery; urban systems development; program-project design, implementation and evaluation; and intergovernmental relations. (B)

7260 (ULM 7260) Urban Poverty and Racial Segregation. (AFS 6600) (ANT 7260) (SOC 7350) (U P 7260) Cr. 3

Prereq: graduate standing. Review of theories of poverty from various economic/political perspectives; historical intervention policies; current literature on the interplay of racial, economic and spatial factors on growing economic inequality among urban whites and African-Americans. Political rationale and meaning of the 'underclass' debate. (Y)

7300 Public Administration and its Environment. (U P 7550) Cr. 3

Examination of the development of public bureaucracy in the United States and the political, legal and social forces shaping it. Emergence and evolution of public administration as both a profession and a field of study. The role of public bureaucracies in the political process and efforts to ensure administrative accountability and responsiveness to the democratic system. Administrative relationships with elected executives, legislatures, the judiciary, the media and interest groups. (Y)

7310 Public Management Internship. Cr. 3

Prereq: twenty-one credits in public administration and consent of departmental M.P.A. program director and graduate adviser. Open only to public administration graduate students. Internship designed to supplement and integrate graduate course work with practical knowledge and experience gained from employment in a responsible capacity in a public agency. (T)

7320 Organization Theory and Behavior. Cr. 3

Study of major theoretical approaches to the structure, functioning and performance of organizations and the behavior of groups and individuals within them. (Y)

7330 Public Budgeting and Finance. Cr. 3

Prereq: P S 7300. Processes of public budgeting in the United States; political dynamics of budgetary decision-making; assessment of efforts to change budget systems; use of the budget as an instrument of economic policy; expenditure patterns and revenue sources. (Y)

7340 Public Personnel Management. Cr. 3

Prereq: P S 7300. Examination of the objectives of the public personnel systems of American governmental units; analysis of current practices and techniques for recruiting, selecting, training, promoting, compensating and removing public employees. Major issues in public personnel management such as collective bargaining, equal employment opportunity, civil service reform and employee productivity and performance. (Y)

7360 Health Care Management and Service Delivery. Cr. 3

Management processes, techniques and problems in the delivery of health services by a variety of proprietary, nonprofit and public organizations including hospitals, HMOs, public health departments and nursing homes. Managing patient traffic, utilization review, quality assurance, coordination and control, employee relations and financial management issues. (Y)

7375 Professional Development Seminar. Cr. 1-4

Analysis of managerial techniques and practices currently used by administrators in the public sector. Emphasis on managerial applications of information technology, administrative writing and presentation skills, and organizational and behavioral approaches and techniques. Content areas will vary with semester offerings. (Y)

7380 Financial Administration of Health Services. Cr. 3

Analysis of impact of government policy on the financial management of health facilities and services such as hospitals, HMOs, clinics and nursing homes. (Y)

7410 Policy Formation and Implementation. Cr. 3

Analysis of the processes through which public policy is made and implemented. Examination of the factors that promote or impede the development and realization of rational, effective, and responsive public policy. (Y)

7420 Normative Issues in Public Policy. Cr. 3

Exploration of the normative foundations and implications of public policy issues. (B)

7430 Health Care Policy in the United States. Cr. 3

Evolution of health care policy in the United States; current health programs, their social consequences and possible alternatives. (Y)

7440 Public Policy and the Aged. Cr. 3

Analysis and evaluation of public policy issues involving government's role and programs in relation to senior citizens. (B)

7460 Program Evaluation. Cr. 3

Prereq: P S 7660 or equiv. Theory and practice of program evaluation. Role of program evaluation in the policy process. A number of theories of evaluation will be presented, followed by a discussion of techniques. Topics include total quality management, benchmarking; utilization of evaluation. (B)

7470 Comparative Public Policy. Cr. 3

Comparison of public policy problems faced by different countries and the public policy solutions addressed to them. Emphasis on what can be learned from policy experience of other countries and why policies differ among countries and to what effect. (B)

7480 Policy Analysis for Administration. Cr. 3

Introduction to the conceptual foundations of public policy analysis as well as training in various policy analysis tools. Opportunities for students to do policy analysis. (Y)

7550 Topics in the History of Political Thought. Cr. 3-6
Survey of selected political theorists by period or theme; emphasis on interpretation of major works. (B)

7620 (ULM 7220) Seminar in Survey Research Methods. (ANT 7220) (SOC 7220) Cr. 3

Prereq: advanced undergraduate or graduate training in general research methods and statistics; open to upper level undergraduates with consent of instructor. Hands-on approach to understanding the strengths and potential pitfalls of the survey method. Topics include: design of survey research (including theory, measurement and ethics), sampling (including special populations), questionnaire development and survey administration. (F)

7660 Research Methods in Policy and Politics. Cr. 3

Prereq: P S 5630 or equiv. Analytic methods in the study of politics and public policy: formulating researchable problems, use of models, research design, measurement, data collection, and automatic data processing. (Y)

7680 Research Seminar in Political Science. Cr. 3

Prereq: P S 7660 or equiv. Original research in selected topics in political science carried out under the supervision of the instructor. Projects developed and shared in seminar. Focal topics or themes determined by instructor. (B)

7790 Seminar in Comparative Politics. Cr. 3 (Max. 9)

Selected topics in comparative politics to be announced in Schedule of Classes.

7810 International Politics: Theories and Approaches. Cr. 3 (Max. 9)

Theories and approaches to the study of international politics, such as theories of national interest and power politics, foreign policy decision-making, conflict management, and systems theory. (B)

7850 (D R 7100) Roots of Social Conflict. (P S 7850) Cr. 3

Prereq: graduate standing. Background and immediate causes of social conflict, from interpersonal to national to international settings, from ethnic to gender conflict; review of destructive and constructive aspects of conflict. (Y)

7890 Seminar in International Relations. Cr. 3 (Max. 6)

Selected topics in the study of international organization, law, and politics, to be announced in Schedule of Classes. (B)

7995 Directed Study. Cr. 1-6

Prereq: fifteen graduate credits in political science; written consent of chairperson and graduate adviser. (T)

7997 Research in Political Science. Cr. 1-9

Open only to students admitted to doctoral study. (T)

7999 Master's Essay Direction. Cr. 1-3 (3 req.)

Prereq: consent of adviser. (T)

8000 Readings in Political Science. Cr. 3 (Max. 6)

Prereq: consent of adviser. (T)

8600 Philosophic Problems of Social and Political Inquiry. Cr. 3

Required of all Ph.D. applicants. Exploration of selected problems in the philosophy of social science. (B)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of adviser. (T)

9999 Doctoral Dissertation and Research. Cr. 1-16

Prereq: consent of doctoral committee. Offered for S and U grades only. (T)

ROMANCE LANGUAGES and LITERATURES

Office: 487 Manoogian Hall; 577-3002

Chairperson: Charles J. Stivale

Academic Services Officer: Teresa L. Pickering

Professors

Vincent C. Almazan (Emeritus), Fernande Bassan (Emerita), Manuela M. Cirre (Emerita), Andrea di Tommaso, Jesus Gutierrez (Emeritus), Francisco J. Higuero, E. Burrows Smith (Emeritus), Donald C. Spinelli, Charles J. Stivale, Richard Vernier (Emeritus)

Associate Professors

Jorgelina Corbatta, Michael J. Giordano, Louise M. Jefferson, Louis Kibler, Charlotte Lemke (Emerita), Manuel Martin-Rodriguez, Sol Rossman (Emeritus), Donald E. Schuriknight, A. Monica Wagner (Emerita)

Assistant Professors

Theresa A. Antes, Catherine Barrette, Eugenia Casielles, Fabienne-Sophie Chauderlot, John E. Eipper, Heather N. Lancaster, Debora Maldonado-DeOlivera, Lisa Vollendorf

Lecturers

Raffaele DeBenedictis, Connie Green, Marilynn Rashid, Carole Verhelle

Director of Language Laboratory Center

Dallas Kenny

Graduate Degrees

MASTER OF ARTS with a major in French, Italian, or Spanish

DOCTOR OF PHILOSOPHY with a major in Modern Languages

Master of Arts Degrees

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. In addition, the Graduate Record Examination is strongly recommended, and three letters of recommendation are required of all applicants to the M.A. and Ph.D. programs.

DEGREE REQUIREMENTS

The master's degree is offered by this department under the following options:

Plan A: *Twenty-four credits in course work, plus an eight-credit thesis.*

Plan B: *Twenty-nine credits in course work, plus a three-credit essay.*

Plan C: *Thirty-two to thirty-three credits in course work depending on the Plan of Work.*

Under all Plans, the Graduate School requires a minimum of six credits at the 7000 level or above.

Students envisaging a teaching career on the college level or intending to continue to the doctoral degree may elect either Plans A, B, or C — Literature. At present, Plan C — Literature is available only in French. Plan C — Language and Culture, available only in French and Spanish, is intended primarily for those interested in teaching on the elementary and secondary school levels; students who elect Plan C — Language and Culture should keep in mind that if, at a later date, they decide to go on to a doctorate, they may lack entrance requirements and some of the work they have done may not be applicable to the doctoral program.

Scholarship: All course work must be completed in accordance with the academic procedures of the College of Liberal Arts and the Graduate School governing graduate scholarship and degrees; see pages 204-206 and 16-30, respectively.

— with a Major in French

Under Plans A and B: Candidates are required to take French 7300. No more than four credits in course work on the 5000 level may be counted toward the degree. With the consent of the candidate's adviser, up to six credits may be elected in related fields. At least five weeks prior to the time the degree is to be granted, candidates must pass a comprehensive oral examination based on the French area reading list for the Master of Arts degree.

Under Plan C — Literature: Candidates are required to take French 7300. No more than four credits in course work on the 5000 level may be counted toward the degree and course work must include two graduate seminars. With the consent of the candidate's adviser, up to six credits may be elected in related fields. No essay is required for Plan C Literature. Candidates for the degree must, upon completion of their course work, take a comprehensive written and oral examination based on the French area reading list for the Master of Arts Degree.

Under Plan C — Language and Culture: Candidates are required to take French 5100, 5200, 5400, 6400, and 6450; however, any part of this requirement may be waived by the graduate adviser if he/she judges it has been properly satisfied in previous study. A minimum of twelve credits of French literature in courses on the 6000 level or higher is also required, one of which must be a seminar. With the consent of the candidate's adviser, up to six credits may be elected in related fields. On completion of their course work, candidates will be required to demonstrate a superior command of written and oral French. A final written and oral examination will be given to test their knowledge of French language and culture and those aspects of French literature in which they have had course work.

— with a Major in Italian

Under Plans A and B: Candidates are required to take Italian 7300. At least five weeks prior to the time the degree is to be granted, candidates must pass a comprehensive oral examination based on course work and the Italian area reading list.

— with a Major in Spanish

Under Plans A and B: Candidates are required to take course work in the areas of linguistics, history of the language, and in Peninsular Spanish literature of the Medieval period, the Golden Age, the eighteenth, nineteenth, and twentieth centuries, and Spanish American literature. Candidates are required to write a comprehensive examination as specified in the *Graduate Handbook for Students and Faculty of the Department of Romance Languages and Literatures*, based on the Spanish area reading list for the Master of Arts degree. No oral examination is required.

Under Plan C — Language and Culture: Candidates are required to take a minimum of thirty-three credits in course work. They must elect Spanish 5550 and 5560 and a minimum of nine credits from Spanish 5200, 5300, 6400 and 7510. In addition, a minimum of twelve credits in Hispanic literature at the 6000 level or above is required. At least one of these courses must be in Spanish American literature and one in Spanish peninsular literature. With consent of the graduate adviser, students may elect up to six graduate credits in related areas. Upon completion of their course work, candidates are required to write an examination covering Spanish language and linguistics, Hispanic culture and Hispanic literature, as specified in the *Graduate Handbook for Students and Faculty of the Department of Romance Languages and Literatures*. No oral examination is required.

Doctor of Philosophy with a Major in Modern Languages

The Ph.D. in Modern Languages is an interdisciplinary and interdepartmental program administered jointly by the Department of Romance Languages and Literatures and the Department of German and Slavic Studies. Applicants wishing to major in French or Spanish should contact the Department of Romance Languages.

The Doctor of Philosophy in Modern Languages allows students to combine a major and a minor that best meet their interests and career goals. Several options are available:

Major Concentration: Doctoral students may concentrate their studies in French, German, or Spanish. Thirty-six graduate credits must be completed in one of these major areas.

Minor Concentration: Doctoral students broaden their course of study through the choice of a minor concentration. Minors are available in literary and cultural criticism, French, German, Italian, Russian, or Spanish.

The minor in literary and cultural criticism is fulfilled by taking a series of four designated courses for a total of sixteen graduate credits. These courses, which are taught in English, aim to increase the student's knowledge of criticism and theory in cultural, national, and international contexts. Courses rotate each semester among the German, Italian, French, Spanish, and Slavic language areas.

A minor in a second modern language may be fulfilled by taking sixteen graduate credits in French, German, Italian, Russian, or Spanish. Courses are chosen in consultation with the graduate adviser.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. The Graduate Record Examination is strongly recommended of all applicants to the Ph.D. program. The application for admission and transcripts of all previous college work should be filed in the Graduate School at least three months in advance of the time the applicant plans to register. A letter giving information on the applicant's educational background, experience, objectives, oral fluency in the language, or proposed major concentration and other data of interest to an evaluating committee should be sent by the applicant as soon as possible to the Chairperson of the Department of Romance Languages and Literatures.

DEGREE REQUIREMENTS

Language Requirements: The doctoral candidate must pass a Ph.D. reading examination in one language other than those of his/her major and minor fields. The choice of the language will be determined in consultation with the graduate adviser and subject to the approval of the Graduate Committee.

Course Requirements: A minimum of thirty-six credits on the graduate level in the field of major concentration, sixteen credits in one minor field, and eight credits in related courses. The total program must include thirty credits (excluding dissertation direction) at the 7000 level or above. FRE 7300 (Romance Philology) is required of all graduate students in Romance languages. Course requirements for Master of Arts (Plans A, B and C— Literature) apply in the field of major concentration.

Qualifying Examinations: Within a reasonable time after the completion of all course work, students are required to pass extensive examinations, both written and oral, in the major and minor fields. Later, after the dissertation has been completed, a final oral presentation and defense of it is required.

Fellowships and Assistantships

General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 30 of this bulletin.

University graduate fellowships for students working toward a Ph.D. degree provide a waiver of tuition fees, stipends, and allowances for dependents. Support for summer study is also available. Graduate assistantships with teaching assignments of from four to eight hours per week are available to students working toward a Master of Arts

degree as well as to doctoral candidates. They also provide a waiver of tuition fees and stipends.

GRADUATE COURSES

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

Courses Offered in English

No knowledge of a foreign language is presumed or required for the following courses, which are conducted in English with all readings in English. Except for FRE 6991 and ITA 6500, these courses may NOT count toward a major in the foreign language from which the translations were derived.

French in English Translation (FRE)

6991 Contemporary French Criticism and Literary Theory. Cr. 4

Theory and practice of contemporary French criticism; structuralist and post-structuralist writers: Barthes, Greimas, Derrida, and Lyotard. French majors required to do readings in French. (I)

Italian in English Translation (ITA)

5150 Italian Cinema since 1942. (FLM 5150) Cr. 3 (Max. 9)

Concentrated study of specific trends or the development of individual directors. Topics to be announced in Schedule of Classes. Material fee as indicated in the Schedule of Classes. (B)

6500 Introduction to Literary Criticism. Cr. 4

Overview of various currents of critical theory, focusing on literary and cinematographic texts. The two-fold pedagogical approach, theoretical and empirical, will use semiotics as a disciplinary tool of analysis and apply it to the textual material studies in this course.

FOREIGN LANGUAGE INSTRUCTION

FRENCH (FRE)

5100 (WI) Advanced Speaking and Writing. Cr. 4

Prereq: FRE 2100 or 4100 or consent of instructor. Spoken French in the context of French civilization. Readings and writing skills based on contemporary French texts, translations. (B)

5200 Phonetics and Diction. Cr. 3

Prereq: FRE 2100 or 4100 or consent of instructor. A systematic study of French sounds, phonetic transcriptions; practice in the language laboratory; intensive drills in accurate pronunciation and intonation. (B)

5310 Advanced Composition "sur le Motif". Cr. 4

Prereq: FRE 2100 or 4100. Composition and explication de textes utilizing texts related to Provence. Taught only in Provence at the Wayne State University summer program in Cannes, France. (S)

5400 Advanced Grammar Review. Cr. 3

Prereq: FRE 2100 or 4100 or consent of instructor. Advanced French grammar. Translation exercises from English to French; study of appropriate grammar rules. (B)

5850 (GER 5850) Second Language Instruction: Theory and Methods. (FRE 7850) (GER 7850) (SPA 5850) (SPA 7850) Cr. 3

Theoretical basis of second language teaching models; historical overview of methodologies; current trends in teaching of reading, writing, listening, speaking, and culture. Implications of methodology on materials, classroom techniques, and testing. (B)

5998 Honors Thesis in French. Cr. 3-6

Prereq: consent of French undergraduate adviser. Open only to Honors students in French. (T)

6400 The Structure of French. Cr. 3

Prereq: FRE 5200 or written consent of instructor. Study of various linguistic systems at work in the French language: phonology, morphology, syntax, semantics. (B)

6450 French Civilization. Cr. 4

Prereq: FRE 3610 or 3620 or consent of instructor. Introduction to French history and society from origins of France to the Fifth Republic; interrelation of socio-political developments to cultural movements in French art and thought. (B)

6460 Civilization "sur le Motif". Cr. 4

Prereq: FRE 2100 or 4100. Aspects of modern French civilization in Provence through daily readings and direct contact with the region. Taught only in Provence at the Wayne State University summer program at Cannes, France. (S)

6470 Contemporary French Society and Institutions. Cr. 4

Prereq: FRE 3610 or 3620. French political and social institutions and practices since World War II. Comparative study of examples from American institutions and practices. (B)

6510 French Sixteenth Century Literature. Cr. 4

Prereq: FRE 3610. Study of the principal genres represented by: Marot, Sceve, Labe, Du Bellay, Ronsard, D'Aubigne, Montaigne and others. Topics to be announced in Schedule of Classes. (B)

6630 French Seventeenth Century Literature. Cr. 4

Prereq: FRE 3610 or equiv. or consent of instructor. Historical background, religious and literary movements. Development of the Classical ideal in literature, salons, and academies. Representative authors of non-dramatic literature and the theatre (Corneille, Moliere and Racine). Content varies to cover a genre, literary movement, school or period. Topics to be announced in Schedule of Classes. (B)

6650 French Eighteenth Century Literature. Cr. 4

Prereq: FRE 3610. The four major philosophes: Montesquieu, Diderot, Voltaire and Rousseau; precursors such as Cyrano, Fontenelle and Bayle. Developments in prose fiction and theatre; representative works of these genres. Content varies to cover a genre, literary movement, school or period. Topics to be announced in Schedule of Classes. (B)

6770 Studies in French Literature. Cr. 4

Prereq: FRE 3610 or 3620. Study of one of the major literary genres: prose, poetry or drama; its development from origins to present time. Emphasis on textual analysis. Topics to be announced in Schedule of Classes. (W)

6810 French Nineteenth Century Literature. Cr. 4

Prereq: FRE 3620. Romanticism, Realism, Naturalism, Parnassian poetry, and the theatre of the second half of the nineteenth century. Chateaubriand, Hugo, Flaubert, Zola, Leconte de Lisle, Becque, and others. Course content will vary to cover a genre, or literary move-

ment, school or period. Topics will be announced in the Schedule of Classes. (B)

6840 French Twentieth Century Literature. Cr. 4

Prereq: FRE 3620. Literary movements and representative authors from the turn of the century to the present. Course content will cover a genre or literary movement, school or period. Topics to be announced in Schedule of Classes. (B)

6860 Francophone Literatures. Cr. 4 (Max. 8)

Prereq: FRE 3620 or consent of instructor. Studies in literature of French expression as represented in the distinct traditions of Africa and the West Indies, Canada and Switzerland. Topics to be announced in Schedule of Classes. (B)

6991 Contemporary French Criticism and Literary Theory. Cr. 4

Theory and practice of contemporary French criticism; structuralist and post-structuralist writers: Barthes, Greimas, Derrida, and Lyotard. French majors required to do readings in French. (I)

7300 Introduction to Romance Philology. (ITA 7300) (SPA 7300) Cr. 3

Prereq: graduate major in French, Italian, or Spanish, or consent of Department. Historical development and earliest texts in the Romance languages: Latin substrata, historical diffusion, vulgar Latin, linguistic borrowings, classification, and characteristics of the various Romance languages. (B)

7770 Special Studies in French Literature. Cr. 3-4 (Max. 8)

Prereq: minimum of eight credits in 600-level French literature courses or consent of adviser. Works of an outstanding writer, a literary genre, or of literary trends. (I)

7850 (GER 5850) Second Language Instruction: Theory and Methods. (FRE 5850) (GER 7850) (SPA 5850) (SPA 7850) Cr. 3

Theoretical basis of second language teaching models; historical overview of methodologies; current trends in teaching of reading, writing, listening, speaking, and culture. Implications of methodology on materials, classroom techniques, and testing. (B)

8710 Seminar in the French Renaissance. Cr. 4

Prereq: minimum of eight credits in 600-level French literature courses or consent of instructor. Specified aspect, movement, author, or group of authors. (I)

8720 Seminar in Seventeenth Century French Literature. Cr. 4 (Max. 8)

Prereq: minimum of eight credits in 600-level French literature courses or consent of instructor. Specified aspect, movement, author, or group of authors. (I)

8730 Seminar in the French Enlightenment. Cr. 4 (Max. 8)

Prereq: minimum of eight credits in 600-level French literature courses or consent of instructor. Specified aspect, movement, author, or group of authors. (I)

8740 Seminar in Nineteenth Century French Literature. Cr. 4 (Max. 8)

Prereq: minimum of eight credits in 600-level French literature courses or consent of instructor. Specified aspect, movement, author, or group of authors. (I)

8750 Seminar in Twentieth Century French Literature. Cr. 4 (Max. 8)

Prereq: minimum of eight credits in 600-level French literature courses or consent of instructor. Specified aspect, movement, author, or group of authors. (I)

Special Courses

5000 Minor Language Practicum. Cr. 3 (Max. 9)

Prereq: consent of graduate adviser. Offered for S and U grades only. No degree credit toward Ph.D. Controlled application of active language skills for students electing a Ph.D. minor in French. (T)

5990 Directed Study. Cr. 1-4 (Max. 8)

Prereq: consent of adviser. (T)

7996 Research Project. Cr. 1-4 (Max. 12)

Prereq: consent of graduate adviser. (T)

7999 Master's Essay Direction. Cr. 1-3 (3 req.)

Prereq: consent of adviser. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of adviser. (T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16 (30 req.)

Prereq: consent of doctoral adviser. Offered for S and U grades only. (T)

ITALIAN (ITA)

6500 Introduction to Literary Criticism. Cr. 4

Overview of various currents of critical theory, focusing on literary and cinematographic texts. The two-fold pedagogical approach, theoretical and empirical, will use semiotics as a disciplinary tool of analysis and apply it to the textual material studies in this course.

6610 Dante: Divine Comedy. Cr. 4

Prereq: ITA 3600 or consent of instructor. A close reading of Dante's *Commedia*, with attention to sources, background, and interpretation. (B)

6680 Studies in Renaissance Literature. Cr. 4 (Max. 12)

Prereq: ITA 3600 or consent of instructor. The major contributions of the Italian Renaissance, including lyric poetry from Petrarch to Marino; Boccaccio and the Novella Tradition; Humanism; the epic poetry of Boiardo, Ariosto and Tasso; Machiavelli and the political essayists. Topics to be announced in Schedule of Classes. (Y)

6790 Studies in the Italian Theatre. Cr. 4 (Max. 12)

Prereq: ITA 3600 and 3610 or consent of instructor. The development of the Italian theatre in the Middle Ages and Renaissance; the modern Italian theatre, or study of a single movement. Topics to be announced in Schedule of Classes. (B)

6830 Studies in Modern Italian Poetry. Cr. 4 (Max. 12)

Prereq: ITA 3610 or consent of instructor. Selected studies of movements, themes, periods or poets. Topics to be announced in Schedule of Classes. (B)

6870 Studies in Modern Italian Fiction. Cr. 4 (Max. 12)

Prereq: ITA 3610 or consent of instructor. Study of a genre, movement, theme, or period. Topics to be announced in Schedule of Classes. (Y)

7300 (FRE 7300) Introduction to Romance Philology. (SPA 7300) Cr. 3

Prereq: graduate major in French, Italian, or Spanish or consent of department. Historical development and earliest texts in the Romance languages: Latin substrata, historical diffusion. Vulgar Latin, linguistic borrowings, classifications, and characteristics of the various Romance languages. (B)

Special Courses

5000 Minor Language Practicum. Cr. 3 (Max. 9)

Prereq: consent of graduate adviser. Offered for S and U grades only. No degree credit toward the Ph.D. Controlled application of active language skills for students electing a Ph.D. minor in Italian. (T)

5990 Directed Study. Cr. 1-4 (Max. 8)

Prereq: consent of adviser. (T)

7996 Research Project. Cr. 1-4 (Max. 12)

Prereq: consent of Italian adviser. (T)

7999 Master's Essay Direction. Cr. 1-3 (3 req.)

Prereq: consent of Italian adviser. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)
Prereq: consent of adviser. (T)

SPANISH (SPA)

5100 (WI) Advanced Composition. Cr. 3

Prereq: SPA 3100 or placement. Study and utilization of Spanish in written form: colloquial usage, literary Spanish, commercial Spanish, idiomatic expressions. Brief compositions and translation exercises. Conducted entirely in Spanish. (Y)

5200 Spanish Phonetics. Cr. 3

Prereq: SPA 3100 or consent of instructor. A systematic study of Spanish sounds; intensive drilling in accurate pronunciation. (B)

5300 Advanced Grammar and Stylistics. Cr. 3

Prereq: SPA 5100 or placement. Intensive study of grammar and syntax. Translation of literary texts into Spanish. Free composition and conversation. Conducted in Spanish. (B)

5400 Technical and Literary Translation. Cr. 3

Prereq: SPA 3100. English-Spanish and Spanish-English translations, literary and technical. Idioms in technical, business and legal contexts. Computerized translation technology. (B)

5550 Spanish Culture and Its Tradition. Cr. 3

Prereq: SPA 3610, 3620 or 3630. Spain's cultural history: painting, sculpture, architecture and music, through films, records, newspapers, and the text. (B)

5560 Spanish American Cultures and their Traditions. (CBS 5560) Cr. 3

Prereq: SPA 3610, 3620 or 3630. Spanish America before and after the discovery of the New World. Art, music, customs, contemporary institutions, through films, records, newspapers, gallery visit to Detroit Institute of Art, and the text. (B)

5850 (GER 5850) Second Language Instruction: Theory and Methods. (FRE 5850) (FRE 7850) (GER 7850) (SPA 7850) Cr. 3

Theoretical basis of second language teaching models; historical overview of methodologies; current trends in teaching of reading, writing, listening, speaking, and culture. Implications of methodology on materials, classroom techniques, and testing. (B)

6400 The Structure of Spanish. Cr. 3

Prereq: SPA 5200 or consent of instructor. Principles of linguistics and their application to Spanish. (B)

6410 Spanish Medieval Literature: Origins to 1500. Cr. 4

Prereq: SPA 3610, 3620 or 3630. Main currents and masterworks of Spanish literature from its origins to 1500. (Formerly SPA 6500.) (B)

6420 Spanish Literature of the Renaissance. Cr. 4

Prereq: SPA 3610, 3620 or 3630. Literary genres of the sixteenth century (poetry and narrative: picaresque, pastoral, morisco, and chivalric). (Formerly SPA 6510.) (B)

6430 Spanish Literature of the Baroque Period. Cr. 4

Prereq: SPA 3610, 3620 or 3630. Great poets of the Spanish seventeenth century: Lope de Vega, Gongora, Quevedo; as well as the prose of Quevedo and Gracian. Literary selections studied within the unique cultural climate of the Spanish Baroque. (Formerly SPA 6510.) (B)

6440 Spanish Literature of the Eighteenth Century. Cr. 4

Prereq: SPA 3610, 3620 or 3630. Literature of the Spanish Enlightenment; major works and literary trends and movements in the Spanish eighteenth century up to Romanticism. (Formerly SPA 6520.) (B)

6450 Spanish Romanticism. Cr. 3-4

Prereq: SPA 3610, 3620 or 3630. Origins and development of Romanticism in Spain: theatre, poetry, costumbrismo, and novel. (Formerly SPA 6520.) (B)

6460 The Spanish Novel of the Nineteenth Century. Cr. 4

Prereq: SPA 3610, 3620 or 3630. Representative works of the Realist and Naturalist movements. (Formerly SPA 6993.) (B)

6470 The Spanish Novel of the Twentieth Century. Cr. 4

Prereq: SPA 3610, 3620 or 3630. Novelists of the Generation of 1898, and representative authors before and after the Civil War; includes such trends as Tremendismo, Social Realism, and the contemporary experimental novel. (Formerly SPA 6993.) (B)

6490 Spanish Poetry of the Nineteenth and Twentieth Centuries. Cr. 4

Prereq: SPA 3610, 3620 or 3630. Representative figures and trends in Modern and contemporary Spanish poetry. Post-Romantics, Symbolists, the Generations of 1898 and 1927, and the more contemporary poets. (B)

6560 Cervantes. Cr. 4

Prereq: SPA 3610, 3620 or 3630. A detailed study of Don Quijote. Other short works of Cervantes. (B)

6570 The Comedia. Cr. 4

Prereq: SPA 3610, 3620 or 3630. Analysis of representative plays of Lope de Vega, Ruiz de Alarcon, Tirso de Molina, Calderon, and other dramatists of the Golden Age. (B)

6590 Genres and Topics in Peninsular Spanish Literature. Cr. 3 (Max. 9)

Prereq: SPA 3610, 3620 or 3630. Topics such as modern Spanish theatre, Generation of 1898, to be announced in Schedule of Classes. (B)

6600 Spanish American Colonial Literature. Cr. 4

Prereq: SPA 3610, 3620 or 3630. Major figures from the sixteenth to the nineteenth centuries. Poetry, prose, and theatre; the literature of the conquest; conflicts and tension of the dominant and the conquered societies. (B)

6620 The Spanish American Novel II. Cr. 4

Prereq: SPA 3610, 3620 or 3630. Roots of the modern novel in Spanish America; its stages of evolution through the vanguard period into the contemporary stage, with emphasis on representative figures such as Carpentier, Cortazar, and Garcia Marquez. (Formerly SPA 6860.) (B)

6630 Spanish American Poetry. Cr. 4

Prereq: SPA 3610 or 3620 or 3630. Major poets and their texts from the period of Independence through the early stages of Modernism and Vanguard, to contemporary poetry. (B)

6670 Latin American Novel to 1900. Cr. 3

Prereq: SPA 3610, 3620 or 3630. Late colonial period to 1900. (B)

6690 Genres and Topics in Spanish American Literature. Cr. 3

Prereq: SPA 3610, 3620 or 3630. Topics in the literature of Spanish America, such as the short story or theatre, to be announced in Schedule of Classes. (B)

6700 Spanish Literature of the Silver Age: 1900-1936. Cr. 3

Prereq: SPA 3610, 3620 or 3630. Writers of first three decades of twentieth century; current narratological theories applied to intertextual maneuvers and philosophical concepts. (I)

6710 Unamuno's Existential Fiction. Cr. 3

Prereq: SPA 3610, 3620 or 3630. Important novels of Miguel de Unamuno; emphasis on characters and their agonization in a circumscribed area. (I)

7300 (FRE 7300) Introduction to Romance Philology. (ITA 7300) Cr. 3

Prereq: graduate major in French or Italian or Spanish or consent of department. Historical development and earliest texts in the Romance languages: Latin substrata, historical diffusion. Vulgar Latin, linguistic borrowings, classifications, and characteristics of the various Romance languages. (B)

7510 History of the Spanish Language. Cr. 3

Prereq: SPA 5200 or consent of graduate adviser. Origins, development and linguistic status of the Spanish language in Spain and Spanish America. (B)

7770 Special Studies in Spanish Literature. Cr. 3 (Max. 12)

Prereq: minimum of eight credits in 6000-level Spanish Literature courses. Study of the works of an outstanding writer, a literary genre, or literary trends. (F,W)

7850 (GER 5850) Second Language Instruction: Theory and Methods. (FRE 5850) (FRE 7850) (GER 7850) (SPA 5850) Cr. 3

Theoretical basis of second language teaching models; historical overview of methodologies; current trends in teaching of reading, writing, listening, speaking, and culture. Implications of methodology on materials, classroom techniques, and testing. (B)

8510 Seminar in the Golden Age. Cr. 4 (Max. 8)

Prereq: graduate major or consent of instructor. Topics to be announced in Schedule of Classes. (I)

8550 Seminar in Spanish Literature of the Twentieth Century. Cr. 4

Prereq: graduate major in Spanish or consent of instructor. Topics to be announced in Schedule of Classes. (I)

8610 Seminar in Spanish American Narrative. Cr. 4

Prereq: graduate major in Spanish or consent of instructor. Narrative genres in Spanish America including short story, essay, novel, short novel; development, history, period characterization. Topics to be announced in Schedule of Classes. (I)

Special Courses

5000 Minor Language Practicum. Cr. 3 (Max. 9)

Prereq: consent of graduate adviser. Offered for S and U grades only. No degree credit toward Ph.D. Controlled application of active language skills for students electing a Ph.D. minor in Spanish. (T)

5990 Directed Study. Cr. 1-4 (Max. 8)

Prereq: consent of adviser. (T)

7996 Research Project. Cr. 1-4 (Max. 12)

Prereq: consent of Spanish adviser. (T)

7999 Master's Essay Direction. Cr. 1-3 (3 req.)

Prereq: consent of adviser. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of adviser. (T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16 (30 req.)

Prereq: consent of doctoral adviser. Offered for S and U grades only. (T)

SOCIOLOGY

Office: 2228 Faculty/Administration Building; 577-2930

Chairperson: Donald E. Gelfand

Professors

Joseph L. Albini (Emeritus), David W. Britt, J. Ross Eshleman, Donald E. Gelfand, Mel J. Ravitz (Emeritus), Janet R. Hankin, Mary C. Sengstock, Leon H. Warshay

Associate Professors

Clifford J. Clarke, Anne Rawls, Leon Wilson

Assistant Professor

Chishamiso Rowley

Lecturer

James Bozeman, Charles Quist-Adade

Adjunct Professors

Diane Brown, William Hoffman

Adjunct Associate Professor

Rosalie Young

Adjunct Assistant Professor

Amy Pienta

Joint Appointment, Institute of Gerontology

Jeffrey Dwyer (Professor)

Graduate Degrees

MASTER OF ARTS with a major in Sociology

DOCTOR OF PHILOSOPHY with a major in Sociology

The graduate programs offered by the Department of Sociology are designed to prepare students for professional careers in a variety of settings. These programs require substantial course work in the general areas of sociological theory and sociological research methods. In addition to this core required of all students, individual students have considerable flexibility in pursuing course work designed to concentrate on specific areas of substantive specialization in sociology which reflect the current interests and work of the departmental faculty.

Academic Procedures: All course work must be completed in accordance with the academic procedures of the College and the Graduate School governing graduate scholarship and degrees; see pages 204-206 and 16-30, respectively.

Master of Arts with a Major in Sociology

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. In addition, applicants to the sociology program must satisfy the criteria below. Applications are considered for admission to fall and winter terms only; all stages and materials in the application process must be completed by July 1 for fall term, and by November 1 for winter term. Materials required for admission include: (1) Transcripts of all previous collegiate work. Transcripts must be mailed directly from the previously-attended college or university to the Office of University Admissions, Wayne State University. (2) The *Application for Graduate Admission*, with all required information supplied. The *Application* should also be sent to the University Office of University Admissions. (3) Students must

submit to the Graduate Committee three letters of recommendation, at least two of which should be from faculty members. Students filing Change of Status forms are also required to submit three letters of recommendation. (4) A one-page statement of interest should be submitted to the Graduate Committee. (5) A sample of written work. (6) The G.R.E. is recommended but not required.

Forms for application and letters of recommendation are available from the Graduate Program Director, Department of Sociology.

An honor point average of at least 3.3 in upper division courses, and in sociology courses, is required for admission. An undergraduate major in sociology is not an absolute requirement for admission, but an applicant should have a substantial background in sociology. Students who do not have an undergraduate degree in sociology are required to take as prerequisites: SOC 4050 (theory) and SOC 4200 (methods); if not previously completed, an undergraduate statistics course is also a recommended prerequisite. Prerequisite courses should be completed by the end of the first year of graduate studies, and prior to taking graduate-level theory and methods courses. Prerequisite courses do not apply to graduate credit, and must be successfully completed with a grade of 'B' or better.

Candidacy must be established by the time fifteen credits have been earned.

DEGREE REQUIREMENTS: All students are required to complete Sociology 6050 or 6060, 6280, 7030, 7200, and to demonstrate computer literacy.

The Master of Arts degree with a major in Sociology is offered under the following options. Students seeking the Ph.D. degree should select Plan A.

Plan A requires thirty-two credits in course work including:

SOC 6280, 7200, 7030, 6050, 6060, 8999 (thesis, eight credits), and four credits in sociology electives. Ph.D. students must select this Plan. A final oral examination is required.

Plan B requires thirty-two credits in course work including:

Either SOC 6050 or 6060; SOC 6280, 7200, 7030, 7999 (essay, three credits); and thirteen credits in electives, at least ten of which must be in SOC courses. A final oral examination is required.

— with a Concentration in Applied Sociology and Urban Policy Studies

The goal of this program is to combine an intellectually stimulating academic experience with practical training for careers in public and private policy development, evaluation research, and administration. Students receive instruction in sociological theory and methodology (quantitative and qualitative), and first-hand experience in applied research and policy-related internships. The program is designed as a flexible course of study suitable for both full and part-time students, including those wishing to continue their education after some years of absence from the University, mid-career professionals seeking additional training, and post-baccalaureate students. Applied sociology may also be used as an area of specialization for the Ph.D. in Sociology.

Admission: See above under Master of Arts with a Major in Sociology.

DEGREE REQUIREMENTS: This concentration is offered only as a *Plan B* master's program for which thirty-two credits are required. Required courses include Sociology 6050 or 6060, 6280, 6580, 6590, 7000, 7030, 7200, 7999, and two advanced courses within one major area of sociology. Students must demonstrate computer literacy.

Doctor of Philosophy with a Major in Sociology

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. In addition, applicants to this program must satisfy the following criteria. Applications are considered for admission to fall and winter terms only; all stages and materials in the application process must be completed by July 1

for fall term, and by November 1 for winter term. Applicants should have a 3.5 honor point average in their master's degree work and at least a 3.5 h.p.a. in the aggregate of their methods and theory course requirements. The following courses, or their equivalents, must have been completed before the student can be considered for admission: Sociology 4050, 4200, 6050, 6060, 6280, 7030, 7200.

The Department requires three recommendations (including one from the student's adviser) in addition to the transcripts and other materials required by the Graduate School. Recommendation forms may be secured from the Department Office, 2228 Faculty/Administration Building. A statement of interest and sample of written work are also required. The G.R.E. is recommended but not required. The completed forms are to be returned to the Director of Graduate Programs of the Sociology Department. These recommendations must be submitted at the same time the admission form is submitted. For more information regarding application procedures, see the Master of Arts admissions statement above.

DEGREE REQUIREMENTS: The Doctor of Philosophy degree requires ninety credits beyond the baccalaureate degree, thirty of which must be earned as dissertation credit. Prior to electing Ph.D.-level courses, all doctoral students in sociology must complete the following prerequisite courses: Sociology 6050, 6060, 6280, 7030, 7200; and demonstrate computer literacy. These prerequisites do not count toward the thirty credits in Ph.D.-level courses. Required courses at the Ph.D. level include: SOC 7050 or 8060 (theory), SOC 7010 (Introduction to Qualitative Methods), eight credits in a minor field, and eight credits in electives; and completion of either the qualitative or quantitative methods sequence. Two written qualifying examinations and an oral qualifying examination are required. Doctoral applicants are required to have two successive semesters in residence as full-time students as defined by the Graduate School.

A detailed description of the doctoral program, including specific requirements, is provided in a brochure of general information for doctoral students in sociology, available from the Department upon request.

Doctoral students are encouraged to engage in teaching and research as a condition for qualifying for a degree.

Assistantships

Sources of financial aid for graduate students are enumerated in the section on Graduate Financial Assistance, beginning on page 30 of this bulletin.

A limited number of assistantships are available each year. Awards of assistantships are normally made on or about June 1 for the forthcoming academic year commencing in September. Application for assistantships must be completed no later than March 1. Consult the Department Chairperson or the Graduate Program Director for further details.

Parents and Children Together (PACT) offers an opportunity for graduate students interested in human service professions to work with families at high risk of abuse and neglect, while taking designated course work. A one-year commitment to the program is required. Students are paid for twenty-nine hours of family-based service work each week. PACT, as a contractual service to the Wayne County Department of Social Services, is an alternative to foster care. Student participants can obtain from twelve to twenty-one hours of credit, which can later be applied toward a master's degree in sociology, or transferred into other programs.

GRADUATE COURSES (SOC)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509

5010 Selected Sociological Topics. Cr. 1-3
Topics to be announced in Schedule of Classes. (I)

5200 Women and Crime. Cr. 3
Prereq: SOC 3820. Issues of women in the criminal justice system. Traditional and feminist perspectives. Topics include: victimization, offending, personnel, and theory. (F)

5280 (STA 1020) Elementary Statistics. Cr. 3
Prereq: one and one-half years high school algebra. Not to be counted as a mathematics course by mathematics majors. Student computer account required. Descriptive statistics, correlation and regression, notions in probability, binomial and normal distributions, testing hypothesis. (T)

5360 Introduction to Medical Sociology. Cr. 3
Sociological and social psychological examination of health and illness behavior, health care providers, patient-provider-hospital relations, and health policy both in the United States and cross-culturally. Detroit area data and sex roles in medicine are discussed. This course is appropriate for non-sociology students with an interest in health issues (nursing, pre-medicine, and others), as well as for sociology and psychology students. (Y)

5400 The Family. Cr. 3
An introduction to the sociology of the family: forms of organization, interaction patterns throughout the life cycle, ethnic and cultural differences, conflict and change. Especially useful for students in social work, counseling, family and consumer resources, nursing and education, as well as the other social sciences. (T)

5410 Marriage and Family Problems. Cr. 3
Social and historical context of marriage and family problems. Power, conflict, communication and crisis as they relate to the nature and dynamics of the family. Problem solving techniques; specific family problems: divorce or child abuse. (T)

5420 Cross-Cultural and Ethnic Perspectives on the Family. Cr. 3
Prereq: SOC 3400. Range of possibilities of family structure and process. Topics include: intergenerational and husband-wife relations, child rearing practices, extended family patterns. Cross-cultural examples from studies of American ethnic groups and other countries. (B)

5450 Human Sexual Behavior and Society. Cr. 3
Sexual behavior from a cross-cultural point of view. Historical development and findings of sociological research related to human sexual behavior. (Y)

5460 Sex Roles: Being Men and Women. Cr. 3
Roles of men and women in society today; how they are changing and the effects of these roles on individuals and society. (Y)

5540 (ANT 5060) Urban Anthropology. Cr. 3
Prereq: ANT 2100 or consent of instructor. Socio-cultural effects of urbanization in the developing areas of the world, particularly Africa, Latin America, Southeast Asia and India. The process of urbanization. The anthropological approach in the area of urban studies. (I)

5570 Race Relations in Urban Society. (AFS 5570) Cr. 3
Theoretical orientations applied analytically to enhance an understanding of the patterned structures of privilege in society which are based on race. Inequality, segregation-desegregation, pluralism; social structural frameworks; some attention to social-psychological aspects of topics such as prejudice and racism. (I)

5600 Sociology of International Inequality and Underdevelopment. Cr. 3
Prereq: introductory course in social science area. Comprehensive introduction to theoretical, substantive and methodological issues relating to international inequality; preparation for research interests of students from diverse backgrounds. (Y)

5700 Inequality and Social Class. Cr. 3
Analysis of the inequalities in societies, the United States and others. Causes of social class differences; varying structures of stratification; consequences for the individual, ethnic groups, political power; the conditions under which mobility occurs. (I)

5760 Society and Aging. Cr. 3
Personal, interpersonal and institutional significance of aging and age categories. Sociological dimensions of aging based on physical, social-psychological, and demographic backgrounds. (Y)

5810 Law in Human Society. (CRJ 5810) Cr. 3
Law and the legal structure in its social context. The development, enforcement and interpretation of law; emphasis on the American system of government. Reciprocal effects of law and the society in which it develops; comparative analysis. Designed for pre-law, criminal justice, and political science students, as well as for sociology majors. (Y)

5870 Violence in the Family. Cr. 3-4
Open for four credits to Liberal Arts Honors students only. Analysis of the nature of violence in family and family-like relationships; prevalence and types of family violence; social and social psychological correlates of violence in families. (Y)

5880 Family Violence: Intervention. (S W 5880) Cr. 1-2
Prereq. or coreq: SOC 5870. Open to FACT students; others by consent of instructor. Application of theory and intervention techniques in the family experience of maltreatment. (Y)

5890 Applied Techniques for Dealing with Family Violence. Cr. 3
Prereq. or coreq: SOC 5870. Theory and research on family violence as they suggest the services needed by victims. Analysis of legal, medical, counseling and other service needs of victims. (Y)

6050 Sociological Theory Before 1920. Cr. 4
Prereq: SOC 2000 or consent of instructor. Sociological theorists before 1920, their thought and the historical context in which such thought developed. (Y)

6060 Sociological Theory Since 1920. Cr. 4
Prereq: SOC 2000 or consent of instructor. Historical and Theoretical analysis of sociological thought in the present century. Current trends in sociological theory. (Y)

6080 (PHI 5230) Philosophy of Science. Cr. 4
Prereq: PHI 1850 or PHI 1860 or any course from the Philosophical Problems group or consent of instructor. Intensive investigation and discussion of special topics or particular authors in the philosophy of science. Topics and authors to be announced in Schedule of Classes. (Y)

6280 Social Statistics. Cr. 4

Basic techniques for organizing and describing social data, measures of central tendency and dispersion, probability theory and hypothesis testing, tests of significance and confidence intervals, measures of association for two variables, analysis of variance. (Y)

6290 Advanced Social Statistics. Cr. 4

Prereq: SOC 6280. Multiple and partial correlation and multiple regression, dummy variable analysis, analysis of covariance, causal models for multi-dimensional contingency tables, path analysis techniques, introductory factor analysis, Markov chains, selected additional topics. (Y)

6300 Sociology of Women's Research Seminar. Cr. 3

Prereq: one course each in methods and advanced theory; and one women's studies course. Research-intensive approach to issues affecting women in society. Problems and diversity of the female population. Major feminist theoretical perspectives and literature. (Y)

6400 Family Theories and Research. Cr. 3

Major sociological and social psychological theories relevant to the study of the family combined with a comprehensive survey of family research; these theories and research findings applied to contemporary family issues and family policy. (B)

6430 Approaches to Family Study. Cr. 3

Prereq: introductory course in a social science. Family systems and crisis theories as basis for study of family interaction; includes black family structure and function historically and in contemporary society. (Y)

6440 Urban Family Intervention. (S W 6440) Cr. 1

Prereq. or coreq: SOC 6430. Application of theory and practice technique in the helping process of urban, minority families in poverty. (Y)

6460 Family-Based Intervention Techniques. (S W 6460) Cr. 4

Appropriate theories and strategies for working with families on an in-home basis to change family interaction, child-rearing patterns, health practices and management behavior. Focus on high-risk, urban families. (Y)

6580 Applied Sociology I: Policy Research and Analysis. Cr. 3

Prereq: graduate students or advanced social science undergraduates. The logic of applied sociological analysis, policy research design and ethical issues in applied social science. Critical analysis of specific projects and of contributions of related social science disciplines. Development of writing skills for policy makers. (Y)

6590 Applied Sociology II: Strategies for Changing Social Behavior. Cr. 3

Prereq: graduate students or advanced social science undergraduates. Analysis of theoretical and practical strategies for promoting the change of social behavior. Focus on behavior of the individual, small group, and community structural levels. Means of evaluating effectiveness of change strategies. Materials drawn from theory and practice in sociology and related social sciences. (Y)

6750 (ULM 6350) Sociology of Urban Health. Cr. 3

Prereq: graduate standing; undergraduates by consent of instructor. Review of theories and research on health status and health care delivery issues in urban communities. (Y)

6770 Sociology of Institutional Care. Cr. 3

Converging issues of theory, research and practice in general hospitals, mental hospitals, and nursing homes. Structure of institutions and the adaptation of individuals within them. (I)

6850 (ULM 6150) Political Economy of the Urban Ghetto. (ECO 6810) (U P 6670) Cr. 3

Prereq: graduate standing; upper division undergraduates by consent of instructor. Examination of the economic, social and political transformation of U.S. cities; particular attention to the formation, dynamics, economics and social sub-systems of urban ghettos and their relationship to broader contexts. (B)

6860 Organized Crime: Its History and Social Structure. (CRJ 6370) (CRJ 6860) Cr. 3

Prereq: SOC 3820. Open only to juniors, seniors and graduate students. Analysis of the history and social structure of organized crime. Contemporary national and international forms of criminal enterprises. (B)

7000 Internship in Applied Sociology. Cr. 3

Prereq: SOC 6580 and 7200. Guided internship with Detroit metropolitan private and public organizations arranged and supervised through the Program in Applied Sociology and Urban Policy. (Y)

7010 Special Topics. Cr. 2-6

Topics to be announced in Schedule of Classes. (Y)

7030 Proseminar. Cr. 4

Prereq: SOC 4200. Causal modeling. Use of models as summaries of what we know about social phenomena; creation of dialog between data from both qualitative and quantitative sources and assumptions. (F)

7060 (CRJ 7050) Deviant Behavior and Social Control. Cr. 3

Description and explanation of selected types of deviant /criminal behavior. Review of selected efforts at controlling deviant/criminal behavior. (Y)

7150 Seminar in Social Psychology. Cr. 4

Prereq: graduate standing. Advanced theoretical survey of major theories of social psychology. (Y)

7170 Clinical Theory and Research in Sociology. Cr. 4

Prereq: completion of 18 credits in graduate coursework in sociology or consent of instructor. Analysis of sociological theory and research methodology with particular application to clinical settings from the individual and small group to communities and formal organizations. Student practice in application of sociological theories and research methods to clinical problems. (B)

7200 Advanced Survey of Approaches and Techniques of Social Research. Cr. 4

Prereq: SOC 6280. Advanced conceptual treatment of the primary concerns of social research: perspectives and types of social research, research designs, sampling techniques, data-gathering techniques and instrument construction, data analysis and presentation, interpretation and reporting of the results. (Y)

7220 (ULM 7220) Seminar in Survey Research Methods. (ANT 7220) (P S 7620) Cr. 3

Prereq: advanced undergraduate or graduate training in general research methods and statistics; open to upper level undergraduates with consent of instructor. Hands-on approach to understanding the strengths and potential pitfalls of the survey method. Topics include: design of survey research (including theory, measurement and ethics), sampling (including special populations), questionnaire development and survey administration. (F)

7320 (JDS 8080) Law, Race and Racism in American History. (AFS 7320) Cr. 3

Interdisciplinary seminar co-taught by law and sociology, focusing on role of law in shaping the black experience and relationship between race and law in United States from colonial times to 1960s civil rights movement. Topics include: law and American slavery; legal developments during antebellum and Jim Crow eras; law, racial segregation and discrimination in later periods. (Y)

7330 (ULM 6100) Class, Race, and Politics in America. (AFS 6100) (HIS 5110) (P S 6050) (U P 7030) Cr. 3

Prereq: senior standing or consent of instructor. Historical and analytic investigation into the role of class and race in American politics. (Y)

7350 (ULM 7260) Urban Poverty and Racial Segregation. (AFS 6600) (ANT 7260) (P S 7260) (U P 7260) Cr. 3

Prereq: graduate standing. Review of theories of poverty from various economic/political perspectives; historical intervention policies; current literature on interplay of racial, economic, and spatial factors on growing economic inequality among urban whites and African-

Americans. Political rationale and meaning of the 'underclass' debate. (Y)

7400 Racial and Ethnic Differentiation. Cr. 4

Prereq: graduate standing. Origin, persistence, adaptation and change of systems of racial and ethnic differentiation. Persistence of ethnic and racial discrimination around the world. (Y)

7460 Seminar in the Sociology of African American Families. Cr. 4

Prereq: graduate standing. Historical, theoretical, and empirical methods of studying African American families. Practical and policy issues relevant to African American families; African Diaspora issues. (Y)

7500 Interactional Analysis. Cr. 4

Analysis of the content and framework of social interaction patterns; demonstration of how these affect the collection and interpretation of qualitative data. (Y)

7850 Seminar in Applied Gerontology. (C M 7850) (S W 8850) Cr. 3

Prereq: completion of three gerontology courses, consent of instructor. Open only to students in gerontology or community health services M.S. program. No credit after S W 8810. Approaches to evaluation of applied research in gerontology from multi-disciplinary perspective. Topics include: research design, program evaluation methods, assessment of research related to multi-disciplinary facets of applied gerontology. (Y)

7990 Directed Study. Cr. 1-6 (Max. 6)

Prereq: written consent of adviser and graduate officer. Not open to doctoral students. (T)

7995 Directed Teaching in Sociology. Cr. 1

Prereq: written consent of adviser and graduate officer. Students work under the direction of a member of the graduate faculty; planning lectures, handling class discussions, preparing exams, and grading introductory sociology students. (Y)

7999 Master's Essay. Cr. 1-3 (3 req.)

Prereq: consent of adviser. (T)

8060 Seminar in Sociological Theory. Cr. 4

Analysis of theoretical issues, schools, and theorists, past and/or present. (I)

8400 Seminar in Sociology of the Family. Cr. 3

Prereq: graduate standing in sociology or prior coursework in marriage/family area. Theoretical orientations and applications to family issues. Substantive topics will vary but include changing family structures and life styles, socialization/parenting, family/gender roles, family interaction/ communication/power, crisis/stress, divorce/remarriage, and families over the life course. (I)

8500 Seminar: Covariance Structure Models. Cr. 4

Prereq: graduate standing. Theory and methods of testing models of covariance structure; mathematical model specification; model modification. (Y)

8999 Master's Thesis. Cr. 1-8 (8 req.)

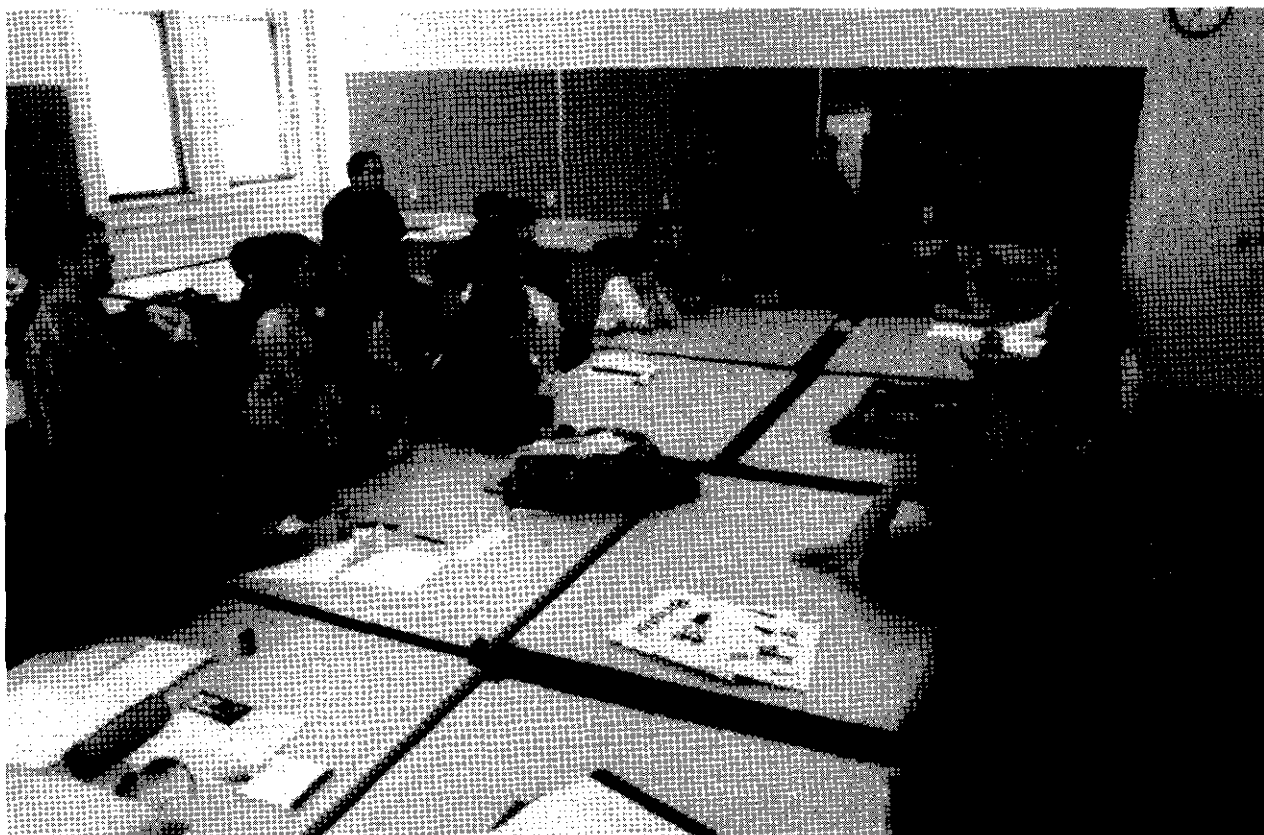
Prereq: consent of adviser. (T)

9990 Directed Study. Cr. 2-6 (Max. 6)

Prereq: consent of adviser and graduate officer. Open only to doctoral students. (T)

9999 Doctoral Dissertation Research and Directed Study. Cr. 1-16

Prereq: Candidacy Status or Graduate School approval. Offered for S and U grades only. (T)



Library and Information Science Program

DEAN: Patricia Senn Breivik

FOREWORD

History

The Library and Information Science Program at Wayne State University traces its origins to 1918, at which time courses in school librarianship were offered to elementary teachers in the Detroit Public Schools by the Detroit Normal Training School. When the Training School later became the Detroit Teachers College, the library program was expanded. In the 1930s, a bachelor's degree with a minor in library science was offered, designed for the preparation of elementary and secondary school librarians. Subsequently, the Detroit Teachers College united with several other institutions to become the University's College of Education and courses in library science were offered through that unit.

By 1940, a master's degree program (Master of Education) had been implemented for library science majors. In 1956, Wayne University became Wayne State University; the Department of Library Science expanded its program to provide graduate education for a wide range of library specializations, and a Master of Science degree program in Library Science (M.S.L.S.) was established.

Through the 1960s and 1970s, the Department of Library Science broadened and diversified its program to include not only undergraduate and graduate courses, but also a series of continuing education programs. The Department became the Library Science Program, and the Specialist Certificate in Librarianship was created to serve those practicing librarians who wished to update their knowledge and professional skills. In fall 1993 the Library Science Program became the Library and Information Science Program, recognizing increased emphasis in the curriculum on information studies. The degree awarded is the Master of Library and Information Science (M.L.I.S.). The Library and Information Science Program also offers a certificate program in archival administration, in conjunction with the History Department of the College of Liberal Arts.

Since 1984, the Library and Information Science Program has been under the administrative jurisdiction of the Dean of University Libraries and Library and Information Science, with degrees granted by the Graduate School of the University.

The Information Profession

Engaged in challenging careers, qualified information professionals are working in varied settings all over the globe. In the United States alone, approximately 150,000 of these professionals are employed in 125,000 libraries; others are using their library and research skills in information services outside of traditional library settings. With more than fifty percent of today's gross national product related to the management of information, career opportunities for individuals trained in library and information science are abundant and diverse.

Into the next century and beyond, information professionals will have a wider than ever choice of where and how to apply their knowledge and abilities. Exciting career opportunities will exist in both the public and private sectors, including business, law, medicine, publishing, government, archives and museums, communications and media, engineering, and academic environments.

Accreditation

The Library and Information Science Program first received accreditation for its master's degree by the American Library Association in 1967; the M.L.I.S. program's most recent accreditation was granted by the Committee on Accreditation of the ALA in 1996.

Mission Statement

The mission of the Wayne State University Library and Information Science Program is to educate individuals from diverse backgrounds to be lifelong learners, effective problem solvers and professionals prepared to assume leadership roles in meeting current and emerging information needs of the society, as well as to champion people's rights to intellectual participation in this society.

Essential to its mission is the Program's commitment to: maintaining a national leadership role in research that addresses urban library and information issues; preparing professionals to work successfully in culturally rich and complex urban regions; participate in collaborative service in Michigan and the Detroit region; and provide specialized and continuing education opportunities for information professionals.

Goals and Objectives

The goals of the Library and Information Science Program are to:

1. Prepare students to assume professional roles in varied library and information centers.
2. Prepare students to become critical thinkers, problem solvers and effective communicators.
3. Prepare students to understand how societal and technological developments affect the information environment.
4. Prepare students to be leaders within their communities and their profession.
5. Prepare people for work in urban libraries and information centers.

Facilities

University Libraries: Wayne State University has six libraries with a total of almost three million books and twenty-four thousand current subscriptions to periodicals. The Purdy/Kresge Library complex houses all materials in the fields of business, education, humanities, and social sciences, as well as all general periodicals. This complex also contains the Media Library, including films and videotapes, audiovisual equipment, audiotapes, microfilms, microcomputers, and phonograph records; and the offices of the Library and Information Science Program.

Careers, computers, and student survival skills are the special focus of the David Adamany Undergraduate Library that maintains and supports 700 computer workstations, a growing print collection that supports the undergraduate curriculum, and a twenty-four hour study center.

Computer science, engineering, life sciences, nursing, and physical science materials are housed in the Science and Engineering Library. Legal documents and related materials are located in the Neef Law Library. Health science materials are located in the Shiffman Medical Library.

The Walter P. Reuther Library of Labor and Urban Affairs is a rich source of archival materials. It includes the personal papers of many urban leaders and is an important source of original data regarding Detroit, the auto industry and unionization.

The location of Wayne State University in the heart of Detroit's cultural center provides additional advantages to the library and information science student. Readily available to the University student is the main branch of the Detroit Public Library, the professional research library of the Detroit Institute of Arts, and the Detroit Historical Museum.

Computer Laboratory: The Library and Information Science Program has a microcomputer laboratory equipped with state-of-the-art personal computers. Students can access the University libraries' mainframe computer and a variety of common library databases. Located in the Kresge Library, the laboratory provides hands-on experience in accessing a variety of information retrieval systems, as well as other applications in library and information service. Library and information science students also have access to the computing facilities located in the Media Center of the Purdy Library.

Graduate Degrees and Certificates

MASTER OF LIBRARY AND INFORMATION SCIENCE

SPECIALIST CERTIFICATE in Library and Information Science

GRADUATE CERTIFICATE in Archival Administration

FACULTY

Professors

Patricia Senn Breivik, Genevieve M. Casey (Emerita), Margaret Grazier (Emerita), Robert P. Holley, Michael Keresztesi (Emeritus), Philip Mason, Joseph J. Mika, Edith Phillips (Emerita), Vern Pings (Emeritus), Ronald Powell, Peter Spyers-Duran (Emeritus)

Associate Professors

Betty Maurstad (Emerita), Gordon B. Neavill

Assistant Professors

Rosie Albritton, Lynda Baker, Christopher Brown-Syed, Nancy B. Johnson, Louise Spiteri

Senior Lecturer

Judith Field

Interdisciplinary Faculty and Staff

Dee Calloway, Purdy Library, University Libraries; Wanda Cook-Robinson, College of Education; Anaclare F. Evans, Technical Services, University Libraries; Sandra Martin, Shiffman Medical Library, University Libraries; Howard S. McMinn, Science and Engineering Library, University Libraries; Ronna J. Rivers, Walter P. Reuther Library of Labor and Urban Affairs; R. Craig Roney, College of Education; Peter B. Sanders, College of Education; Kathleen E. Schmeling, Archivist I, Walter P. Reuther Library of Labor and Urban Affairs; Albert F. Stahl, College of Education; Jacqueline Tilles, College of Education

Adjunct Faculty and Part-Time Faculty

Roger S. Ashley, Technology Teacher, Media Director, Model High School, Bloomfield Hills, MI; Bonnie A. Dede, Head of Special Cataloging, University of Michigan Main Library, Ann Arbor, MI; Anita Dey, Head, Reference Services, Melvin J. Zahnow Library, Saginaw Valley State University, University Center, MI; Ruth Fitzgerald, Coldwater, MI; Gerald M. Furi, Assistant Director, Farmington Community Library, Farmington Hills, MI; Paulette E. Groen, Technical Information Specialist, Ford Motor Company; Charles D. Hanson, Grosse Point Farms, MI; Eileen Lane, Delphi Automotive Systems; Marianne Maher, Manager, Library and information Services, Plunkett and Cooney, Detroit, MI; Robert Mareck, Lansing, MI; Marianne Martin-Weldon, Village Art Conservation, Detroit, MI; Scott Mellendorf, Reference Intern, Melvin J. Zahnow Library, Saginaw Valley State University, University Center, MI; Jennifer L.S. Moldwin, Head Librarian, Detroit Institute of Arts, Detroit, MI; Blaine V. Morrow, Consultant, Author, and Teacher in Electronic Information Resources, Lansing, MI; Brian M. Owens, Lecturer, Department of History, University of Windsor, Windsor, Ontario, Canada; Robert E. Raz, Director, Grand Rapids Public Library, Grand Rapids, MI; Mary Louise Riley, Coordinator of Reference and Adult Services, Grand Rapids Public Library, Grand Rapids, MI; Charlotte E. Simon, Instructional Design Consultant, Huntington Woods, MI; Martha Smart, Branch Manager, Grandville Public Library, Grandville, MI; Dawn Olmstead Swanson, Librarian, Kettering University

PROGRAM DIRECTORY

DEAN:

Patricia Breivik 3100 David Adamany Library; (313) 577-4020
Fax: 577-5525

DIRECTOR:

Robert P. Holley 106 Kresge Library; (313) 577-1825
Fax: 577-7563

GENERAL INFORMATION

106 Kresge Library; (313) 577-1825
Fax: 577-7563

WEBSITE

<http://www.LISP.wayne.edu>

E-MAIL

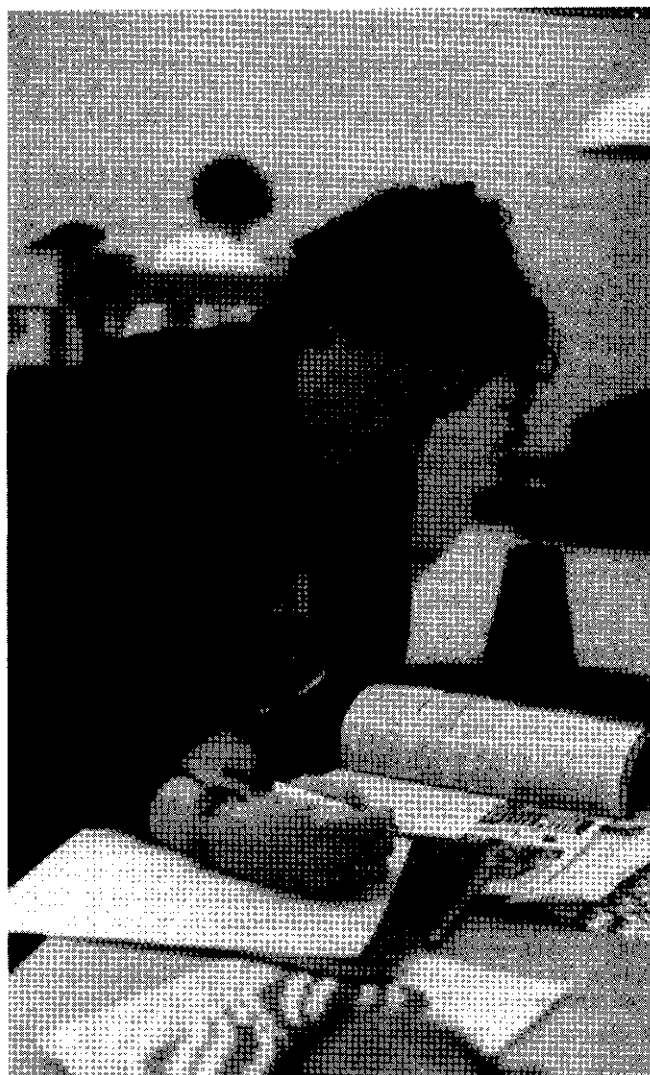
info@mail.LISP.wayne.edu

ADMISSIONS AND STUDENT SERVICES

106 Kresge Library
(313) 577-1825

OFF-CAMPUS PROGRAMS:

Robert P. Holley 106 Kresge Library
(313) 577-1825



DEGREE and CERTIFICATE PROGRAMS

MASTER OF LIBRARY AND INFORMATION SCIENCE

The master's degree program in library and information science (M.L.I.S.) prepares graduates to assume entry level positions in the profession. Upon completion of thirty-six credits in course work, the student will possess a body of knowledge common to all libraries and library positions, and be versed in the application of theory and principles of librarianship and information studies. The goal of the Library and Information Science Program is to educate professionals who will assume leadership in the field and who will appreciate the need for professional growth through continuing learning experiences. Finally, the Program is designed to provide students with the philosophical and conceptual framework, as well as the basic professional skills, needed to serve in a variety of library and information settings.

Admission Requirements

Admission to the Program is contingent upon admission to the Graduate School; for requirements, see page 16. In addition, Master of Library and Information Science applicants must satisfy the following criteria:

1. Possess an undergraduate degree from an accredited college or university with a balance of study consisting of at least forty-five credits of course work in the humanities, social sciences, and natural sciences.
2. Have an honor point average of 2.75 or better (C = 2.0). (Qualified admission may be authorized upon review if the applicant's h.p.a. is below 2.75);
3. Submit a typewritten statement reflecting relevant personal and academic background and experience.
4. Interview with a faculty adviser in the Library and Information Science Program if the student's undergraduate h.p.a. is lower than 2.75.

Application: Students applying to this Program should submit a completed Graduate Admission Form, a written statement of academic goals and objectives, and the \$20.00 application fee to: Office of University Admissions, 3 East, Helen Newberry Joy Student Services Building, Wayne State University, Detroit, Michigan 48202. Additionally, applicants should request that transcripts of all post-secondary work be sent to the Office of University Admissions. If the student has been previously admitted to the Graduate School, he/she should complete and file a Change of Graduate Status Form with the Library and Information Science Program.

Degree Requirements

The Master of Library and Information Science is offered only as a Plan B master's program (see page 27) requiring a minimum of thirty-six credits to be distributed as follows: Twenty-one credits in the library and information science professional core (including LIS 7999), and fifteen credits in elective professional courses. A maximum of six credits in courses outside of library and information science may be accepted as cognates.

<i>Professional Core (Twenty-one Credits)</i>	<i>credits</i>
LIS 6010 —Introduction to the Information Profession	3
LIS 6080 — Information Programming and Processing.	3
LIS 6110 —Reference & Information Services and Resources	3
LIS 6160 — Electronic Access to Information.	3
LIS 6210 —Technical Services in Libraries	3
LIS 7999 —Master's Essay Direction and Research Methods	3

Plus one of the following bibliography courses:

LIS 7110 —Humanities Information Services and Resources	3
LIS 7120 —Science and Technology Information Services and Resources.	3
LIS 7130 —Social Sciences Information Services and Resources	3

Professional Concentration (Fifteen Credits)

A *Plan of Work* is a formal statement of the goals and prescribed courses of the student's academic program. The library and information science master's degree program requires that a *Plan of Work* be submitted after completion of six to nine credits of graduate course work. The *Plan* is prepared with the help of the faculty adviser and may be organized around an area of concentration. The emphasis may relate to the type of environment in which the student intends to work: i.e., public libraries, academic libraries, archives, law libraries, school libraries, and medical libraries; or to special functions: i.e., reference, technical services, automation and data processing, and public services. Faculty advisers will assist the student in selecting the optimal *Plan of Work* for his/her academic goals.

SPECIALIST CERTIFICATE IN LIBRARY and INFORMATION SCIENCE

The Specialist Program in Library and Information Science is a post-master's certificate curriculum designed for the practicing professional who requires specialized competence in an area of librarianship, such as public services, technical services, reference, or automation and data processing. This program enables librarians to:

1. update knowledge in the rapidly changing field of librarianship and information management—the organization, storage, retrieval, and dissemination of the human record;
2. use investigative methods and research findings in problem-solving and in the planning and evaluation of library and information services;
3. advance and extend competencies in areas of specialization begun during the first professional degree program (M.L.I.S.). Specializations may be in a particular library function (such as organization of materials, retrieval of information, data processing, collection development, management, public relations, and adult education), or in a type of information center (such as public, school, academic, and special), or in a service to a specific target group (such as business and industry, early childhood, the elderly, the handicapped, the institutionalized);
4. develop a new specialization responsive to the changing economic, technological, or social climate or to changing conditions in the life of the individual librarian; and/or
5. achieve other professional goals, as needed.

ADMISSION REQUIREMENTS

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. In addition, applicants to the Specialist program in Library and Information Science must satisfy the following criteria:

1. Possess a master's degree in library and information science;
2. Have professional employment experience as a librarian or information specialist;
3. Submit a typewritten statement reflecting relevant personal and academic background and experience.
4. Demonstrated professional competence, leadership, and potential for further growth evidenced through an interview with a Library and Information Science Program faculty member.

CERTIFICATE REQUIREMENTS

Candidates for the Specialist Certificate in Library and Information Science must complete thirty credits of 6000-8000 level course work providing the appropriate degree of concentration relevant to the student's career goals. Students in specialist certificate programs at Wayne State must maintain a minimum honor point average of 3.0. A *Plan of Work* and prescribed courses will be developed in consultation with an adviser.

GRADUATE CERTIFICATE IN ARCHIVAL ADMINISTRATION

The archival profession has experienced rapid growth in recent years as many institutions such as colleges and universities, federal, state and local units of government, businesses, churches, and professional organizations have recognized the importance of maintaining their inactive historical records. In addition to the expansion of existing archives, many organizations are establishing archives. This has created a demand for individuals with undergraduate degrees in history or the humanities, who have advanced training in archival administration. In large archival establishments, archivists can become specialists in such areas as appraisal, conservation, exhibits, publications, reference service, oral history, records management, processing and public relations.

The Graduate Certificate Program in Archival Administration serves the needs of those who wish to enter the archival profession as well as those who have responsibility for overseeing archival programs. The program is open to students with baccalaureate degrees from accredited universities, students with advanced degrees, and students enrolled in other Wayne State University graduate programs. **Admission:** See requirements for admission to the Master of Library and Information Science, page 260.

CERTIFICATE REQUIREMENTS

Students in graduate certificate programs at Wayne State must maintain a minimum honor point average of 3.0. Students must complete twelve credits selected from the following:

	<i>Credits</i>
LIS 6780 — Records Management	3
LIS 7710 — (HIS 7840) Introduction to Archival Methods I ¹	3
LIS 7720 — (HIS 7850) Introduction to Archival Methods II ¹	3
LIS 7730 — (HIS 7890) Conservation & Admin. of Photo. Collns.	3
LIS 7750 — Intro. to Archival & Library Conservation (HIS 7810)	3
LIS 7770 — (HIS 7860) Oral History: A Methodology for Research (ANT 6360)	3
LIS 7780 — Computer Applications for Archives & Records Mgt.	3
HIS 7880 — Administration of Historical Agencies	3



¹LIS 7710 and LIS 7720 are required courses.

FINANCIAL AID, AWARDS, and ACTIVITIES

Financial Aid

For a list of sources of institutional graduate financial aid, see the section on Graduate Financial Assistance, beginning on page 30.

Each year library and information science students are eligible to apply for Graduate Professional Scholarships. These awards provide resident tuition (for up to twelve credits per semester) for the academic year. Both full- and part-time students may qualify; however, students holding other tuition-paying awards, and salaried or full-time employees of the university may NOT hold these awards concurrently.

In addition, students are invited to inquire about special fellowships and scholarships, as well as general financial aid. Contact the Director of the Library and Information Science Program, and/or the University Office of Scholarships and Financial Aids.

Information below pertains to the Library and Information Science Program.

Assistantships and Library Employment Opportunities

The University Libraries offer employment opportunities to Library and Information Science (LIS) students. These positions provide students with an excellent opportunity to gain practical skills while supplementing their income. Students are encouraged to take advantage of these learning opportunities. Assignments involve relevant work experience at the pre-professional level in a number of areas within the University Library system. These include the Purdy/Kresge Library (for business, education, humanities, and social sciences), the Science and Engineering Library, the Schiffman Medical Library, the Neef Law Library, and the David Adamany Undergraduate Library.

Graduate Research Assistants (GRAs) are appointed each year by the Dean of the University Libraries and the Director of the Library and Information Science Program. Recipients are expected to work part-time (approximately twenty hours per week). GRAs receive a stipend, tuition, and health benefits.

Graduate Assistants (GAs) assist LIS faculty in a variety of administrative duties and may be called upon to help in a faculty member's research. Graduate assistants are paid an hourly rate.

Field Experience

Within the Detroit metropolitan area, there are over 200 libraries, many of which provide opportunities for supervised field experiences which students may elect for credit. A planned on-site experience in a participating library under the direction of a professional librarian and the supervision of a member of the faculty can be arranged. Applications must be received by the first day of the Winter term for Fall term placements; by the first day of the Fall term for Winter term placements; and by the first day of the Winter term for Summer term placements.

Placement Services

Library and information science students may use the University Placement Services. Placement Services include establishment of credential files to be mailed to prospective employers. In addition, the Library and Information Science Program maintains an extensive listing of currently available positions in all types of libraries throughout the United States, and sponsors an annual Career Information Day, providing interviews on campus with prospective employers.

Scholarships and Awards

General sources of financial aid for graduate students are enumerated in the section on Graduate Financial Assistance beginning on page 30 of this bulletin. The following awards pertain to the Library and Information Science Program; information on these awards and other sources of financial aid is available from the Director of the Library and Information Science Program:

Deart's Merit Scholarships: award of \$500-\$1000, given annually to students who have an excellent academic record, show high promise of success in graduate study and are interested in working in urban library and information environments. A minimum 3.75 undergraduate h.p.a. is required.

Distinguished Alumnus/Alumna Award: presented to a Library and Information Science Program graduate who has made outstanding contributions to the library and information science field.

Gloria A. Francis Memorial Endowed Scholarship: award of variable amount, based on academic qualifications, character, and financial need; given in honor of the former Rare Books Librarian of the Detroit Public Library.

Patricia B. Knapp Award: award of \$100, given annually to the graduating M.L.I.S. student who has demonstrated a high level of scholarship and shows great promise of success in a career in library/information service.

Miriam Larson Memorial Endowed Scholarship: award of variable amount, based on academic qualifications, character, and financial need; for students pursuing careers in health science library and information centers. Given in honor of former Professor Miriam Larson.

Library and Information Science Alumni Scholarships: award of variable amount, available to library and information science students who have completed at least six credits. Awards are based on scholarship, character, and financial need. Applications for these partial scholarships are available in the Library and Information Science Program office.

Edith B. Phillips Endowed Scholarship: an award in honor of Professor Emerita Edith B. Phillips which recognizes scholastic achievement, encourages continued progress, and provides assistance to students enrolled in the Library and Information Science Program; preference given to students with interest in technical services.

Charles Samarjian Memorial Scholarship: partial scholarship which recognizes scholastic achievement, qualities of character and leadership, financial need, and which encourages continued academic progress.

Peter and Jane Spyers-Duran Endowed Scholarship: established by Dr. and Mrs. Peter Spyers-Duran to recognize scholastic achievement, to encourage continued progress, and to provide assistance to students in the Library and Information Science Program; awarded on the basis of academic qualifications, character, and financial need.

H.W. Wilson Scholarships: partial scholarships of variable amount; award based on academic qualifications, character, and financial need.

STUDENT ACTIVITIES

Student Organization of the Library and Information Science Program: is recognized by the University as the organization of students in the Library and Information Science Program. Students enrolled in the Program automatically become members of the Association. Meetings are held throughout the academic year.

American Library Association—Student Chapter: Chartered by the ALA in 1988, the Chapter sponsors professional activities, promotes professionalism, and is open to all student ALA members.

Special Libraries Association - Student Chapter: Chartered by the S.L.A. in 1989, the Chapter promotes professionalism, sponsors professional activities in special librarianship, and is open to all student S.L.A. members.

American Society for Information Science — Student Chapter: Chartered by ASIS, the Chapter sponsors meetings and events throughout the year which promote the organization's goals concerning information technology and its transfer. The Chapter has a LISTSERV and a Home Page on the World Wide Web. Membership is interdisciplinary and is open to all student ASIS members.

Society of American Archivists - Student Chapter: Chartered by the Society of American Archivists in 1996, the chapter serves as a means of introducing and integrating new archivists into the profession; to engage in professional activities; to promote communication among student members of the Society; to develop leaders of tomorrow's archival profession; and to attract new members into the Society.

Library and Information Science Alumni Association: Library and Information Science graduates have established the Library and Information Science Alumni Association which is active at the local level. Meetings are held frequently throughout the year covering a broad range of library interests, including public, school, academic and special libraries. Alumni also attend an annual event scheduled during the annual conference of the American Library Association.



Graduate Courses (LIS)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

6010 Introduction to the Information Profession. Cr. 3

The development and place of libraries in society; objectives, functions of and trends in major types of libraries. Core course. (T)

6080 Information Programming and Processing. Cr. 3

Storage and retrieval problems as approached by conventional and nonconventional methods. Computer applications in libraries. Core course. (T)

6110 Reference and Information Services and Resources. Cr. 3

Reference function of the library; major titles in the reference collection with criteria for their evaluation; sources of continuing knowledge of reference materials; online reference sources, systems and searching. Development of interpersonal communication skills to increase effectiveness in response to patrons' information needs. Core course. (T)

6160 Electronic Access to Information. Cr. 3

Introduction to the various types of electronic media used to acquire and transmit information and to tailor it to specific user needs. Hands-on access to online search services, CD-ROM technology, hypermedia, in-house databases, and other aspects of emerging technology. Core course. Material fee as indicated in the Schedule of Classes. (T)

6210 Technical Services in Libraries. Cr. 3

Survey of objectives and methods of acquisition, classification, cataloging, preparation of books and related materials in libraries. Core course. Material fee as indicated in the Schedule of Classes. (T)

6360 (I T 5110) Technology Applications in Education and Training. Cr. 3

Technological applications to education, training, and instruction within educational, industrial, and human services settings. Students examine, develop, and/or evaluate unique instructional programs. For educators and non-educators interested in exploring technological applications in education. (Y)

6370 (I T 5120) Producing Technology-Based Instructional Materials. Cr. 2-3

Design and development of instructional media and materials for use in educational, industrial, and/or human service programs; development of computer-generated instructional materials. (Y)

6510 (ELE 7220) Survey and Analysis of Literature for Younger Children: Grades PS-3. Cr. 3

Intensive examination of books appropriate for preprimary and primary school children. Analysis of the literary and extraliterary factors

that affect the young child's experiences with fiction and nonfiction. (F,S)

6520 (ELE 7240) Survey and Analysis of Literature for Older Children: Grades 4-8. Cr. 3

Intensive examination of books appropriate for children in grades four through eight. Analysis of literary and extraliterary factors affecting the older child's experiences with fiction and nonfiction. (W,S)

6530 (EED 6310) Literature for Adolescents. Cr. 3

Standards for evaluating adolescent literature. Selection of literature for individual pupils in relation to interest and reading ability. Use of classroom collections. Techniques for helping pupils read poetry, drama, and fiction. (Y)

6550 (ELE 7280) Storytelling. Cr. 3

Prereq: LIS 6510. Selection of appropriate literature and materials for storytelling; guided practice in selection and presentation of literature for oral communication by reading aloud and storytelling. (I)

6780 Records Management. Cr. 3

Management of information, including records creation, records inventory and appraisal, retention/disposition scheduling, filing systems, maintenance of inactive records, micrographics, vital records protection, and electronic impact on records management. (Y)

7040 Library Administration and Management. Cr. 3

Library as an organization in various settings, functional diversification, staffing patterns, program planning, budgeting, performance evaluation, communication, and public relations. (F,S)

7050 Public Libraries. Cr. 3

Development of concepts introduced in LIS 6010; history, organization and function of public libraries; development of skills necessary to public librarianship. (Y)

7060 Academic Libraries. Cr. 3

Development of topics introduced in LIS 7040; history, organization, and function of the academic library within educational and research institutions; development of management and personnel concepts necessary to academic librarianship. (Y)

7070 Special Libraries and Information Centers. Cr. 3

History, organization, and functions of various types of special libraries and services necessary to deliver a wide range of services. (Y)

7110 Humanities Information Services and Resources. Cr. 3

Prereq: LIS 6110, 6160. The nature of the arts and the humanities; information needs of the artist, the humanistic scholar, and the layman; library programs in the arts and the humanities; problems of communication and information in the several humanistic fields of study. Core course. Material fee as indicated in the Schedule of Classes. (T)

7120 Science and Technology Information Services and Resources. Cr. 3

Prereq: LIS 6110, 6160. The generation, organization and pattern of bibliographic control of the literature of both the basic and the applied sciences. Characteristics of the scientific method and the scientific community. Bibliographic organization, reference tools and major databases. Core course. (F,W)

7130 Social Sciences Information Services and Resources. Cr. 3

Prereq: LIS 6110, 6160. Characteristics of the social science disciplines: structure, concepts, methods of investigation. Major figures and significant works in the general field. Bibliographic control, reference tools, instructional resources. Core courses. Material fee as indicated in the Schedule of Classes. (T)

7250 Programming and Services for Children and Young Adults. Cr. 3

Prereq: nine credits in library and information science coursework. Principles and procedures for planning, managing and delivery of public library services to children and young adults. (F)

7310 School Library Media Programs. Cr. 3

Prereq: LIS 6010, 6110. Role of library media programs in the school; methods of planning, organizing, and operating such programs; impact of technology upon instruction and library service. (F,S)

7320 The Media Specialist as Teacher and Instructional Consultant. Cr. 2

Instructional functions of the library media specialist in terms of integrating information processing skills in the curriculum through the instructional design process by working in partnership with teachers and applying the principles of teaching and learning theories. (Y)

7340 Collection Development and Selection of Materials. Cr. 3

Prereq: LIS 6010. Philosophy, principles and procedures for provision of materials and a collection that will meet the needs of the library's clientele. Concepts and procedures of community study, intellectual freedom, evaluation of materials, the use of selection aids, and an introduction to the publishing world. (F)

7350 (IT 7110) Advanced Instructional Design Tools and Techniques. (H E 7540) Cr. 4

Prereq: I T 6110. Exploration and application of those techniques, tools and competencies characteristic of expert designers. Topics include: use of design software, program design, advanced analysis techniques, motivation design, rapid prototyping, reducing design cycle time, designing instruction for diverse learner populations. (Y)

7370 Multicultural Information Services and Resources. Cr. 3

Prereq: LIS 6010, 6110, 6160. Study of impact of cultural diversity on library services; development of relevant collections; effective interaction with a diverse community. (Y)

7400 Urban Libraries Seminar. Cr. 3

Interdisciplinary approach to planning, managing, and implementing services in urban libraries. (Y)

7410 Microcomputer Applications in Information Organizations. Cr. 3

Competencies required to select, organize, develop, manage and evaluate information research, management, and services-related applications software for use with microcomputer technology. (Y)

7420 Internet Resources for Librarians and Information Specialists. Cr. 3

Prereq: LIS 6080 or consent of instructor. Use of Internet protocols (ftp, telnet, smtp, http, gopher), location of Internet resources for library reference and research uses, construction of World Wide Web resources using HTML and successor technologies. (T)

7560 Seminar in Literature for Children and Young Adults: Special Topics. Cr. 3

Prereq: minimum of three credits in children's and/or young adult literature courses. Survey and analysis of trends and issues in the areas of: publication trends, reading behaviors, author and genre studies, reader response to literature, and strategies for enhancing literary experiences. (B)

7610 Health Sciences Information Services and Resources. Cr. 3

Prereq: LIS 6160 and 6210. First in series of three courses, designed to provide students with skills necessary to become health sciences librarians. (Y)

7620 Electronic Access to Health Sciences Information. Cr. 3

Prereq: L S 6160, L S 7610. Access means to health science information via various electronic access points, including Medline and other health-related databases, CD-ROM products and user-friendly software packages. (Y)

7630 Administration and Management of Health Sciences Information Centers. Cr. 3

Prereq: L S 7610. Introduction to personnel management, budgetary constraints, information networks, information needs of diverse clien-

tele and the initiatives of the Joint Commission on Accreditation of Healthcare Organizations. (Y)

7640 Practicum: Public. Cr. 2-3

Prereq: 18 credits in appropriate graduate LIS courses. Offered for S and U grades only. On-site experience in public library/information center under direction of professional librarian and supervision of faculty member; theory and competencies. Seminars to be arranged. (T)

7650 Practicum: Health Science. Cr. 2-3

Prereq: 18 credits in appropriate graduate LIS courses; consent of adviser. Offered for S and U grades only. Planned on-site experience in a health science library/information center under direction of a professional librarian and supervision of a member of the faculty. Theory and competencies relevant to the environment. Recommended for students without experience in these changing informational environments. (T)

7660 Practicum: Academic. Cr. 2-3

Prereq: 18 credits in appropriate graduate LIS courses. Offered for S and U grades only. On-site experience in academic library/information center under direction of professional librarian and supervision of faculty member; theory and competencies. Seminars to be arranged. (T)

7670 Practicum: Special. Cr. 2-3

Prereq: 18 credits in appropriate graduate LIS Courses. Offered for S and U grades only. Experience in special library/information center under direction of professional librarian and supervision of faculty member; theory and competencies. Seminars arranged. (T)

7680 Practicum: School Media. Cr. 2-3

Prereq: 18 credits in appropriate graduate LIS courses. Offered for S and U grades only. On-site experience in school library media/information center under direction of professional librarian and supervision of faculty member; theory and competencies. Seminars to be arranged. (T)

7710 (HIS 7840) Introduction to Archival Methods I. Cr. 3

Basic training in archival methods. (F)

7720 (HIS 7850) Introduction to Archival Methods II. Cr. 3

Prereq: LIS 7710. Continuation of L S 7710. (W)

7730 (HIS 7890) Conservation and Administration of Photograph Collections. Cr. 3

Basic course in the fundamentals of photograph conservation; procedures for the organization and control of photographic collections used for research and historical documentation in archives, libraries, historical agencies and museums. (W)

7750 Introduction to Archival and Library Conservation. (HIS 7810) Cr. 3

Fundamentals of archival and library conservation problems and methods essential for effective preservation management of paper and associated materials. (S)

7760 Archival Description and Indexing. Cr. 3

Prereq: LIS 7710. Training in archival description: process of capturing, collating, analyzing, and organizing any information that serves to identify, manage, locate, and interpret the holdings of archival institutions, and to explain the contexts and records systems. (Y)

7770 (HIS 7860) Oral History: A Methodology for Research. (ANT 6360) Cr. 3

Techniques of gathering data from individuals for use in research, classroom teaching; historical, cultural or other contexts. (I)

7780 Computer Applications for Archives and Records Management. (HIS 7820) Cr. 3

Prereq: LIS 6210. Basic course on computer applications for control, access, and processing of archival materials and records in archives, libraries, historical agencies, businesses and museums. (Y)

7790 History of Books, Printing, and Publishing. Cr. 3

Development of writing, the alphabet, early materials, manuscripts, paper making, invention and spread of printing, famous presses, modern methods of print and electronic production. The book as artistic output of the culture and part of the world in which it was produced. (B)

7800 Contemporary Publishing. Cr. 3

For prospective librarians: overview of contemporary publishing in print and electronic environments; editorial, production, and distribution functions; economics of publishing; copyright issues; impact of changing information technologies. (Y)

7830 Infometry: Measuring Subject Information Fields. Cr. 3

Application of principles of infometrics, bibliometrics, and librmetrics in mapping, quantifying, and measuring communication network dynamics in virtual subject information fields. (Y)

7850 Issues in Librarianship. Cr. 1-3 (Max. 9)

Critical analysis of library research, socio-technological trends, implications for the profession. Topics to be announced in Schedule of Classes. (I)

7870 Evaluation of Library and Information Resources and Services. Cr. 3

Prereq: LIS 6010, 6110, 6210; 7340 recommended. Overview of applied research; emphasis on evaluation research as it related to library and information resources and services. (Y)

7990 Research and Directed Study. Cr. 1-8 (Max. 8)

Prereq: written consent of adviser, program director, and Dean on Petition and Authorization for Directed Study form prior to registration. Directed study and individual research under faculty guidance. Material fee as indicated in the Schedule of Classes. (T)

7998 Advanced Practicum. Cr. 2-3

Prereq: written consent of adviser. Open only to Library and Information Science Specialist Program students. Intensive internship in management or operation of a cooperating library or library-related project. (T)

7999 Master's Essay Direction and Research Methods. Cr. 3

Prereq: LIS 6010, 6110, 6210. Role of research in development of the profession. Research methods; analysis and evaluation of research reports. Core course. (T)

8110 Government Information Policies and Resources. Cr. 3

Prereq: LIS 7130 or consent of instructor. Selection, acquisition, access, and reference use of major federal, state and local documents. Overview of federal publishing program; the document-generating processes of congress, the judiciary, and the executive departments and regulatory agencies; the federal, state and local documentary system. Federal information policies and role of professional and governmental agencies in formulating policy. Material fee as indicated in the Schedule of Classes. (F)

8120 Legal Information Resources. Cr. 3

Characteristics of legal literature, including federal, state and administrative law; structure of U.S. court system and its publications; introduction to legal databases; special problems in legal reference service and administration; selection and use of basic tools in legal research. Material fee as indicated in the Schedule of Classes. (S)

8130 Business and Industry Information Resources. Cr. 3

Exploration of the structure, functional organization, and information needs of industrial, investment, and business enterprises. Study of bibliographic control of relevant literature, information sources, and specialized services. Material fee as indicated in the Schedule of Classes. (W)

8210 Advanced Classification and Cataloging. Cr. 3

Prereq: LIS 6210 or consent of instructor. Advanced problems in descriptive cataloging, including different forms of materials, and automated cataloging. Further study of theory, structure and application of classification systems and subject heading lists. Material fee as indicated in the Schedule of Classes. (I)

8230 Indexing and Abstracting. Cr. 3

Indexing and abstracting theoretics, standards, and practice in a range of disciplines, materials, and formats. Vocabulary control and thesaurus construction. Automatic indexing and computerized applications in information processing. (Y)

8410 Library Systems and Services. Cr. 1-3 (Max. 12)

Prereq: consent of adviser. Current administrative problems affecting library systems and services. Topics to be announced in Schedule of Classes. Material fee as indicated in the Schedule of Classes. (T)

8520 Imaging Technologies. Cr. 3

Document image processing technology; identifying applications; identifying and analyzing variables prior to application analysis; sources of information; attributes of major systems. (Y)

8530 Advanced Information Programming and Processing. Cr. 3

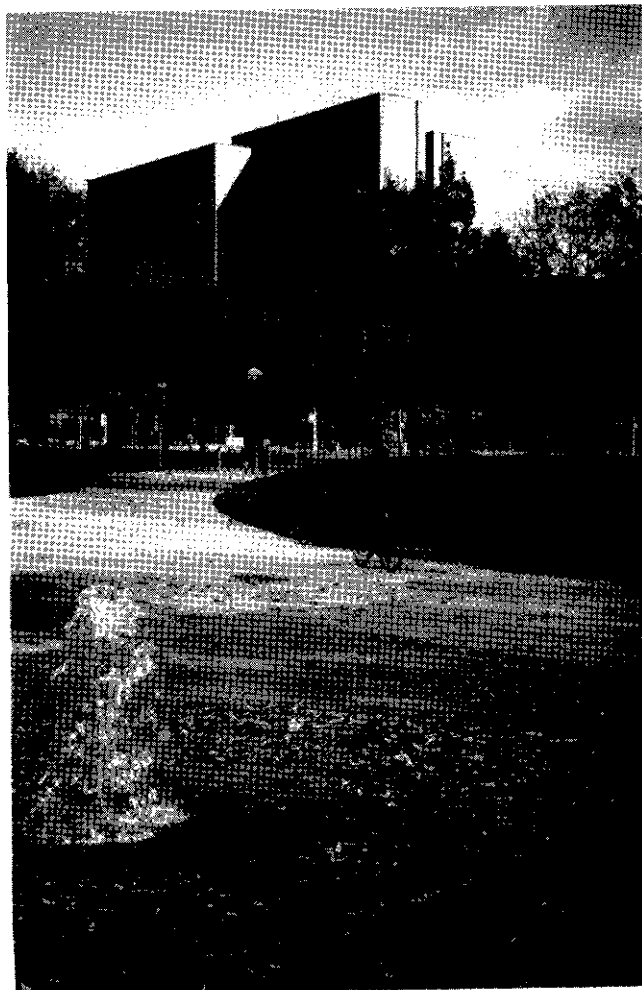
Prereq: LIS 6080. Basic programming and systems analysis for libraries. Examination of data management systems used for the automation of library functions. (W)

8550 Information Coordination System Analysis and Design. Cr. 3

Prereq: LIS 6080. Development of micronetworking and micromanaging skills to analyze, design, and construct an automatic instruction coordination system to improve workstation productivity through human-machine cooperation on programs, software packages, multimedia systems, and LANs. (Y)

8998 Specialist's Research Seminar. Cr. 3

Prereq: written consent of adviser. Advanced research methods and application. (I)



College of Lifelong Learning

DEAN: Robert L. Carter

Foreword

At the graduate level, the College of Lifelong Learning (CLL) offers the Master of Interdisciplinary Studies (MIS) through its Interdisciplinary Studies Program/Division of Degree Programs. Through its division of Metropolitan Programs and Summer Sessions (MPSS), CLL is responsible for providing organized extension programs and off-campus graduate course offerings for the various schools and colleges of the University. These academic courses can be used to fulfill credit requirements for many graduate degrees and certificate programs. In addition, the Division of Metropolitan Programs and Summer Sessions implements and administers the University-wide Summer Session.

To accommodate the needs of Wayne State students, the College operates five instructional extension centers throughout the Detroit metropolitan area, manages several degree programs at the University Center at Macomb, and offers classes at other selected locations in Michigan. The College also engages in the delivery of instructional programs through television broadcasting.

By way of such efforts, the College is able to serve and meet the educational needs of a diverse student audience: working adults who are unable to accommodate their schedules to the traditional on-campus program of graduate study; persons desiring courses of graduate instruction at or near their place of employment; persons pursuing a University graduate degree or certificate; and others who are simply taking courses to enrich their educational backgrounds.

The College, committed to serving this culturally diverse, industrialized metropolitan area, also offers noncredit courses, workshops, and special institutes that further knowledge acquisition and skill development for the nontraditional student. A similar opportunity is provided by the Visitor's Program, through which individuals enroll on a noncredit basis in regular credit courses (on or off campus, undergraduate or graduate). Enrollment is offered at a reduced tuition rate and is dependent on space available.

Class Schedules: A comprehensive schedule of CLL off-campus extension courses and programs is issued each semester. Individuals wishing to be added to the mailing list should contact the CLL Marketing Office, Detroit, Michigan 48202; telephone: (313) 577-4597.

DEGREE PROGRAMS

Master of Interdisciplinary Studies

The following degrees are offered by other schools and colleges within the University, but coursework for these programs is available through CLL credit extension services. Students should consult the Credit Extension Programs Office (577-4682) or their resident school/college for information regarding the amount of such coursework available through the College of Lifelong Learning.

Master of Business Administration

Master of Education with a Major in Educational Psychology

Master of Education with a Major in Mathematics Education

Master of Education with a Major in Educational Leadership

Ed.D. with a Major in Curriculum and Instruction

Education Specialist Certificate in Administration and Supervision

Education Specialist Certificate in Special Education

Chemical Engineering Graduate Certificate in Hazardous Waste Management

Master of Library and Information Science

Graduate Certificate in Archival Administration

Specialist Certificate in Library and Information Science

Graduate Certificate in Nursing Education

Interdisciplinary Graduate Certificate in Gerontology

Interdisciplinary Graduate Certificate in Infant Mental Health

Instructional Extension Centers

The College of Lifelong Learning maintains instructional centers at locations throughout the metropolitan area. Other instructional sites are located throughout southeast Michigan. For current information on center locations, call 313-577-4671 or consult the University *Schedule of Classes*.

NORTHWEST DETROIT CENTER

18100 Meyers Road
Detroit, MI 48235
Telephone: 313-577-0613
810-978-7881

NORTHEAST CENTER

St. Basil School
22860 Schroede
Eastpointe, MI 48021
Telephone: 313-577-3590,
810-771-3730

HARPER WOODS CENTER

Bishop Gallagher High School
19360 Harper Avenue
Harper Woods, MI 48225
Telephone: 313-577-3590
810-881-2438

OAKLAND CENTER

33737 W. Twelve Mile Road
Farmington Hills, MI 48331
Telephone: 313-577-3592
248-553-3545

STERLING HEIGHTS CENTER

Heritage Junior High School
37400 Dodge Park
Sterling Heights, MI 48312
Telephone: 313-577-4770
810-978-7881

Other major off-campus locations of Wayne State University programs:

UNIVERSITY CENTER

Mott Community College
1401 East Court St.
Flint, MI 48503
Telephone: 313-762-0299
313-762-0298

UNIVERSITY CENTER

Delta College
Delta Road
University Center, MI 48710
Telephone: contact Mott office

The University Center at Macomb is a partnership of Wayne State University and other universities and colleges which provides an extensive array of academic offerings:

UNIVERSITY CENTER

Macomb Community College
44575 Garfield
Clinton Township, MI 48038-1139
Telephone: 313-577-6261
810-263-6700

COLLEGE DIRECTORY

Note: 313 is the area code for all 577- telephone numbers below.

OFFICE OF THE DEAN	
Dean, Robert L. Carter	577-4675
Fax: 577-5466	
ACADEMIC SERVICES	
Director: Cam Liebold	577-6710
DEVELOPMENT	577-6710
MARKETING: Coordinator, Douglas Freed	577-4597
ADMINISTRATIVE SERVICES	
Business Manager: Arthurine Turner	577-6960
DIVISION OF DEGREE PROGRAMS	
Fax: 577-8585	
Associate Dean	577-4627
Assistant to the Associate Dean: Linda Hulbert	577-6567
Graduate Chairperson: Francis Shor	
INTERDISCIPLINARY STUDIES PROGRAM	
Director	577-4627
STUDENT SERVICES	
Associate Director, Howard Finley	577-0832
DIVISION OF METROPOLITAN PROGRAMS AND SUMMER SESSIONS	Fax: 577-7744
Associate Dean	577-4595
Assistant to the Associate Dean: Cynthia Ward	577-4596
Director, Credit Programs and Instructional Services: Barbara Roseboro	577-4682
Director, Corporate Relations:	
Kristopher Krzyzanski	577-6693
Director, Macomb County: Earl Newman	577-6261
Director, Oakland County: Sharon O'Brien	577-3592
Director, Wayne County: Keith White	577-0613
CREDIT PROGRAM INFORMATION	577-4682
Program Coordinators for: Business Administration; Education; Engi- neering; Fine, Performing and Communication Arts; Health and Physical Education; Liberal Arts; Library and Information Science; Nursing; Pharmacy and Allied Health Professions; Science; Social Work; Urban, Labor and Metropolitan Affairs; University General Education Program; Travel Study	
NONCREDIT PROGRAM INFORMATION	
Visitor's Program and other Noncredit Programs	
— Registration/Information	577-4665
TELECOMMUNICATIONS	
Coordinator: Paul Fiedler	577-4811
DIVISION OF STUDENT SERVICES	
Fax: 577-7800	
Associate Dean: Sandra E. Alford	
Nonmatriculant Advising: Frank Williams	577-4693
Credit Registration Information	577-4671
DIVISION OF COMMUNITY EDUCATION	
Director: Sandra E. Alford	577-4590
Associate Director: Mary C. Dickson	577-4591

Mailing address for all offices: (Department Name), College of Life-
long Learning, Wayne State University, Detroit, MI 48202

DIVISION of DEGREE PROGRAMS

INTERDISCIPLINARY STUDIES PROGRAM

Office: 2406 Academic/Administration Building; (313) 577-4612;
Fax: 577-8585; E-mail: misp@cll.wayne.edu
Interim Director and Associate Dean: Andre Furtado
Assistant to the Director/Associate Dean: Linda Hulbert
Graduate Chairperson: Francis Shor

Professors

Ronald Aronson, Julie Thompson Klein, Richard Raspa

Associate Professors

Eric Bockstael, Mary Lee Field, Moti Nissani, Daphne Ntiri, Roslyn Abt
Schindler, Francis Shor, Roland Wacker

Assistant Professors

Penelope Majeske, Lisa Maruca, James Michels, Jerome Reide, Marsha
Richmond

Adjunct Professor

Guerin Montilus

Professor Emeritus

Martin Glaberman

Assistant Professor Emeritus

Theodore Kotila

The Division of Degree Programs/Interdisciplinary Studies Program (ISP) offers the Bachelor of Interdisciplinary Studies, the Bachelor of Technical and Interdisciplinary Studies, the Service Agency Administration undergraduate minor and post-baccalaureate certificate programs, and the Master of Interdisciplinary Studies. These degree programs and courses of study are interdisciplinary in nature and designed for working adult students.

Master of Interdisciplinary Studies

The Master of Interdisciplinary Studies (MIS) degree is an interdisciplinary graduate degree modeled on the tradition of graduate liberal studies programs for adult students. Unlike specialized graduate courses of study, the MIS program emphasizes interdisciplinary approaches to significant questions, themes and problems. It develops problem-solving skills and cultivates critical and holistic approaches.

The MIS is designed to meet the need, expressed by both educators and employers, for individuals who can adapt flexibly to new workplace situations and who are comfortable learning new techniques and methods. In addition, the degree affords an opportunity for intellectual enrichment. It will appeal to four groups of students: those holding the BIS, BIS-Capstone, and BTIS degrees from the Interdisciplinary Studies Program; those who wish to design their own advanced degree program (in consultation with a faculty adviser); liberal arts students who seek advanced study beyond the bachelor's degree without specializing in one particular discipline; and those seeking a broadly integrative program in historical and cultural studies.

In a world ever more given to analysis and expertise, the MIS program teaches skills fundamental to an integrative habit of mind. We stress seeing problems from a number of angles and perspectives, uniting these views into a coherent understanding shaped by both clear standards of disciplinary depth and a firm grasp of interdiscipli-

nary process. The student is trained to see connections, to explore and to connect relevant facets of a theme, problem, or area of interest. The student also learns the various approaches, theories, and world views that seek to organize reality in an interdisciplinary manner.

Admission to the MIS program is open to holders of the bachelor's degree with majors in traditional academic disciplines as well as graduates of interdisciplinary programs. Admission is contingent upon meeting the requirements for admission to the Graduate School; for requirements, see page 16. An applicant must have an earned baccalaureate degree from a college or university of recognized standing, or present clear evidence that he or she is completing such a degree. A regular admission will be considered by the graduate admissions committee of the ISP if the applicant has an honor point average of 2.75 or above for the upper division (approximately the last sixty semester credits) of undergraduate course work. In accordance with Graduate School policy, qualified admission may be granted to an applicant who has an honor point average below 2.75, but under no circumstances below 2.25. All applicants should submit three letters of recommendation, a research paper writing sample, and a personal statement. Applicants wishing to pursue the Individualized Studies track should include a discussion of the concentration or program they wish to pursue, including prospective courses and a possible master's thesis topic. Other provisions for regular or qualified admission are stipulated by the Graduate School; see pages 16 - 18. In addition, applicants must submit an MIS Program *Application for Admission* and related materials. Applications for admission may be requested from the ISP office.

Scholarship: All course work to satisfy the following degree requirements must be completed in accordance with the regulations of the Graduate School governing graduate scholarship and degrees; see pages 16-30. All students are required to maintain a minimum 'B' average.

DEGREE REQUIREMENTS: The MIS degree is offered by the College of Lifelong Learning under the Plan A option, requiring successful completion of a minimum of twenty-four credits in course work, plus an eight-credit master's thesis (ISP 8998-8999). All entering students are required to take the Interdisciplinary Core Seminar (ISP 6010) and the Seminar in Historical and Cultural Studies (ISP 6110).

PROGRAMS OF STUDY: Students may choose from the following two options:

Historical and Cultural Studies (HC) focuses on the interrelatedness of the many and varying aspects of human culture over time and geographic location, drawing on perspectives from the humanities, the social sciences, and science and technology. It includes the four core courses ISP 6010, 6110, 8998, and 8999, plus three HC courses and a minimum of four elective credits.

Individualized Studies enables students to design their own concentrations, with the guidance and approval of a faculty adviser and in keeping with the framework and goals of the MIS degree. It includes the four core courses ISP 6010, 6110, 8998, and 8999, plus at least sixteen credits in a coherent individualized program developed from selected graduate-level offerings at Wayne State University.

GRADUATE COURSES (ISP)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

5500 Selected Topics in Interdisciplinary Studies. (ISP 7500) Cr. 2-4 (Max. 8)

Prereq: written consent of adviser and instructor. Topics to be announced in Schedule of Classes. (Y)

5990 Directed Study. Cr. 1-4 (Max. 08)

Prereq: written consent of adviser and instructor. Directed study and individual research under faculty member on a topic mutually agreed upon. (T)

6010 Interdisciplinary Core Seminar. Cr. 4

Prereq: admission to MIS program or consent of graduate chairperson. Must be elected only once; elect within the first two semesters. Introduction to themes, methods and objectives of advanced interdisciplinary study, and application of the interdisciplinary method to a major case study. Students will initiate an interdisciplinary research project. (Y)

6110 Seminar in Historical and Cultural Studies. Cr. 4

Prereq: admission to the MIS program or consent of the graduate chairperson. Must be elected within first two semesters; may elect only once. Introduction to principles of interdisciplinary historical and cultural study while exploring the phenomenon of change. Topics of case study vary each semester. This course is to be taken within the first two semesters of the MIS program and establishes prerequisite knowledge for further study in the program. (Y)

7010 Period Studies. Cr. 4 (Max. 8)

Prereq: ISP 6010 and 6110 or consent of graduate chairperson. Exploration of the interrelationship of various dimensions of cultural and social life as they form a specific "age" or "period." Specific periods of study vary each semester. (Y)

7210 Cross-Cultural Studies. Cr. 4 (Max. 8)

Prereq: ISP 6010 and 6110, or consent of graduate chairperson. Development of a comparative perspective on human cultures across nations or groups within a single nation. Topics of case study vary each semester. (Y)

7410 Knowledge Studies. Cr. 4 (Max. 8)

Prereq: ISP 6010 and 6110, or consent of graduate chairperson. Examination of the ways knowledge and perceptions of reality are socially constructed, and consideration of the roles of historical change, cultural relativity, language, social groups and institutions. Topics of case study vary each semester. (Y)

7500 (ISP 5500) Selected Topics in Interdisciplinary Studies. Cr. 2-4 (Max. 8)

Open only to graduate students. Topics to be announced in Schedule of Classes. (Y)

7990 Directed Study. Cr. 1-4 (Max. 8)

Prereq: written consent of adviser and instructor. Directed study and individual research under faculty guidance. (T)

7998 Interdisciplinary Seminar in Gerontology. Cr. 3

Prereq: enrollment in Graduate Certificate in Gerontology program, or approved minor or concentration in gerontology, or consent of instructor. Required introductory course for Graduate Certificate in Gerontology. Conceptual framework for study of old age and old people from multidisciplinary perspective. Evaluation of applied research in gerontology. (Y)

7999 Interdisciplinary Capstone Seminar in Gerontology. Cr. 3

Prereq: enrollment in Certificate in Gerontology program; completion of all other course work. Required for Graduate Certificate in Gerontology.

tology. Integrative knowledge, skills, and attitudes necessary for professional research or practice in gerontology. Synthesizes certificate coursework and interdisciplinarity. (Y)

8998 Master's Thesis Seminar I. Cr. 4

Prereq: completion of 16 credits in MIS program. Credit only on successful completion of ISP 8999. Exploration of theoretical and practical issues associated with interdisciplinary research. Students conceive, undertake research, and begin to write a Master's thesis in conjunction with a thesis adviser. (Y)

8999 Master's Thesis Seminar II. Cr. 4

Prereq: ISP 8998. Completion of Master's thesis in conjunction with thesis adviser. (Y)



DIVISION of METROPOLITAN PROGRAMS and SUMMER SESSIONS

Assistant to the Associate Dean: Cynthia Ward
Director of Credit Programs and Instructional Services:
Barbara Roseboro
Director of Corporate Relations: Kristopher Krzyzanski

Extension Directors

Earl Newman, Macomb County; Sharon O'Brien, Oakland County; Keith White, Wayne County

Program Coordinators

Kelly Boland, Paul Fiedler, Kelli Pugh, Donna Sottile, Gail Stanford

Center Academic Staff

Susan English, Linda Robertson, Angela Rochon, William F. Slater, Denise Thomas

Foreword

The Division of Metropolitan Programs and Summer Sessions is responsible for making available off-campus courses and programs offered by other Wayne State University schools and colleges, and for the administration of the University-wide Summer Sessions. Close coordination with University academic units assures that courses are appropriately selected, staffed, and scheduled. Courses carry full University credit and many can be used to complete Wayne State University degree and certificate programs. Instructional extension centers are maintained at convenient locations (see above).

The Division also develops and offers a variety of noncredit career and professional development courses, often in conjunction with cooperating University schools and colleges. The Visitor's Program makes it possible for interested community members to enroll in a wide variety of University courses on a noncredit basis at a reduced tuition rate.

Admission Requirements

Most credit courses offered through the Division of Metropolitan Programs and Summer Sessions are open to all students who are qualified by virtue of meeting the prerequisites for individual courses or programs. This applies regardless of whether or not the student has been formally matriculated at the University. Persons wishing to enroll in courses offered through this division and who have NOT been formally admitted to the University are registered as non-matriculated students in the College of Lifelong Learning. Upon admission to a Wayne State University school or college, credits earned in this status may be applied toward a degree, subject to the degree requirements and approval of the admitting school or college. Students are advised to consult with a specific degree program adviser, and are urged to submit formal application and admission documents as soon as possible. See the section on Graduate Admission, beginning on page 16.

Those individuals who have been formally admitted to Wayne State University in a degree, certificate, or post-baccalaureate program, and are in good academic standing will have course credits and grades earned through extension recorded on their transcripts in the same manner as credits earned on campus.

Guest students should complete the Guest Student Application Form and obtain approval for their registration plans from their home institution.

Academic Programs

The Division of Metropolitan Programs and Summer Sessions offers entire curricula or selected courses applicable to many Wayne State University degrees and certificates at convenient times and places for adult learners. The following schools and colleges regularly schedule courses through the Division of Metropolitan Programs and Summer Sessions. For current information on upcoming courses and programs available off campus, telephone: (313) 577-4682.

School of Business Administration: The complete Master of Business Administration courses are offered at the Oakland Center, and in Macomb County at the Sterling Heights Center and at the University Center at Macomb. School of Business Administration courses in the 6000-6090 series are open only to students holding matriculated status at Wayne State University. Graduate courses, numbered at the 7000 level, are open to students admitted to the M.B.A. program at Wayne State University and to graduate students from other schools/colleges with permission of the Office of Student Services, School of Business Administration.

College of Education: Graduate courses are offered at the extension centers to meet the specialized needs of the professional educator. Courses may lead to the completion of an advanced degree in health and physical education, counseling and related areas, teacher education, and administration. Complete degree programs, including master's and doctoral degrees, and specialist certificate programs, are offered at designated locations. At the request of local schools or districts, particular courses and in-service programs are scheduled at convenient sites.

The College also offers Education courses that form part of the Interdisciplinary Graduate Certificate Program in Gerontology.

College of Engineering: Advanced and graduate courses from all departments are periodically offered off campus and are open to qualified individuals as well as those in formal degree programs or those seeking professional development.

The Graduate Certificate Program in Hazardous Waste Management is offered at the Sterling Heights Center, Oakland Center, and in Grand Rapids. The program is also offered in Arizona and Utah. Nine of the thirteen required credits for this certificate are applicable to the chemical engineering Master of Science in Hazardous Waste Management degree. Those planning to pursue a certificate or master's degree must consult with a College Chemical Engineering adviser, and submit a Permit to Register form for the term desired pending admission to the Graduate School. For specific course information, telephone: (313) 577-4682.

College of Fine, Performing and Communication Arts: Courses in the Departments of Art and Art History (including photography), Communication, Music, Dance, and Theatre are offered at several off-campus centers.

College of Liberal Arts: Advanced and graduate courses for both full-time and part-time students are available in English, political science, sociology, and history at selected off-campus centers. Liberal arts courses also form part of the interdisciplinary Graduate Certificate Program in Gerontology.

Library and Information Science Program: An active off-campus graduate program leads to the Master of Library and Information Science degree, accredited by the American Library Association, with courses offered at selected extension locations including the Oakland Center, Grand Rapids, Kalamazoo, Lansing, and Flint/Saginaw. Some of the off-campus courses may be applied to the Graduate Specialist Certificate in Librarianship and the Graduate Certificate in Archival Administration.

College of Nursing: Courses leading to the Master of Science in Nursing are offered at several locations. The College of Nursing offers a graduate certificate in nursing education. The College also participates in the interdisciplinary Graduate Certificate Programs in Gerontology and Infant Mental Health

College of Pharmacy and Allied Health Professions: The Occupational Therapy Department offers a limited number of courses off campus.

College of Science: Courses are scheduled off campus in nine departments: Audiology and Speech-Language Pathology, Biological Sciences, Chemistry, Computer Science, Geology, Mathematics, Nutrition and Food Science, Physics and Astronomy, and Psychology. The College also participates in the interdisciplinary Graduate Certificate Program in Gerontology.

School of Social Work: Graduate courses are offered at a variety of off-campus locations to meet the needs of full-time and part-time social work students and practicing professionals. Professional continuing education programs are also offered in Port Huron at St. Clair Community College. The School also participates in the interdisciplinary Graduate Certificate Programs in Gerontology and in Infant Mental Health

College of Urban, Labor, and Metropolitan Affairs: Introductory and advanced courses are scheduled at most extension centers. College programs include the Master of Arts and Graduate Certificate in Dispute Resolution, and the Master of Arts in Industrial Relations. This College incorporates an interdisciplinary and interdepartmental approach to educational programming.

Television Courses: Television courses provide a way to earn college credit from a variety of University colleges through courses broadcast on WTVS Channel 56, and the College Cable Channel. Along with the broadcasts, students are required to use a textbook and/or study guide and meet with an instructor at scheduled times.

Travel Study: Sponsoring schools and colleges in the University offer travel study programs through CLL. Most programs occur in the Summer Sessions; times and locales vary each year. Recent travel study programs include:

COLLEGE OF LIBERAL ARTS

Africana Studies: culture courses in Africa

Romance Languages: intensive language and culture immersion in France

Anthropology: culture courses in Cuba, archeological field school in Ecuador

COLLEGE OF EDUCATION

Teacher Education: comparative/bilingual education issues in five European cities

Science Education: ecology courses at Higgins Lake, Michigan

COLLEGE OF SCIENCE

Biological Sciences: marine lab at the Florida Keys, field study courses at Fish Lake, Michigan

COLLEGE OF FINE, PERFORMING, & COMMUNICATION ARTS,

Fashion Merchandising: design in New York City

Noncredit Programs

The Division of Metropolitan Programs and Summer Sessions offers through its noncredit unit many personal and professional development courses which reflect and anticipate the changing nature of current society. Programs are designed to provide quality experience to members of the community; to provide a forum which allows adults to discuss topical issues of interest; to gather insight from traditional disciplines; and to present contemporary thinking, practice and technology. Offerings vary widely in subject matter and length. Courses require no special admission status and are regularly scheduled both on and off campus to suit the needs of groups and individuals.

VISITOR'S PROGRAM

The Visitor's Program allows any adult who is not currently enrolled for credit courses at Wayne State to attend a wide range of University courses for no credit. Provided space is available, adults may enroll as visitors in most of the courses listed in the *Schedule of Classes*.

It is not necessary to be formally admitted to the University to take advantage of this noncredit program. Visitor status students do not submit written work or take examinations.

Tuition for courses enrolled under visitor status is one-half of the freshman credit rate plus one-half of the registration fee; tuition must be paid in full at the time of registration.

Registration for both on-campus and off-campus classes takes place the first week of classes and is processed by the College of Lifelong Learning's Noncredit Programs unit located on the main campus. Students may also register by mail or telephone, using MasterCard or Visa credit card, by calling the Noncredit Programs unit at (313) 577-4665.

PROFESSIONAL TRAINING and DEVELOPMENT COURSES

The CLL Noncredit Programs unit specializes in the design of non-credit, customized professional training programs for business, industry and public or private organizations. Also, training/development programs or packages may be created in conjunction with other University schools and colleges, to suit the needs of specific clients. A recent program, developed in conjunction with the City of Detroit, offers courses in substance abuse treatment and prevention counseling, taught by experts in the field. For a specific list of non-credit offerings, telephone: (313) 577-4665.

NONCREDIT REGISTRATION SERVICES and FEES

Course fees and refund and transfer policies vary by program. Registration for all *noncredit courses* or the *Visitor's Program* may be done by telephone, using MasterCard or Visa credit card; or in person at the CLL Noncredit Office, Detroit; telephone: (313) 577-4665. For information on and registration for all noncredit courses, telephone: (313) 577-4665.

A student is not considered to be enrolled in a noncredit course or program until payment is received. Wayne State University reserves the right to cancel any program due to insufficient enrollment, in which case fees are refunded.

Development Office

In order to maintain its growth and funding base, CLL has its own Development Office. The responsibilities of the Development Office include the stimulation of alumni support for the College; it sponsors direct mail appeals, annual phonathons, and alumni-directed activities for graduating students. The Office also develops proposals to private sources, such as foundations, for funding specific programs.

Telecommunications

Coordinator: Paul Fiedler

The College of Lifelong Learning works with university television and the community telecommunications network in maintaining and operating the delivery of live and pre-produced distance learning television courses for Wayne State University. This center is responsible for coordinating instructional television services provided by the College and maintains eighteen ITFS television channels twenty-four hours a day. The College Cable Channel and the Working Channel, offered in conjunction with WTVS Channel 56, are included in this network for the delivery of university-wide instructional television.

Marketing

Coordinator: Douglas Freed

The Marketing Department cooperates with other units within and outside the College of Lifelong Learning to advertise CLL programs through print media, direct mail, radio, television, and various other means. This office develops promotional strategies, assists in the preparation and editing of copy, develops and maintains mailing lists, and designs and distributes public relations materials. For information about CLL, please e-mail to: info@cll.wayne.edu or use our Web request form at: www.cll.wayne.edu/request.htm

DIVISION of STUDENT SERVICES

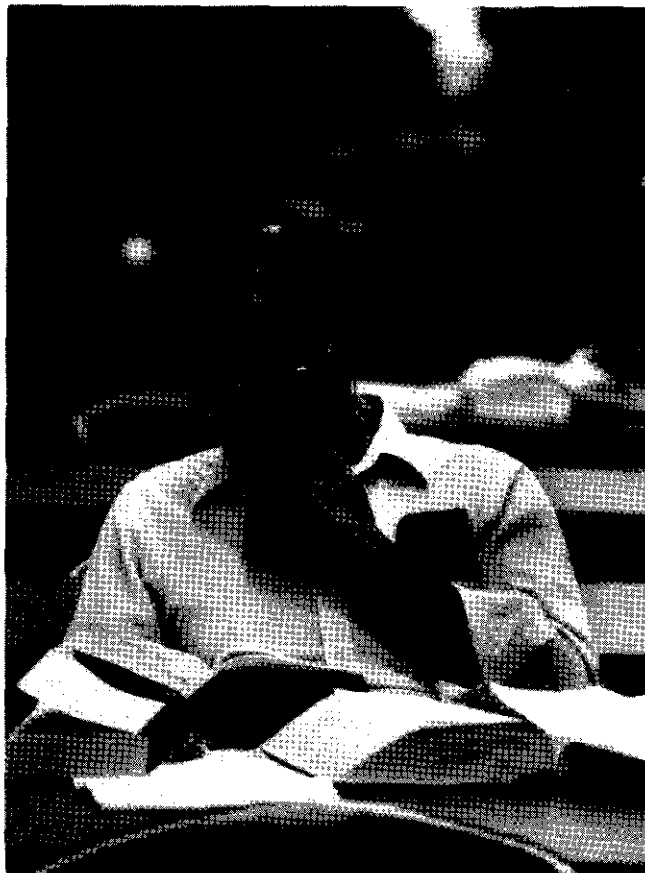
Advising

Advising services for students taking extension classes are provided by a CLL academic adviser. He/she can provide information and advice concerning University programs, admission procedures, and various academic regulations pertaining to student status. Students who do not have formal matriculated status in the University (non-matriculants) are urged to confer with the Nonmatriculant Student Adviser before registration; the adviser can offer assistance with educational problems and/or degree objectives. For further information or an appointment, contact the Nonmatriculant Student Services Office at 313-577-4693, or the nearest off-campus center. Limited information regarding financial aid and some academic advising are available at the Wayne State University Oakland Center on a walk-in basis as well as by appointment. Telephone: 248-553-3545 or 313-577-3592. Graduate advisers from the School of Business Administration visit the University Center at Macomb periodically.

Registration Services and Fees

Registration for off-campus classes is held during regular telephone registration periods for each semester (see Academic Calendar, page 4). A registration schedule is sent to all students who were registered the previous semester. For further information, telephone CLL Registration

Fees for credit classes offered through CLL, for admitted or non-admitted, graduate or undergraduate students, are the regularly established fees of Wayne State University as published each semester in the University and CLL Schedules of Classes. All fees are subject to change at any time without notice by action of the Board of Governors of the University. (See Fees, page 18.)



School of Medicine

DEAN: Robert J. Sokol

Medical School Calendar 1998-2000

(The following calendar is a tentative schedule for the M.D. curriculum)

YEAR I STUDENTS — 1998-99

Registration and Orientation Mon., Aug. 3 - Fri., Aug. 7, 1998
Classes Begin Mon., Aug. 10, 1998
Labor Day Recess Mon., Sept. 7, 1998
Thanksgiving Recess Thurs. and Fri., Nov. 26 - 27, 1998
Spring Recess To be assigned
Classes End To be assigned

YEAR II STUDENTS — 1998-99

Registration Fri., July 31, 1998
Classes Begin Mon., Aug. 3, 1998
Labor Day Recess Mon., Sept. 7, 1998
Thanksgiving Recess Thurs. and Fri., Nov. 26 - 27, 1998
Christmas Recess To be assigned
Spring Recess To be assigned
Classes End To be assigned

YEAR III STUDENTS — 1998-99

Registration Thurs., June 11, 1998
Rotation I July & August 1998
Rotation II Sept. & Oct. 1998
Rotation III Nov. & Dec. 1998
Rotation IV Jan. & Feb. 1999
Rotation V March & April 1999
Rotation VI May & June 1999
Classes End June 1999

YEAR IV STUDENTS — 1998-99

Registration Fri., June 26, 1998
Period 1 July 1998
Period 2 August 1998
Period 3 September 1998
Period 4 October 1998
Period 5 November 1998
Period 6 December 1998
Period 7 January 1999
Period 8 February 1999
Period 9 March 1999
Period 10 April 1999
Period 11 May 1999
Residency Matching Day To be assigned
Commencement To be assigned

YEAR I STUDENTS — 1999-2000

Registration and Orientation Mon., Aug. 2 - Fri., Aug. 6, 1999
Classes Begin Mon., Aug. 9, 1999
Labor Day Recess Mon., Sept. 6, 1999
Thanksgiving Recess Thurs. and Fri., Nov. 25 - 26, 1999
Spring Recess To be assigned
Classes End To be assigned

YEAR II STUDENTS — 1999-2000

Registration Fri., July 30, 1999
Classes Begin Mon., Aug. 2, 1999
Labor Day Recess Mon., Sept. 6, 1999
Thanksgiving Recess Thurs. and Fri., Nov. 25 - 26, 1999
Christmas Recess To be assigned
Spring Recess To be assigned
Classes End To be assigned

YEAR III STUDENTS — 1999-2000

Registration To be assigned
Rotation I July & August 1999
Rotation II Sept. & Oct. 1999
Rotation III Nov. & Dec. 1999
Rotation IV Jan. & Feb. 2000
Rotation V March & April 2000
Rotation VI May & June 2000
Classes End June 2000

YEAR IV STUDENTS — 1999-2000

Registration Fri., June 25, 1999
Period 1 July 1999
Period 2 August 1999
Period 3 September 1999
Period 4 October 1999
Period 5 November 1999
Period 6 December 1999
Period 7 January 2000
Period 8 February 2000
Period 9 March 2000
Period 10 April 2000
Period 11 May 2000
Residency Matching Day To be assigned
Commencement To be assigned

FOREWORD

The primary mission of the School of Medicine is to provide the Michigan community with medical and biotechnical resources, in the form of scientific knowledge and trained professionals, so as to improve the overall health of the community.

The School offers educational programs leading to the following degrees: Doctor of Medicine, Doctor of Philosophy, Master of Science and Master of Arts. Graduate education in clinical fields, post-doctoral study and continuing medical education programs are also offered within the School. Two hundred fifty-six students are admitted annually to the M.D. program and approximately three hundred sixty students are enrolled in Ph.D. or Master's degree study in fourteen program areas, predominantly in the basic medical sciences. More than eight hundred students are post-graduate trainees as medical residents, post-doctoral fellows, or fellows in twenty-four different clinical research programs. Continuing education programs, seminars and colloquiums serve the faculty and students of the School as well as professionals throughout the community as a resource for current and ongoing developments in the health sciences. In addition to degree programs, the School offers courses in many basic medical science disciplines which are appropriate for students in other colleges and schools of the University. Non-degree enrollment in basic science courses at the graduate level is permitted on a limited basis for qualified students.

Research focusing on human health is the foundation of the activities in the School of Medicine. Fundamental and applied research in biomedical sciences, clinical specialties, and health care systems is directed by faculty of the School. Research programs at the School are supported by more than seventy million dollars annually through research grants, contracts and gifts. Members of the faculty serve on scientific boards, panels, study groups and in professional leadership roles in health care regionally, nationally and internationally. The research facilities of the School are modern, well-equipped and continually growing with the pace of current technological advances.

The clinical services provided by the faculty, post-graduates and students in the School are rendered predominantly through The Detroit Medical Center institutions. The School, through the University, has entered into partnership with The Detroit Medical Center hospitals. The chairpersons of our departments or their designees serve as heads of departments or divisions within each of the Medical Center hospitals. The School also perceives a responsibility to the population of the Detroit metropolitan region as a whole, both as an educational institution and as a supplier of physicians who are highly skilled providers of health care to staff other institutions and to practice in the community. Furthermore, the School is committed to its educational and care delivery activities within the context of medical education as a national activity, to which each institution contributes responsibly according to its abilities and resources.

History of the School

The School of Medicine of Wayne State University has been operating and granting degrees as a college of medicine since 1868. Originally called The Detroit Medical College, it was founded by Dr. Theodore A. McGraw, a native of Detroit who returned to the city in 1865 after serving for two years in the United States Army as a contract surgeon.

In 1879 a second medical college, the Michigan College of Medicine, opened in Detroit. The two colleges soon united to become the Detroit College of Medicine. In 1919, the Detroit College of Medicine and Surgery, as it was known then, became an official part of the Detroit Board of Education and thus an important unit in the rapidly developing Colleges of the City of Detroit. In 1933, the name of the Colleges of the City of Detroit changed to Wayne University in honor of the American Revolutionary War hero General Anthony Wayne. Wayne University became a State institution in 1956.

With a total enrollment of more than 1,000 medical students, the Wayne State University School of Medicine is the largest single campus medical school in the country.

Accreditation

Programs in the Wayne State University School of Medicine are accredited by the Liaison Committee on Medical Education, representing the American Medical Association and the Association of Medical Colleges (M.D. Program); the Liaison Committee of Graduate Medical Education of the American Medical Association and various Residency Review Committees (Residency Programs); and the Accreditation Council of Continuing Medical Education (Continuing Medical Education).

Wayne State University Medical School Facilities

Gordon H. Scott Hall is the main education building for the School of Medicine. It provides facilities for pre-clinical and basic science education, basic science departments, research laboratories for basic and clinical programs and the administrative offices of the School.

The Helen Vera Prentis Lande Medical Research Building houses research laboratories for clinical and basic science faculty.

The Louis M. Elliman Clinical Research Building provides research laboratories, experimental surgical suites and specialized research facilities for the Departments of Internal Medicine, Surgery, Pediatrics, and Neurology.

The C. S. Mott Center for Human Growth and Development provides research space for programs in human reproduction, growth and development and houses the NIH-designated Fetal Alcohol Research Center.

The School of Medicine is closely affiliated with a Veterans Administration hospital, seven Detroit Medical Center hospitals, and other major urban and suburban hospitals in the metropolitan Detroit area. All offer programs for third- and fourth-year medical students.

Wayne State University also works in affiliation with the *Barbara Ann Karmanos Cancer Institute*, one of the nation's leading cancer research, treatment, education and outreach centers.

Detroit Medical Center Facilities

The Detroit Medical Center (DMC) includes:

Children's Hospital of Michigan, which specializes in medical research and treatment for infants and children — in particular, pediatric hematology, oncology, cardiac surgery, and the treatment of renal disease; and houses a major poison control center;

Detroit Receiving Hospital and University Health Center, which specializes in the treatment of adult emergency/trauma cases, and includes special facilities for the care of emergency psychiatry, burn and spinal injuries; The University Health Center, connected to the hospital, is one of the country's largest multidisciplinary outpatient facilities, with twelve primary care service groups and more than twenty-five medical specialty services for ambulatory care;

Harper Hospital, which specializes in oncology, cardiology, general surgery and a number of additional surgical specialties and subspecialties;

Grace Hospital, a full-service hospital which offers a wide range of outpatient services and is slated to merge with Sinai Hospital;

Hutzel Hospital, which includes among its areas of excellence: obstetrics, gynecology, gynecologic oncology, ophthalmology, neonatology, perinatology, urology and orthopedic surgery;

Huron Valley -Sinai Hospital, located in a northern suburb, is a general medical-surgical community hospital;

Sinai Hospital, a full-service hospital in northwest Detroit, to be combined with Grace Hospital;

Rehabilitation Institute, Inc., which uses an interdisciplinary approach to help physically disabled persons reach their maximum level of independence;

Kresge Eye Institute of Wayne State University, housed in Hutzel Hospital, which is a major center for research and treatment of eye diseases;

Gershenson Radiation Oncology Center, which provides high-technology radiation treatment services for the Barbara Ann Karmanos Cancer Institute and all medical center hospitals. A magnetic resonance imaging center and the world's first superconducting cyclotron are housed there.

Shiffman Medical Library and Learning Resources Centers

Director: Ellen B. Marks

Assistant Director: Sandra Martin

Librarians: Nancy Adams, Linda Draper, Pamela Gannon, Diane LeBar, Juliet Mullenmeister, Keir Reavie, Lothar Spang, Wendy Gang Wu

HOURS:

Monday - Thursday 8:00 a.m. - 11:00 p.m.

Friday 8:00 a.m. - 9:00 p.m.

Saturday 9:00 a.m. - 9:00 p.m.

Sunday 12:00 p.m. - 11:00 p.m.

TELEPHONE, E-MAIL and WEB:

<http://www.lib.wayne.edu/shiffman/shiffman.html>

askmed@wayne.edu

<i>Circulation and Reserves</i>	577-1089
<i>Reference and Research</i>	577-1094
<i>Information Management Programs</i>	577-6665
<i>Document Delivery</i>	577-1100
<i>Director</i>	577-6663

The Shiffman Medical Library is located on the Detroit Medical Center campus adjacent to Scott Hall. Orientation programs, small group workshops and individualized instruction are available to graduate students to support them, throughout their programs, in using the latest information resources. Key services in support of graduate education include: seven-day per week reference service, remote and on-site electronic access to the major biomedical databases including MEDLINE, Science Citation Index, the National Center for Biotechnology Information, Dissertation Abstracts with partial text, and an array of electronic journals and other information services to save the student's time. See <http://www.lib.wayne.edu/shiffman/shiffman.html> for access to these resources, to sign up for workshops, to ask reference questions, or to make suggestions to the library. Materials not available in the W.S.U. libraries are obtained for graduate students free of charge. Access to the libraries of the University of Michigan, Michigan State University and various specialized collections is also available to graduate students

Two large computer labs and a number of free-standing computers are available in the Medical Library. The computer labs maintain software assigned or recommended by faculty, or requested by students, as well as the major productivity tools including word processing. Hands-on instructional workshops and short courses can be arranged for individual students, small groups, or departments. These programs cover a broad range of scholarly information management skills. collections of over 279,000 volumes and 2,970 journal subscriptions. Outstanding services in support of graduate research and study include: seven-day per week reference and online information services; access to the complete Medline database from the Library, offices, laboratories and homes; on-site access to full-text databases in the health sciences and subsidized or no-charge access to all databases at the National Cancer Institute, National Library of Medicine, National Center for Biotechnology Information, and prominent national research sites. Microcomputers are available for student use within the Library, which includes access to the Internet as well as self-instructional software. Instructional programs in support of health sciences information management comprise a growing part of the services of Shiffman Library. Graduate students are encouraged to sign up for these courses at the Reference Desk.

All information resources needed for graduate study can be accessed through the University Libraries' Detroit Area Library Net-

work (DALNET), a fully-computerized library system; special resource-sharing programs with the University of Michigan and Michigan State University; and the Shiffman Library's membership in the National Network of Libraries of Medicine, which extends the graduate student's access to the collections of all academic health sciences center libraries.

Office of Student Affairs

Assistant Dean for Student Affairs: Jane R. Thomas, Ph.D.

This office is under the supervision of an assistant dean. It includes: academic, career, and personal counseling services; financial aid counseling; tutorial services; a special study skills consultation service; and support for student government and organization activities. The staff is committed to assisting students in every way possible as the students work toward M.D. degrees. These programs are part of the School's commitment to provide each matriculant with support services so that the rigorous educational program can be presented within as comfortable an environment as possible.

SERVICES

Counseling: Appointments for academic, personal and career counseling can be arranged through the Office of Student Affairs.

Academic Resources Counseling: A specialist in techniques designed for the medical curriculum is available to all students seeking to improve and/or enhance their academic performance. Individual tutoring services are available, as well as group review sessions.

Development and Alumni Affairs

Office: First Floor, Scott Hall, 540 E. Canfield

Executive Director of Development: Howard B. Newman

Director of Development and Alumni Affairs: Priscilla J. Khoury

Manager of Alumni Affairs: Nancy Margherio

The *Development Office* maintains a staff to support all aspects of fund raising from private sources. It is dedicated to helping meet current challenges and prepare for future opportunities in keeping with the spirit and traditions established by the School's founders over a century ago.

The Development Office's fundraising program is based on the premise that the personal and financial involvement of its alumni and friends enhance the quality and reputation of this School. Only through a broad base of volunteer assistance can the School of Medicine secure enough private gifts to help supplement state assistance, tuition, and other means of support essential to providing an outstanding program of education and research.

Each year the *W.S.U. Medical Alumni Association* conducts a Clinic Day and Alumni Reunion where discussions by leading scientists and an awards program are held. The Association provides scholarships and awards which are announced at commencement. In addition, the School sponsors reunions at several medical specialty conventions around the country. Alumni and former residents (now numbering over 11,400, and house officers numbering 5,200) and their spouses are encouraged to maintain close ties with the School. The Alumni Office carries out the decisions and plans made by the *W.S.U. Medical Alumni Association Board of Governors*.

Office of Public Affairs and Publications

Office: 1281 Scott Hall

Director: Kathleen M. Wedemire

The Office of Public Affairs and Publications is responsible for the communications and public relations programs for the School. The Office publishes alumni and faculty newsletters, a research magazine, an annual report and a variety of collateral publications. In addition, the Office conducts media relations and promotional activities and serves as an information resource regarding faculty, student and alumni achievement related to research, clinical care, and medical education.

SCHOOL DIRECTORY

DEAN	1241 Scott Hall; 577-1335
ADMINISTRATION AND FINANCE	1241 Scott Hall; 577-1048
CONTINUING MEDICAL EDUCATION. 4H Univ. Hlth. Ctr;	577-1180
DEVELOPMENT AND ALUMNI AFFAIRS	
Alumni Affairs	1128 Scott Hall; 577-3587
Development	1128 Scott Hall; 577-1495
Public Affairs	1281 Scott Hall; 577-1429
PERSONNEL OFFICE	1248 Scott Hall; 577-1163
INFORMATION	1102 Scott Hall; 577-1460
MEDICAL CENTER RELATIONS .9C Univ. Health Center;	745-5194
M.D. PROGRAMS:	
Admissions	1310 Scott Hall; 577-1466
Curricular Affairs	1207 Scott Hall; 577-5611
Student Affairs	1369 Scott Hall; 577-1463
Financial Aid	1374 Scott Hall; 577-1039
Records and Registration	1272 Scott Hall; 577-1470
NEUROSCIENCE PROGRAM	1269 Scott Hall; 577-1489
PH.D. AND M.S. PROGRAMS	1261 Scott Hall; 577-1455
RESEARCH	1269 Scott Hall; 577-1455
RESIDENCY GRAD. MED. ED. ....	.9C Univ. Hlth. Ctr; 745-5146

Mailing address for all offices: Wayne State University, School of Medicine, 540 East Canfield, Detroit, Michigan 48201

GRADUATE DEGREES AND CERTIFICATES

There are two major types of academic programs in the School of Medicine those leading to the M.D. degree and postgraduate medical education; and those programs in the basic medical sciences which offer Master of Science or Doctor of Philosophy degrees.

DOCTOR OF MEDICINE

DOCTOR OF PHILOSOPHY with a major in:

*Anatomy and Cell Biology
Biochemistry
Cancer Biology
Cellular and Clinical Neurobiology
Immunology and Microbiology
Medical Physics
Molecular Biology and Genetics
Pathology
Pharmacology
Physiology*

MASTER OF SCIENCE with a major in:

*Anatomy and Cell Biology
Biochemistry
Cancer Biology
Community Health Services
Genetic Counseling
Immunology and Microbiology
Molecular Biology and Genetics
Pharmacology
Physiology
Psychiatry and Behavioral Neurosciences
Radiological Physics
Rehabilitation Sciences*

MASTER OF SCIENCE IN BASIC MEDICAL SCIENCES

MASTER OF SCIENCE IN MEDICAL RESEARCH

GRADUATE CERTIFICATE in

Community Health Services Research and Evaluation

DOCTOR OF MEDICINE

Educational Goals

Our goals are for all graduates to be:

- knowledgeable in the basic science and clinical aspects of medicine and in the application of these principles;
- committed to the pursuit of excellence in all of their professional activities;
- well-grounded in the humanistic aspects of health care;
- well-prepared for future training for careers in patient care, health service, teaching or research;
- skilled in self-education;
- committed to continuing education;
- aware of their limitations throughout their careers;
- equipped to understand future developments and to be effective problem-solvers in patient care, health care delivery systems, and other fields of medicine.

Admission and Registration — M.D.

Assistant Dean for Admissions: James W. Collins, M.D.

The School of Medicine currently accepts 256 students for its entering class. The students are selected from a large number of applicants. Encouragement is given to qualified students from minority groups, medically underserved areas, and students who bring diversified interests and abilities to the medical profession. Every effort is made to choose those students who possess the academic and personal characteristics which will enable them to succeed in completing the School of Medicine curriculum.

Academic Recommendations for Admission

Although the Wayne State University School of Medicine prefers that applicants for admission have earned a bachelor's degree, it will occasionally consider students of unusual academic attainment and maturity who have completed three years of college.

Recommendations for entrance are: general physics with laboratory, one year; inorganic and organic chemistry with laboratory, one year each; general biology or zoology with laboratory, twelve semester or eighteen quarter credits. The student is urged to select those subjects which will contribute substantially to a broad cultural background. Applicants from professional schools must have completed ninety semester credits in liberal arts courses.

It is to be noted that when students are accepted before completion of their premedical requirements, they must maintain a satisfactory scholastic average in their continued premedical work to warrant enrollment in the School of Medicine.

The *Medical College Admission Test* is required of all applicants for admission into the first year class. Students seeking admission into the September freshman class should take this test no later than October of the previous year. After a preliminary review of application credentials, interviews are held with those applicants who warrant further consideration.

Admission to the First-Year Class

The School of Medicine adheres to the acceptance procedures of the Association of American Medical Colleges, including the 'Early Decision Plan.' Admission procedures of this School are:

1. No place in the first-year class shall be offered to an applicant more than one year before the actual start of instruction for that class.
2. Following the receipt of an offer of a place in the first-year class, a student shall be allowed two weeks in which to make a written reply.
3. Payment of a \$50.00 deposit is required upon acceptance by the student of a place in the first-year class. The deposit will be credited toward the initial tuition payment.
4. No student who has at any time been requested to withdraw for any reason from a medical school in which he/she has been regis-

tered will be accepted by this School of Medicine. Students who have been dropped for poor scholarship by the School of Medicine should not expect favorable consideration for readmission.

5. Any applicant accepted by the School of Medicine who does not complete enrollment must apply for readmission and meet all requirements in force at the time of such new application.

Admission with Advanced Standing

Students from approved L.C.M.E. American medical schools may be admitted with advanced standing to the second and third years only, subject to the number of vacancies which may exist in the second and third years. Application for advanced standing should be made not later than July 15. The following requirements must be met:

1. An applicant must have matriculated as a student in an approved United States or Canadian medical school for a period of time equal to that spent by the class in which he/she seeks entrance and must have completed courses equivalent to those required of that class.
2. The applicant must file a completed application form and must present official transcripts from each school attended showing that he/she meets, in full, the entrance requirements for admission to this School.
3. The applicant must be a student in good standing at the medical school from which he/she is withdrawing. A letter of support from the dean of that school is required.
4. The applicant must take such examinations in the courses for which he/she seeks credit as may be required by the faculty of the School of Medicine (either the National Board Part I or the Medical Science Knowledge Profile exam).

Minority Recruitment

Director: Julia M. Simmons, M.A.

This unit is responsible for assisting in maintaining a representative enrollment of minority students through a combination of counseling and academic programs for high school, college, and post-baccalaureate students. The post-baccalaureate program guarantees admission to the School of Medicine for all students who perform satisfactorily in the program. This unit is also responsible for the summer program for incoming minority students.

Registration Requirements

Physical Examination: Freshman medical students are sent a physical form with registration materials. Each student must present proof of a physical examination at or before registration for the freshman year. Students are also required to be annually tested for TB (skin test or chest x-ray).

Health Insurance: Students must present, at registration, proof of health insurance. The University offers low cost health insurance which may be purchased at registration.

Transcripts: Transcripts of all university-level work must be on file in the Registrar's Office for each medical student, including the degree statement from the university from which the student obtained his/her degree.

FEES

All fees are payable in advance. Listed below are the fees in effect as of the publication of this bulletin. They are subject to change at any time without notice by action of the Board of Governors.

Medical Student Fees Regular Program

	<i>Resident</i>	<i>Nonresident</i>
Annual Tuition	\$9,566.00	\$19,061.00
Annual Student Fee:		
Years I and II	\$350.00	\$350.00
Years III and IV	\$100.00	\$100.00

Cancellation of Registration and Refunds : If a student finds it necessary to withdraw from the University, he/she should notify the Office of Student Affairs, Wayne State University School of Medicine, in writing. If notice of withdrawal is sent by mail, the date of its postmark will be considered the effective date. The refund schedule is as follows:

<i>Through the end of the sixth week of classes</i>	100% less \$50.00 ¹
<i>Thereafter</i>	No refund

Books and Equipment: The total four-year cost for books, supplies and equipment is approximately \$2,100. The costs are approximately \$750 for each of the first two years, and \$390 and \$245, respectively, for the subsequent two years. Books and equipment are available in bookstores near the School. Student organizations and volunteers also conduct sales of certain equipment and of used books each year.

Financial Aid

The primary responsibility for financing a medical education rests with the student and his/her family. Copies of the parents' and student's federal tax Form 1040 is required of all financial aid applicants. The School will assist the student as determined by needs analysis and available funding. All financial aid applicants must apply for the Stafford Student Loan. Financial aid must be applied for each year, in February. Information is available from the Financial Aid Office.

Unrestricted private donor funds are used for tuition scholarships awarded by the admissions office in the amount of resident tuition to five to ten incoming freshmen per year, based on academic achievement. These are renewable each year, providing the student places in the upper one-half of the class for that year. Restricted private donor and organization funds are awarded to students according to the guidelines set forth by the donors, based on financial need, academic achievement, county of residency, or affiliation with a particular group.

Board of Governors grant funds are awarded to medical students each year, based on family financial need. Low interest loans from private donor funds are awarded to students, based on need and criteria specified by the donor. In addition to institutional sources, medical students receive aid from federal programs in the form of need-based grants and loans. Higher-interest loans, not based on financial need, may be borrowed by medical students when family resources are not available.

The Financial Aid Office is located in 1374 Scott Hall, 540 East Canfield, Detroit, MI 48201. Call (313) 577-1039 for information and application materials.

¹.\$50.00 is withheld ONLY if the student withdraws from all courses.

M.D. DEGREE REQUIREMENTS

Associate Dean for Academic and Student Programs:

Robert Frank, M.D.

Coordinator of Medical Education Programs:

Margaret B. Carter, Ph.D.

The Office of Curricular Affairs' major responsibility is the overall management, administration, and supervision of the undergraduate medical curriculum. In addition, Minority Recruitment and Conjoint Teaching Services are units under the direction of this office.

Academic Program

The undergraduate program in medicine consists of a core curriculum in normal and abnormal human biology followed by clerkships in clinical medicine and a year of selective and elective experiences.

In the first year, through concentrated study of anatomy, histology, embryology, physiology, biochemistry, and genetics, students learn about the normal structure and function of the human body. In addition, there are units of study devoted to the neurosciences, and to an introduction to clinical medicine.

In the second year, through concentrated study of pathology, immunology and microbiology, pharmacology, psychiatry, biostatistics and epidemiology, students learn the basics of the effects of disease processes on structure and function, and the principles of drug action and therapy. This is followed by interdisciplinary organ system units of study devoted primarily to pathophysiology. Clinicians as well as basic scientists serve as lecturers. In addition, training is offered in human values and ethics, physical diagnosis, clinical interviewing, human sexuality, and laboratory medicine.

The third year curriculum consists of clerkships providing in-patient and out-patient clinical education and training in internal medicine, surgery, gynecology/obstetrics, pediatrics, psychiatry, neurology, and family medicine, a month of emergency room medicine, and a month of ambulatory medicine.

The fourth year is devoted to selective and elective study and all students are required to take a subinternship in medicine. Within certain guidelines (for example, five of the eight elective periods must be spent in hospitals with a major Wayne State University affiliation), students can select from over 200 electives in 23 disciplines. In addition to the many programs offered by Wayne University, students can take advantage of approved elective programs offered by other institutions.

Students must pass step one of the USMLE (United States Medical Licensing Examination) in order to be promoted from Year II to Year III and students must take step two of the examination for graduation.

Matriculation and Promotion

Primary evaluation of the students is the responsibility of the faculty of the appropriate departments or courses for Year I-III students, and the Elective Course Coordinators for Year IV students.

Students are evaluated promptly by the primary evaluators, who make recommendations to the Promotions Committee which may include: promotion, reexamination, repetition of all or part of the year, interruption or suspension or probation of a student's program, or dismissal. Questions of suitability for the study and practice of medicine on other than academic grounds are handled according to the University's 'Guidelines for Assisting Persons with Behavioral Problems.'

The Promotions Committee is chaired by the Dean or his/her designee and consists of twelve members: four nominated from the faculty by the President of the Faculty Senate, with the advice and consent of the Executive Committee; four nominated from the Council of Departmental Chairpersons; and four selected by and from the student body. Faculty members serve three-year terms. Student members serve for one year and have full discussion privileges. Their votes are advisory to the Committee.

At appropriate intervals, the Promotions Committee meets to make promotional decisions based upon the student's academic performance. For the course of making these decisions, the Committee has the obligation to assure that the rules of the School and the

rights of the individuals involved have been fairly met. Decisions are transmitted for the Committee by the Associate Dean for Curriculum. Students have the right to appeal such decisions by direct petition to the Promotions Committee. In the event of such an appeal, the Committee may gather evidence and hear witnesses. The student involved has the right to be heard by the Committee and may call a reasonable number of witnesses to testify in his/her behalf. The Promotions Committee is the final decision-making body with regard to the promotion process. The student has the right to request the Office of the Provost to review any determinations made by the Promotions Committee of the School of Medicine relative to academic performance on his/her part.

Leaves of Absence may be granted to students with documented health problems, or to those with appropriate educational opportunities outside the School.

Any students whose enrollment is continued by the Promotions Committee, or, in the case of Leaves of Absence, by the Dean or his/her designee, is considered to be making academic progress toward the M.D. degree.

Scholarship

The grading system throughout all years of the School's curriculum is: 'H' (Honors), 'S' (Satisfactory), 'U' (Unsatisfactory), 'I' (Incomplete). The minimum passing grade is 'S.' In order to be promoted from year to year, students must obtain 'S' on all course work and complete all requirements established by course directors.

Requirements for Graduation

A student regularly registered in the School of Medicine may receive the degree Doctor of Medicine upon the fulfillment of the following requirements:

1. He/she must be at least 21 years of age, must exhibit good moral character, and must be suitable for the practice of medicine.
2. He/she must have satisfactorily completed all the academic requirements established by the School.
3. He/she must have paid all fees in full, and have all holds released.
4. He/she must pass Part I and take Part II of National Board examinations.

Cooperative Electives Exchange Program

The Deans of the four Michigan medical schools, acting as the Michigan Medical Schools Liaison Committee, have signed cooperative agreements allowing students full credit for courses taken as electives at any one of the participating medical schools: Wayne State University, University of Michigan, Michigan State University and Michigan State University College of Osteopathic Medicine. The Deans intend the program to make the best use of one another's resources to the greater advantage of the student and the Michigan community. By allowing medical students full academic credit for elective courses taken at any one of our respective medical schools, our students will be able to share productively in the learning and training opportunities of the entire State.

Under the course exchange program, election of an 'away course' at one of the cooperating schools requires approval of both the parent and host institutions. Enrollment, matriculation and fee payments continue without alteration at the parent institution; however, students are responsible for all travel and living expenses incurred during the 'away' elective. Additional information can be obtained from Mrs. Sandra Driscoll, Recorder, Office of the Registrar, School of Medicine. Under the course exchange program, election of an 'away course' at one of the cooperating schools requires approval of both the parent and host institutions. Enrollment, matriculation and fee payments continue without alteration at the parent institution; however, students are responsible for all travel and living expenses incurred during the 'away' elective. Additional information can be obtained from Mrs. Sandra Driscoll, Recorder, Office of the Registrar, School of Medicine.

CONTINUING MEDICAL EDUCATION

Director: Robert O. Bollinger, Ph.D.

The Division of Continuing Medical Education was established to provide direction and support for the program. The program is concerned with addressing the continuing medical education needs of physicians residing in the tri-county area of metropolitan Detroit, as well as the needs of the other physicians in the state. The Division also works in close cooperation with the State's other schools of medicine and of osteopathy for the provision of educational opportunities for practicing physicians.

Various conferences, symposia and workshops, lasting one to five days, are offered under the academic sponsorship of the departments in the Medical School. Physicians from Michigan and many other states and countries attend meetings which reflect new discoveries and changes in needs and interests in medicine. Every effort is made to assist physicians in their continuing efforts to increase their knowledge and to improve their skills on behalf of the patients they serve.

In addition to these one-day to week-long programs, offerings of one or several hours' duration are also available. Physicians are encouraged to participate in the various departmental workshops, teaching rounds and grand rounds that meet their interests or needs; they are conducted in the clinical settings of the Detroit Medical Center hospitals Children's, Detroit Receiving, Harper, Grace, Huron Valley, Hutzel, Sinai, and the Rehabilitation Institute.

There are increasing pressures on practicing physicians to maintain and update their professional knowledge and skills. Wayne State University School of Medicine is striving to respond to these needs through continuing medical education. Inquiries may be directed to the Division for information about programs on specific subjects or programs for specific medical specialties.

Accreditation

Wayne State University School of Medicine is accredited by the Accreditation Council of Continuing Medical Education (ACCME) to sponsor continuing medical education (CME) for physicians. As an accredited sponsor of CME, the School designates certain of its continuing medical education offerings as meeting the criteria for Category 1 of the Physician's Recognition Award of the American Medical Association, and for the requirements for license renewal by the Michigan Medical Practice Board. Other certifications from various medical specialty societies and boards are secured for individual offerings as may be required.

Wayne State University Detroit Medical Center Graduate Medical Education Program

Coordinator: Mary F. Euth

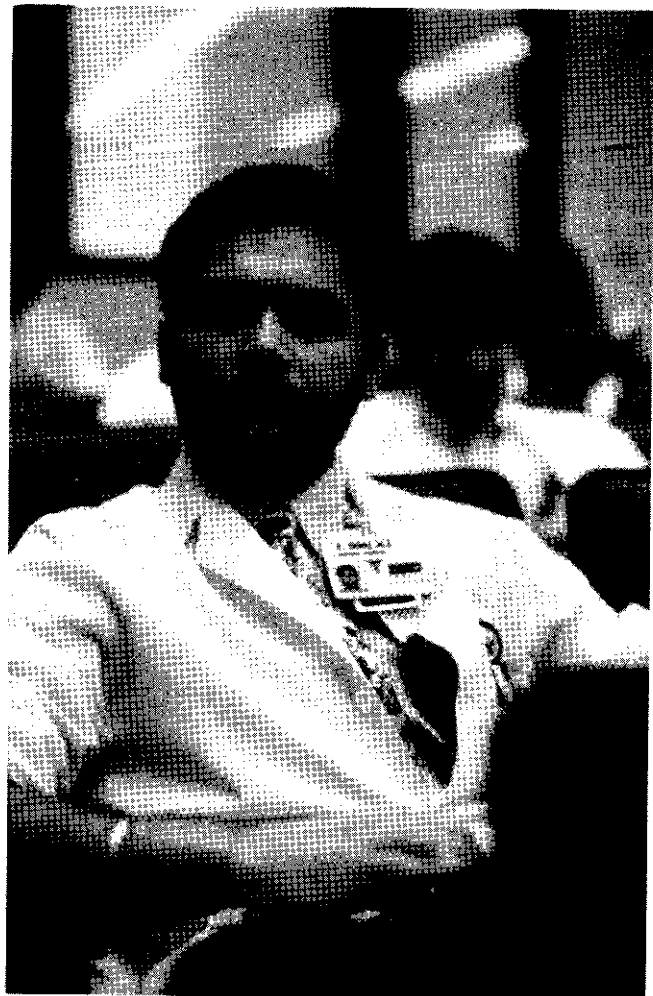
Wayne State University and five Detroit Medical Center hospitals (Children's Hospital of Michigan, Detroit Receiving Hospital and University Health Center, Harper-Grace Hospitals, Hutzel Hospital, and the Rehabilitation Institute), together with the Veterans' Administration Medical Center at Allen Park, sponsor a joint venture in Graduate Medical Education for physicians who are extending their training beyond the M.D. or D.O. degree. In addition, psychiatric training sites include Lafayette Clinic, Detroit Psychiatric Institute, Hawthorn Center, Northville Regional Hospital, and the Veterans Administration Medical Center. This program, the Wayne State University/Detroit Medical Center Graduate Medical Education Program, utilizes the impressive clinical resources of the hospitals and clinics of the sponsors in the training of 700 physicians in twenty-six specialty areas of medicine.

Openings for approximately 138 first year post-M.D. physicians are offered in the following specialties: emergency medicine, combined

emergency medicine/internal medicine, combined emergency medicine/pediatrics, family practice, general surgery, gynecology/obstetrics, combined pediatrics/internal medicine, internal medicine, internal medicine primary care track, neurology, orthopedic surgery, pathology, pediatrics, radiology, urology, and transitional first year. Full residencies are offered in the following areas: dermatology, emergency medicine, combined emergency medicine/internal medicine, combined emergency medicine/pediatrics, family practice, general surgery, gynecology/obstetrics, combined pediatrics/internal medicine, hand surgery, internal medicine, internal medicine primary care track, neurology, neurosurgery, ophthalmology, oral surgery, orthopedic surgery, otolaryngology, pathology, pediatrics, physical medicine, plastic surgery, psychiatry, radiation oncology, radiology (diagnostic), thoracic surgery, and urology.

All participants in the program are involved in a system of graduate teaching responsibilities within the realm of clinical diagnosis and patient care, including contribution to the teaching of medical students who rotate through the clinical department. Orientation programs, teaching conferences and seminars, bedside teaching, and a wide variety of supervised surgical and technical training are a systematic part of the graduate medical education of the physicians in the various specialty programs.

Enrollees in the program must be eligible to register as students in Wayne State University and must have an M.D. degree or equivalent, temporary or permanent licensure to practice medicine in Michigan, and approval of the appropriate program director. Appointments on an annual basis to appropriate levels within the Graduate Medical Education Program establish the basis for a stipend which is paid to the physician as a means of personal support while enrolled in training.



GRADUATE PROGRAMS

Academic Regulations Governing Master's and Doctoral Degrees

Associate Dean for Research and Graduate Programs:
George E. Dambach, Ph.D.

Advanced study programs leading to the Doctor of Philosophy and Master of Science degrees are available in the School of Medicine. The primary purpose is to provide an opportunity for graduate training in preparation for careers in research in the medical and health-related sciences.

The graduate student enters a community of scholars and is expected to become acquainted with the development of a main area of study and its relationship to other pursuits. Students are expected to become independent and self-directed, to acquire useful perspectives on the meaning and limitations of exact science, and to maintain a balance between practicality and abstract intellectual activity. They are expected to draw from and add to the wealth of accumulated knowledge in their chosen discipline. Graduate students work closely with faculty advisers who help plan course schedules and research programs and supervise laboratory training.

Admission

Admission to these graduate programs is contingent upon admission to the Graduate School; for requirements, see page 16. Requests for program information and application materials should be made directly to the program of interest. Mailing address and individuals to contact are cited below.

Application: Applicants must submit: (i) University Graduate School application form; (ii) official transcripts of all undergraduate (and applicable graduate) academic work; (iii) Graduate Record Examination scores, verbal, quantitative and analytical components.

Most study programs are planned for students who begin in the fall semester; however, matriculation may be possible at other times during the year in individual cases.

Students for whom English is not their native language will be required to submit TOEFL examination scores and to demonstrate competency, both verbal and written, in English within the first year of study.

The recommended procedure for application is:

1. Contact the Graduate Officer of the department for information and forms;
2. Submit ALL application materials by March 1 for admission to begin study in the fall semester;
3. Earlier applications will be accepted in most cases. Late applications will be evaluated; however, the graduate programs have limited enrollment, and thus late applicants may encounter programs already filled. Most financial aid competition is promulgated in the months of February and March; late applicants may have very limited opportunities for financial assistance.

Graduate Officers: The following Graduate Officers may be contacted through the School of Medicine, Wayne State University, 540 E. Canfield Avenue, Detroit, Michigan 48201 (telephone: 313-577-1455; Fax: 313-577-1348), or at our Web site: <http://www.med.wayne.edu/gradprog/>:

Anatomy and Cell Biology Ph.D., M.S. Roberta Pourcho, Ph.D.
Basic Medical Sciences M.S. Lowell McCoy, Ph.D.
Biochem. & Molecular Biol. Ph.D., M.S. Domenico Gatti, Ph.D.
Cancer Biology Ph.D., M.S. Sam Brooks, Ph.D.
Cellular and Clinical Neurobiology Ph.D. . . . Rodrigo Andrade, Ph.D.
Community Health Services M.S. Antonia Abbey, Ph.D.
Genetic Counseling M.S. Anne E. Greb, M.S.
Immunology/Microbiology Ph.D., M.S. Vera Righthand, Ph.D.
Medical Physics Ph.D. Colin Orton, Ph.D.
Medical Research M.S. (for M.D.s only) Lowell McCoy, Ph.D.

Molecular Biology and Genetics Ph.D., M.S. . . . Mary Murray, Ph.D.
Pathology Ph.D. Kenneth Palmer, Ph.D.
Pharmacology Ph.D., M.S. Roy McCauley, Ph.D.
Physiology Ph.D., M.S. Lowell McCoy, Ph.D.
Psychiatry & Behavioral Neurosciences M.S. . . . Richard Balon, Ph.D.
Radiological Physics M.S. Colin Orton, Ph.D.
Rehabilitation Sciences M.S. Marilyn Wayland, M.D.

Graduate Fees

Students in the graduate programs offered by the School of Medicine pay the regular graduate fees of the University; see page 18.

Master of Science

Descriptions of individual programs may be found in the departmental sections which follow. Two interdisciplinary programs are offered in addition to the discipline-based courses of study: a master's degree program in basic medical sciences and a master's degree program in medical research. These are described under Interdisciplinary Degree Programs, beginning on page 284. General requirements for the Master of Science degree may be found on page 27, or at our Web site: <http://www.med.wayne.edu/gradprog/>.

Doctor of Philosophy

Programs leading to the Doctor of Philosophy degree in the basic medical sciences are under the jurisdiction of the Graduate School of the University. Majors within the School of Medicine are available in the following academic areas: anatomy and cell biology, biochemistry and molecular biology, cancer biology, cellular and clinical neurobiology, immunology and microbiology, medical physics, molecular biology and genetics, pathology, pharmacology, and physiology. Brief program descriptions are provided under each department heading in the following pages, as are listings of graduate courses offered by the School of Medicine. The program in medical physics is described in the Radiation Oncology Departmental section of this bulletin. Programs in cancer biology, cellular and clinical neurobiology, and molecular biology and genetics are described below under Interdisciplinary Degree Programs, beginning on page 284. General requirements for the Doctor of Philosophy degree may be found beginning on page 27, or at our Web site: <http://www.med.wayne.edu/gradprog/>

Combined Doctor of Medicine Doctor of Philosophy Degrees

A combined M.D. and Ph.D. program of study may be designed to provide an opportunity for exceptionally talented students to acquire knowledge and expertise in both research and clinical medicine. By combining and interrelating the Doctor of Medicine and Doctor of Philosophy programs, the dual degree objectives may be accomplished effectively and often in a shorter time than is possible by two separate degree programs completed in sequence. Such a program will prepare the student to assume investigative leadership in medical schools and in institutes for medical research. Our program is flexible so that it can be adapted to best suit the student's discipline, needs and objectives.

Admission: A student who has an excellent academic record may be considered for the combined degree program when he/she has been admitted by separate and independent processes to the M.D. program and one of the Ph.D. programs in the School of Medicine. Students must pursue admission to the two programs separately. There is NO combined admission process. Applications are usually not made at the same time; students often apply to the Ph.D. program after admission to the M.D. program for example, during the first or second year of their M.D. study. Students interested in a combined degree program may contact the Graduate Programs Office in the School for further information and counseling.

Degree Requirements: The requirements for the combined M.D.-Ph.D. degrees conform with those established for the separate degrees by the School of Medicine, the Graduate School, and the individual departments involved.

Financial Support for Graduate Study

Graduate assistantships, fellowships and tuition scholarships are available for qualified students admitted to the various graduate programs. All forms of support are limited in number and are awarded on a competitive basis. The School endeavors to generate support for all qualified full-time doctoral students.

Interdisciplinary Degree Programs

The School of Medicine currently offers interdisciplinary graduate degree programs in:

basic medical sciences	.....M.S.
cancer biology	.....M.S., Ph.D.
cellular and clinical neurobiology	....Ph.D.
genetic counseling	.....M.S.
medical physics	.....Ph.D.
medical research	.....M.S.

These programs are staffed by graduate faculty of several departments and may draw on course offerings from multiple subject areas. Listed below are descriptions of each of these degree programs as well as the courses specifically associated with them.

Master of Science in Basic Medical Sciences

Office: 1261 Scott Hall

Program Director: Lowell E. McCoy

This program provides broadly-based interdisciplinary didactic, non-research master's level training in human biology for individuals who have a bachelor's, master's or professional medical, dental, pharmaceutical, or legal background degrees. It is designed for individuals who wish to expand or change their educational background and training to fulfill personal, pre-professional, or other career advancement goals. Individuals employed in the areas of biomedical research and general science education, or those seeking to enhance their academic preparation for entry into human or veterinary medical, dental, or pharmacologic professional degree programs, may find this curriculum particularly helpful.

The scope of this program includes basic medical science courses from at least four different disciplines as well as advanced medical science electives. Completion of the degree requires a literature review project and essay presenting and evaluating a current problem in biomedical science.

Letters of inquiry and requests for application materials should be sent to the Program Director.

Admission to this program is contingent upon admission to the Graduate School, for requirements, see page 16. Applicants must have a bachelor's degree or equivalent with 3.0 grade point average (on a 4.0 system). An undergraduate major in one of the biologic or chemical sciences is preferred; however, students with other backgrounds will be considered for admission based on their experience and competence relevant to specific areas of the program. Applicants are required to submit results of the Graduate Record Examination or the Medical College Aptitude Test and three letters of reference with their application.

DEGREE REQUIREMENTS: The Master of Science in Basic Medical Sciences is offered only as a *Plan B* master's program requiring completion of thirty-four credits including a three-credit essay. All course work must be completed in accordance with the regulations of the Graduate School and the School of Medicine governing graduate scholarships and degrees; see pages 16-30 and 283, respectively. Specific requirements include:

Required Core (A minimum of four courses, each reflecting a different subject area, must be chosen from the following)

ANA 7030 — Human Microscopic Anatomy	..... 4
BCH 7010 — General Biochemistry Lecture	..... 4
C B 7110 — Cancer Biology Survey I	..... 2
C B 7120 — Cancer Biology Survey II	..... 2
I M 7010 — Fundamentals of Immunology	..... 4

I M 7020 — Fundamentals of Microbiology	..... 3
I M 7030 — Fundamentals of Virology	..... 3
MBG 7010 — Molecular Biology and Genetics	..... 3
PHC 7010 — Pharmacology Lecture	..... 4
PSL 7010 — Basic Graduate Physiology Lecture I	..... 4
PSL 7030 — Basic Graduate Physiology Lecture II	..... 4
PTH 7000 — General Pathology	..... 5

Elective Courses

Elective credits sufficient to complete the degree requirements must be approved by written consent of the Program Director.

Essay Requirement

BMS 7999 - Essays in Basic Medical Science 3

The *Plan of Work* will be developed and filed in association with the Program Director or his/her designee. This should be completed by the end of the second semester in the Program.

The *Essay Adviser and Committee* is to be selected with the advice and consent of the Program Director and faculty. The committee is to be composed of three members of the graduate faculty including the essay adviser who is to serve as the student's academic adviser for the remainder of his/her program.

The *Essay Topic Selection and Outline* is to be filed with the Program Director.

The *Essay Presentation and Defense* is to be given orally to the Essay Committee as the final requirement for the degree. The Essay Committee will evaluate the essay, its presentation and defense, and determine the final grade for BMS 799.

Graduate Courses (BMS)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

6010 Responsible Conduct in Biomedical Research. Cr. 1
Offered for S and U grades only. Required of all School of Medicine students/post residency trainees. Nature, motivation and ethics in biomedical science situations liable to fraud, misconduct, conflicts of interest, and plagiarism in research, in peer and editorial review, and in authorship. Methods of safe laboratory practice and ethical human and animal use as research subjects in science. (S)

7880 Special Topics/Projects. Cr. 1-4
Prereq: consent of BMS program director. Up to four credits in research, laboratory, discussion, or field work, in any combination; for students in Basic Medical Sciences or Medical Research program. (T)

7999 Essays in Basic Medical Science. Cr. 3
Prereq: approved Plan of Work and consent of adviser. Open only to students enrolled in Basic Medical Science M.S. program. Methodologies in library research and critical evaluation of current biomedical

literature. Written summary and report on a specific topic in current biomedical literature. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: approved thesis topic and outline; consent of adviser. Open only to students enrolled in Master of Science in Medical Research Program. (T)

**Master of Science and
Doctor of Philosophy
with a Major in Cancer Biology**

Office: 211 Lande Building; 577-1065
Program Director: Sam C. Brooks

Adjunct Professors

Samuel C. Brooks, Dharam Chopra, Thomas H. Corbett, John Ensley, David R. Evans, Gloria Heppner, Kenneth Honn, David Kessel, Omer Kucuk, Markku Kurkinen, Jack Lilien, Fred Miller, James Rigby, Louis Romano, Raymond Novak, Avraham Raz, Bonnie F. Sloane, Frederick A. Valeriotte

Adjunct Associate Professors

Ayad Al-Katib, Ben D.-M. Chen, James Eliason, Jeffrey Evelhoch, Rafael Fridman, Craig Giroux, Phyllis Gimotty, Miriam Greenberg, Lance K. Heilbrun, Ronald N. Hines, Stephen P. Lerman, Patricia LoRusso, Larry Matherly, Ralph Parchment, Robert Pauley, John Reiners, Fazlul Sarkar, Anthony Shields, Wei-Zen Wei, Fayth Yoshimura

Adjunct Assistant Professors

Mousumi Banerjee, Zora Djuric, H.-R.C. Kim, Thomas Kocarek, Ramzi Mohamed, James M. Onoda, Stuart Ratner, Kaladhar Reddy, Melissa Runge-Morris, J. Christopher States

A major scientific challenge at the present time is the determination of the underlying biological basis for cancer. The related major clinical challenge is to apply basic research results to the treatment of cancer in humans. Both the experimental and clinical study of cancer require a scope and approach to the problem which transcends traditional departmental structures and requires knowledge in several disciplines including biochemistry, molecular biology, pharmacology, cellular biology, chemistry, pathology, physiology, therapeutics, anatomy, biophysics, and immunology. Investigators in cancer biology are in the forefront of basic developments in molecular and cellular biology such as cell regulation (growth factors, oncogenes), host immunological modulations, virology and biologic project-based industries (monoclonal antibodies, genetic engineering).

The Cancer Biology Program offers programs of study leading to the master of science and doctor of philosophy degrees. The doctoral degree is standard in the Program; master's study is recommended only for special circumstances. The graduate program outlined below emphasizes basic investigation at the molecular, cellular and tissue levels, and its focus can be varied to suit individual student needs. It leads to the Doctor of Philosophy degree; a joint Ph.D.-M.D. program is also available. Research training is also offered to holders of first professional degrees (e.g., M.D., D.D.S., D.V.M.).

Admission to this program is contingent upon admission to the Graduate School (see page 16) and the graduate programs in the School of Medicine (see page 283). Applicants to the Graduate Program in Cancer Biology should have a background in one of the chemical or biological sciences. Students with other backgrounds will be considered for admission based on their competence related to specific areas of interest in the program. A minimum honor point average of 3.0 is required for admission. Applicants should provide scores from the Graduate Record Examination; personal interviews may be requested. International students must be proficient in English as determined by satisfactory performance on the TOEFL English proficiency examination. Address letters of inquiry to the Program Director.

DEGREE REQUIREMENTS: An applicant for the Doctor of Philosophy degree must complete ninety credits, including at least thirty credits in dissertation research; and all other program and Graduate School requirements. All course work must be completed in accordance with the regulations of the Graduate School and the School of Medicine governing graduate scholarships and degrees; see pages 16-30 and 283, respectively. Specific requirements include:

Required Core Courses and Research (forty-two credits)

BCH 7010	General Biochemistry Lecture
BCH 7340	Molecular and Cellular Biochemistry II
BIO 7500	Prokaryotic Gene Structure and Function
C B 7110 (PHC 7110)	Cancer Biology Survey I
C B 7120 (PHC 7120)	Cancer Biology Survey II
C B 7130	Clinical Aspects of Cancer Biology
C B 7700	Recent Developments in Cancer Biology (Journal Club)
C B 7890	Seminar in Cancer Biology
C B 7710	Individual Studies in Cancer Biology (rotation)
C B 7996	Research (15 credits)
IM 7010	Fundamentals of Immunology

Elective Courses (18 credit maximum)

The *Plan of Work* will be developed in conjunction with the Graduate Officer. Eight to ten credits should be in a minor; and the remaining credits must be distributed among the major courses, required cognate courses and electives.

*Qualifying Examination (written and oral)
and Doctoral Dissertation*

Students are expected to demonstrate their understanding of general biochemistry, immunology, molecular biology and genetics, pharmacology, and cancer biology as well as their areas of specialization in order to pass the general examination for candidacy for the Ph.D. degree. Other courses are arranged to meet the specific needs of each student; these may include courses in molecular genetics, advanced topics in biochemistry, organic chemistry, immunology, molecular biology and genetics, or pharmacology, as well as advanced courses in cancer biology. Research may be done in areas such as breast cancer, immunology, tumor biology, experimental therapeutics, carcinogenesis, molecular biology, cellular biology and genetics.

Assistantships and Research

This program has graduate assistantships for a number of qualified students. All students accepted into the graduate degree program are considered for financial assistance and no application forms are necessary for this purpose. Students receiving assistantships are advised to take no more than ten credits per semester. All students, whether or not they hold a fellowship or assistantship, are required to assist the graduate faculty in teaching and research activities as a component of their educational experience. For complete information, students should consult or write Sam C. Brooks, Ph.D., Program Director, Wayne State University Graduate Program in Cancer Biology, 550 E. Canfield, Room 211, Detroit, Michigan 48202.

Graduate Courses (C B)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin.

tin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

7110 (PHC 7110) Cancer Biology Survey I. Cr. 2
Basic process relating to the initiation of growth and spread of tumors. Introduction to theory and practice of treatments. Epidemiology, prevention, and studies of cellular changes at the molecular level which lead to cancer. (B)

7120 (PHC 7120) Cancer Biology Survey II. Cr. 2
Prereq: C B 7110 or consent of instructor. Continuation of C B 7110. (Y)

7130 Clinical Aspects of Cancer Biology. Cr. 2
Prereq: C B 7110, 7120. Open only to cancer biology students. Students accompany clinicians during rounds in hospital and outpatient clinics. (S)

7220 (PHC 7220) Cell and Molecular Biology of Cancer Development. (MBG 7120) Cr. 3
Prereq: one course each in graduate level biochemistry and molecular biology. Detailed analysis of neoplastic cells at cellular and molecular levels. Emphasis on critical genes in cancer development, nature of changes in these genes and how genetic changes result in altered cellular phenotypes that are involved in malignancy. (B)

7230 Breast Cancer. Cr. 2
Prereq: graduate level biochemistry and molecular biology. Development of breast cancer, characteristics of the disease, and its treatment. (B)

7240 (PHC 7240) Principles of Cancer Therapy. Cr. 2
Prereq: BMB 7010 or CHM 7620, or equiv. Concepts relating tumor biology and the biochemistry and pharmacology of anticancer agents presented and discussed in the context of specific animal and human tumors. (Y)

7250 (C B 7250) Cancer Control. (PHC 7250) Cr. 2
Introductory lecture on nature of cancer control activities and the issues they raise, including class discussions; lectures by researchers in chemo- and dietary prevention, screening, symptom control, care and support, and rehabilitation; summary overview. (B)

7400 (MBG 7400) Molecular Biology of Cellular Signalling. Cr. 2
Molecular basis of cell-cell interactions, hormonal interactions, and interactions between different cellular compartments. (B)

7600 Applied Cancer Biostatistics I. Cr. 2
Prereq: Coursework in biostatistics or consent of instructor and experience with IBM compatible computers. Basic statistical concepts and methods used in basic science cancer research literature. (B)

7700 Recent Developments in Cancer Biology. Cr. 1-4
Student presentation and discussion of recent developments in cancer biology. (F,W)

7710 Individual Studies in Cancer Biology. Cr. 1-5
Prereq: enrollment in graduate program in cancer biology or consent of adviser and graduate officer. Students pursue areas of interest with selected faculty members in the program. (T)

7890 Seminar in Cancer Biology. Cr. 1 (Max. 6)
Offered for S and U grades only. Students give presentations on selected topic areas or specific papers to other students and faculty in the program. (T)

7990 Advanced Topics in Cancer Biology. Cr. 1-3 (Max. 12)
Prereq: consent of instructor. Lectures, seminars, discussions. (B)

7996 Research. Cr. 1-15
Prereq: enrollment in graduate program in cancer biology or consent of adviser and graduate officer. Directed study and pre-dissertation research with faculty in the program. (T)

7999 Master's Essay. Cr. 1-4 (Max. 4)
Prereq: enrollment in graduate program in cancer biology or consent of adviser and graduate officer. Research in literature and writing of essay on topic area in cancer biology. (T)

8680 Molecular Mechanisms of DNA Repair. Cr. 2
Lecture topics include: DNA damage, DNA repair in prokaryotes and eukaryotes, genetics of DNA repair, human heredity DNA repair deficiency diseases and mutagenesis.

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)
Prereq: enrollment in graduate program in cancer biology or consent of adviser and graduate officer. (T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16 (30 req.)
Prereq: enrollment in graduate program in cancer biology or consent of adviser and graduate officer. (T)

Doctor of Philosophy with a Major in Cellular and Clinical Neurobiology

Office: 9B-21 University Health Center
Chairperson, Department of Psychiatry and
Behavioral Neurosciences: Thomas Uhde

The goal of the Ph.D. program in cellular and clinical neurobiology is to graduate scientists who possess a strong background in cellular and molecular neurobiology and a substantial knowledge of neuropsychiatric diseases. This distinctive orientation fosters the development of outstanding research scientists who will devote their careers to linking advances in basic neuroscience to clinical problems. This program creates a unique environment in which the trainee is exposed to an integrated syllabus of basic science, preclinical research, and clinical neurobiology. In general, concepts of central nervous system biochemistry, molecular biology and electrophysiology are presented not only as they interrelate as basic disciplines, but also as they relate to clinical neuroscience.

Admission: Acceptance in this program is contingent upon admission to the Graduate School and the graduate programs of the School of Medicine; for requirements, see pages 16 and 283, respectively. Applicants must have an undergraduate degree including several courses in biological sciences and additional course work in other scientific disciplines. Three letters of recommendation are required from individuals able to judge the student's scientific potential. A minimum honor point average of 3.0 and an interview with a Graduate Officer or designated representative are also required, as is the Graduate Record Examination. Foreign students must be proficient in English as determined by satisfactory performance on the standardized TOEFL English proficiency examination.

DEGREE REQUIREMENTS: An applicant for the Doctor of Philosophy degree must complete ninety credits, including at least thirty credits in dissertation research; and all other program and Graduate School requirements. All course work must be completed in accordance with the regulations of the Graduate School and the School of Medicine governing graduate scholarships and degrees; see pages 16-30 and 283, respectively. Specific requirements include:

Required Core Courses (alternates to PSL 7020 and 7030 may be chosen with approval of the Graduate Committee)

BCH 7010 — General Biochemistry Lecture	4
PHC 7010 — Pharmacology Lecture	4
PSL 7010 — Basic Graduate Physiology Lecture I	4
PYC 7010 — Neurobiology I	3
PYC 7020 — Neurobiology II	3
PYC 7510-7580 — At least three courses chosen from this group	9

Research Seminars (elected for each term of the program)

PYC 7890 — Research Seminar	1
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Research Problems (minimum of nine credits)

PYC 7996 — Research Problems	1-10
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Minor Fields (eight credits in an approved minor field)

Research Project

Before the end of the second year, the student prepares the Early Research Project, a written report based on laboratory experience. After formal oral presentation, the research and the document are defended before the Early Research Committee. Attention is then directed to completion of the Qualifying Examination. This examination consists of a written proposal, in the format of a grant application submitted to the Examination Committee, and the oral defense of this proposal.

Graduate Courses (PYC)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509

7010 Neurobiology I. Cr. 3

First part of a two-semester in-depth study of nerve cells, their organization into functional circuits and their mediation of normal and aberrant behaviors. (F)

7020 Neurobiology II. Cr. 3

Second part of a two-semester in-depth study of nerve cells, their organization into functional circuits and their mediation of normal and aberrant behaviors. (W)

7510 Neurochemistry of Monoamine Containing Neurons. Cr. 3

Prereq: PYC 7010 and 7020 recommended, or consent of instructor. Review of the functional neurobiology of catecholamine and indoleamine containing neurons in mammalian CNS. Emphasis on relationship among biochemical, physiological, and anatomical characteristics of these neurons. Putative role of these neurons in neurological and psychiatric disorders. (B)

7520 Molecular Biological Approaches in Neurobiology. Cr. 3

Prereq: PYC 7010 and 7020 recommended, or consent of instructor. In-depth analysis of molecular biological approaches used to probe nervous system function. Emphasis on recent methodological developments applied to brain analyses, including cell-specific monoclonal antibodies and cloning techniques. (B)

7540 Current Topics in Neurophysiology. Cr. 3

Prereq: PYC 7010, 7020, or consent of instructor. Comprehensive overview of neurophysiology with emphasis on contemporary techniques of neuronal recording, ionic mechanisms of membrane conductance and neurotransmitter modulation of neuronal activity. (B)

7550 Signal Transduction in Neuronal Tissues. Cr. 3

Prereq: PYC 7010 and 7020, or consent of instructor. Modern concepts of the biochemical and molecular biological bases of neuronal communication. (B)

7560 Advanced Topics in Behavioral Pharmacology. Cr. 3

Prereq: PYC 7010 and 7020 recommended, or consent of instructor. Overview of behavioral studies of learning and memory, drug effects on behavior, and animal models of neuropsychiatric diseases. (B)

7570 Clinical Psychiatry: Current Issues in Clinical Neuroscience Research. Cr. 3

Prereq: M.D. degree, admission to Master of Science in psychiatry program. Clinical research in psychiatry and behavioral neurosciences; experimental design. Lectures, seminars, discussion with faculty. (Y)

7580 Substance Abuse. Cr. 3

Pharmacological principles, research methods, and scientific data regarding understanding and control of substance abuse. Epidemiology, etiologic factors, research methods and ethics, health consequences, prevention strategies, psychiatric diagnosis and comorbidity, treatment, policy issues and controversies. (Y)

7890 Research Seminar. Cr. 1 (Max. 8)

Presentations by clinical and basic research staff and by the program's graduate students. (T)

7990 Directed Study. Cr. 1-6 (Max. 10)

Independent study under the guidance of an advisor, including complete review of a problem area immediately relevant to cellular or clinical neurobiology. (T)

7996 Research Problems. Cr. 1-10 (Max. 20)

Directed laboratory rotation for graduate students in the Cellular and Clinical Neurobiology program. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (Max. 8)

Preparation in writing of a scholarly proposal and thesis. (T)

9999 Doctoral Dissertation Research. Cr. 1-16 (Max. 30)

Prereq: doctoral candidacy in CCN. (T)

Master of Science in Medical Research

Office: 1261 Scott Hall

Program Director: Lowell E. McCoy

This program provides broadly-based interdisciplinary didactic, non-research master's level training in medical research for individuals who have professional medical, dental, or pharmaceutical background degrees. It is designed for individuals who wish to expand their basic science research training in preparation for entry into a Ph.D. program; as a mechanism for changing one's research emphasis (e.g., sabbatical training); or as a prerequisite to entry into academic medical, veterinary medical, dental, or pharmacologic careers.

The scope of this program includes basic medical science courses as well as research. Completion of the degree requires an independent research project and thesis.

Letters of inquiry and requests for application materials should be sent to the Program Director.

Admission to this program is contingent upon admission to the Graduate School, for requirements, see page 16. Applicants must have an M.D. or equivalent professional degree in human health care. The program is open only to individuals actively participating in post-graduate professional training in Wayne State University affiliated programs.

DEGREE REQUIREMENTS: The Master of Science in Medical Research is offered only as a *Plan A* master's program requiring completion of thirty credits, including eight credits in thesis. All course work must be completed in accordance with the regulations of the Graduate School and the School of Medicine governing graduate scholarships and degrees; see pages 16-30 and 283, respectively. Specific requirements include:

Elective Courses

Elective credits sufficient to complete the degree requirements must be approved by written consent of the Program Director.

Thesis Requirement

BMS 8999 — Master's Thesis Research and Direction 8

Plan of Work will be developed and filed in association with the Program Director or his/her designee. This should be completed a minimum of one semester before the final term in the Program.

Research Adviser and Committee is to be selected with the advice and consent of the Program Director and faculty. The committee is to be composed of three members of the graduate faculty including the thesis adviser who is to serve as the student's academic adviser for the remainder of his/her program.

Research Project Selection and Outline is to be filed with the Program Director.

Thesis Presentation and Defense is to be given orally to the Research Committee as the final requirement for the degree. The Committee will evaluate the thesis, its presentation and defense, and determine the final grade for BMS 8999 (see page 284).

Master of Science and Doctor of Philosophy in Molecular Biology and Genetics

Office: 3216 Scott Hall; 577-5323

Director: George Grunberger

Professors

Mark Evans, Morris Goodman, Lawrence I. Grossman, George Grunberger, Mark Hughes, Markku Kurkinen, Wayne D. Lancaster, Orlando J. Miller (Emeritus), Richard E. Miller

Associate Professors

Leon Carlock, Mark P. Johnson, John Kamholz, Minoru S.H. Ko, Stephen A. Krawetz, S. Helena Kuivaniemi, Jeffrey Moshier, Michael E. Shy

Adjunct Associate Professors

Gerald L. Feldman, Leonard Lutter

Assistant Professors

Russell L. Finley, Jr., James Y. Garbern, Craig N. Giroux, A. Scott Goustin, Anne E. Greb, Mary T. Murray, Robert A. Thomas, John E. Tomkiel, Gerardus C. Tromp

Associates

Gyula Acsadi (Pediatrics), Joseph D. Artiss (Pathology), Erawati V. Bawle (Pediatrics), Michael L. Cher (Urology and Pathology), Donald DeGracia (Emergency Medicine), Felix R. Fernandez-Madrid (Internal Medicine), Ahmad R. Heydari (Nutrition and Food Science), Gregory P. Kalemkarian (Internal Medicine), Gary S. Krause (Emergency Medicine), Donald M. Kuhn (Psychiatry), Li Li (Cardiology), Jack Lilien (Biological Sciences), Kenneth Maise (Neurology), Adhip N. Majumdar (Gastroenterology and Biochemistry), James D. Marsh (Cardiology), Adnan Munkarah (Obstetrics and Gynecology), Robert W. Neumar (Emergency Medicine), Brian J. O'Neil (Emergency Medicine), Heimo Riedel (Biological Sciences), Rick J. Schiebinger (Endocrinology), Assia Shisheva (Physiology), Bonnie F. Sloane (Pharmacology), Pothur R. Srinivas (Internal Medicine), Christopher J. States (Chemical Toxicology Inst.) Jeffrey E. Virgin (Pathology), Wei Zen Wei (Karmanos Cancer Inst.) Blaine C. White (Emergency Medicine)

Adjunct Instructors

Janice V. Bach, Teresa Brady, Joan V. Conard, Paula M. Czarnecki, Debora A. Duquette, Stephanie Kasperski, Eric Krivchenia, Jenifer Lampinen, Peggy W. Rush, Kate Sargent

Graduate programs in molecular biology and genetics are offered in cooperation with the Center for Molecular Medicine and Genetics (CMMG). These are interdisciplinary programs with degrees granted by the Graduate School of the University. The graduate education and training program of the Center for Molecular Medicine and Genetics is unique in its focus, scope and content. The mission of the program is to provide students with: 1) a foundational understanding of molecular biology and genetics, 2) proficiency in molecular and genetic approaches to significant questions in medicine and biology, and 3) training opportunities in molecular and human genetics. The objective of the Center's education program is to prepare students for academic research careers in biology and medicine through earning the Doctoral Degree in Molecular Biology and Genetics, the Master's Degree in Genetic Counseling, or a medical board certified Fellowship Training Program in Medical Genetics.

Graduate Programs

The Molecular Biology and Genetics Program offers programs leading to the Master of Science and Doctor of Philosophy degrees. The doctoral degree is standard in the Program; master's study is recommended only for special circumstances. A joint M.D. - Ph.D. program is also available. Inquiries about these programs should be directed to the Graduate Officer, Molecular Biology and Genetics Program.

Admission to this program is contingent upon admission to the Graduate School (see page 16) and the Graduate Programs of the School of Medicine (see page 283). Applicants to this graduate program should normally have a minimum honor point average of 3.0 and a strong background in one of the chemical or biological sciences. Applicants should provide Graduate Record Examination scores, preferably with an advanced test in either chemistry or biology. International students must be proficient in English and should demonstrate a satisfactory performance on the TOEFL English proficiency examination. Applicants should have three letters of recommendation sent directly to the Graduate Officer, Molecular Biology and Genetics Program. A personal statement is required, and an interview should be arranged with the Graduate Officer, if possible.

Scholarship: All course work must be completed in accordance with the regulations of the Graduate School and the School of Medicine governing graduate scholarship and degrees; for requirements, see pages 16-30 and 283, respectively.

DEGREE REQUIREMENTS: Requirements for students enrolled in graduate degree programs are described in this bulletin on pages 20-30. Required program courses include MBG 7010, 7020, 7030, and 7600. Students will generally select a variety of other courses in the program, should have a basic understanding of biochemistry, and are expected to become computer-literate. Additional courses will be arranged to meet the individual needs of the student. The program will enable the student to demonstrate a basic understanding of molecular biology and genetics, in order to pass a general examination for candidacy for the Ph.D. degree.

ASSISTANTSHIPS and RESEARCH: The program has graduate assistantships and graduate research positions available for a number of qualified students. All students accepted into the graduate degree program are considered for financial assistance, and no application forms are necessary for this purpose. Students on assistantships are advised to elect no more than twelve credits in a given semester. All students, whether or not they hold a fellowship or assistantship, are required to assist the graduate faculty in teaching and research activities as a component of their educational experience. For more complete information on financial assistance, students should consult or write the Graduate Officer, Center for Molecular Medicine and Genetics, Molecular Biology and Genetics Program, Wayne State University School of Medicine, 540 East Canfield, Detroit, Michigan 48201.

Master of Science in Genetic Counseling

Office: 3216 Scott Hall

Program Director: Anne E. Greb, M.S.

Genetic counselors are medical professionals who provide information and supportive counseling for individuals at risk of deleterious circumstances attributable to a genetic condition and for families at risk of having a child with birth defects resulting from a genetic condition. The practice of genetic counseling combines the knowledge of genetic diseases and mechanisms with an appreciation for unique psychological burdens and complex ethical and social issues while committed to patient autonomy, privacy and informed consent. Genetic counselors usually work as part of a health care team. They are also involved in research, teaching, screening programs, disease-specific support groups and administrative duties.

The graduate program in genetic counseling is designed to prepare students with the appropriate knowledge base and practical experience to function as responsible genetic counselors in a variety of work settings. The curriculum consists of course work in fundamental genetic principles, interviewing and counseling techniques, as well as supervised clinical experiences in a variety of genetic and subspecialty clinics. Students will be prepared to take the certification examination offered by the American Board of Genetic Counseling.

Additional information and requests for application materials can be obtained by contacting the Program Director, Genetic Counseling, 3216 Scott Hall, Wayne State University School of Medicine; telephone: 577-3216.

Admission to this program is contingent upon admission to the Graduate School and the Graduate Programs of the School of Medicine, see pages 16 and 283, respectively. Applicants must have a bachelors degree with a grade point average of at least 3.0. Undergraduate course work in biology, chemistry, genetics, organic chemistry, calculus, statistics and psychology is highly recommended. Also required are letters of recommendation, response to essay questions and Graduate Records Examination scores. Prospective students are encouraged to obtain exposure to a clinical setting with relevance to developmental disabilities, genetic diseases, advocacy experience or related areas.

DEGREE REQUIREMENTS: The master of Science in Genetic Counseling is offered only as a *Plan B* Graduate School program, requiring an essay project, including a total of forty-two credits: thirty-four credits of course work, six credits in clinical internships, and two credits for the research project. A detailed listing of the required courses is available from the Program Director. All course work must be completed in accordance with the academic rules and regulations of the Graduate School and the School of Medicine, see pages 16 and 283, respectively.

Graduate Courses (MBG)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For inter-

pretation of numbering system, signs and abbreviations, see page 509

7010 Molecular Biology and Genetics. Cr. 4

Prereq: organic chemistry background. Basic aspects of molecular genetics. (F)

7020 Advanced Molecular Biology and Genetics. Cr. 3

Prereq: MBG 7010 or equiv. Advanced core concepts in molecular biology and genetics. (W)

7030 Genetic Analysis. Cr. 3

Prereq: MBG 7010 or consent of instructor. Use of modern genetic analysis to investigate problems in cellular and molecular biology. Lectures and critical analysis of original literature used to illustrate concepts of molecular genetics and genetic engineering in eukaryotic and selected model prokaryotic systems. (B)

7090 Communication of Molecular Biology Data. Cr. 2

Prereq: consent of instructor. Written aspects of collection and communication of molecular biology data. (B)

7120 (PHC 7220) Cell and Molecular Biology of Cancer Development. (C B 7220) Cr. 3

Prereq: PHC 7210; BMB 7010 or CHM 7620 or equiv. Detailed analysis of neoplastic cells at cellular and molecular levels. Emphasis on critical genes in cancer development, nature of changes in these genes and how genetic changes result in altered cellular phenotypes that are involved in malignancy. (B)

7140 Nucleic Acids. Cr. 2

Prereq: MBG 7010 and 7020 or equiv., or consent of instructor. Detailed examination of the basic chemical and physical principles that affect the stability of DNA and some of the major reactions it undergoes, both in vivo and in vitro. RNA also treated as appropriate. (B)

7400 Molecular Biology of Cellular Signalling. (C B 7400) Cr. 2

Molecular basis of cell-cell interactions, hormonal interactions, and interactions between different cellular compartments. (B)

7460 Research Training in Molecular Biology and Genetics. Cr. 1-8

Prereq: consent of adviser or graduate officer. Direct participation in laboratory research under the supervision of faculty adviser. Design and execution of experiments; analysis of laboratory data; interpretation of results and their relation to published findings. (T)

7560 Molecular Biology of Cellular Organelles. Cr. 2

Graduate prereq: one year of biochemistry, one course in molecular biology; undergrad. prereq: consent of instructor. Molecular biology, genetics, and evolution of mitochondria and chloroplasts; organelles that contain their own DNA complement; emphasis on mitochondria. (B)

7600 Advanced Human Genetics. Cr. 3

Concepts, problems, and methods of human genetics at an advanced level. (B)

7620 (BIO 7620) Molecular Virology. Cr. 3

Prereq: BIO 3070 or equiv. and CHM 6620 or equiv.; or written consent of instructor. A study of the basic principles of virology including virus structure, the nature of virus-host interactions and the molecular biology of virus multiplication. The course will also include workshops on virus structure, virology techniques and presentations by guest speakers. (I)

7640 Principles of Genetic Counseling. Cr. 3

Prereq: admission to genetic counseling graduate program. History and evolution of genetic counseling and how it relates to clinical genetic services within the health care delivery system. Genetic counseling skills such as case preparation, interviewing techniques, and family history assessment; counseling methods. (B)

7700 New Techniques in Molecular Biology. Cr. 1-3

Prereq: MBG 7010 and 7020 or equivalents. Review and extension of recombinant DNA basics. Analysis of cloned genes at the DNA

and functional levels, detection of mutations, immunological techniques, application of lower eukaryotes to molecular medicine, computer methods in molecular medicine. (B)

7800 Advanced Medical Genetics. Cr. 3

Prereq: MBG 7600. Review of all aspects of the field. Delivery of clinical genetic services as a team approach centered on the family. (T)

7840 Recent Advances in Molecular Biology and Genetics. Cr. 1 (Max. 4, M.S.; max. 6, Ph.D.)

Offered for S and U grades only. Seminars on unpublished work presented by invited speakers from the scientific community. (T)

7850 Current Topics in Molecular Biology and Genetics. Cr. 1 (Max. 4, M.S.; max. 6, Ph.D.)

Offered for S and U grades only. Current literature in molecular biology and genetics; one student makes oral presentation with student and faculty discussion. (I)

7880 Genetic Counseling Seminar. Cr. 1-6

Prereq: admission to graduate program in genetic counseling. Discussion format; issues relevant to medical genetics and genetic counseling process. Presentations by students and invited faculty. (T)

7890 Research Conferences in Molecular Biology and Genetics. Cr. 1 (Max. 4, M.S.; max. 6, Ph.D.)

Offered for S and U grades only. Required course for Departmental graduate students. Weekly meetings of staff, invited guests and qualified students to learn about and discuss recent developments; one member discusses ongoing research, with a general discussion. (T)

8680 Advanced Topics in Molecular Biology and Genetics. Cr. 1-3 (Max. 12)

Prereq: consent of instructor. In-depth study of concepts and research in specific fields. (I)

8998 Genetic Counseling Internship. Cr. 1-8

Prereq: admission to genetic counseling graduate program. Students work in variety of genetics and subspecialty clinics as well as laboratory settings, under supervision of genetic counselor/geneticist. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of instructor. Open only to departmental M.S. candidates. Student conducts research and prepares written presentation, designed to test specific hypothesis dealing with method, concept, or data. (T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16 (30 req.)

Prereq: consent of doctoral adviser and graduate committee. Student designs and conducts research involving hypothesis testing in relation to methods, concepts and data. (T)

ANATOMY and CELL BIOLOGY

Office: 8374 Scott Hall; 577-1061
Chairperson: Linda Hazlett

Professors Emeritus

Maurice H. Bernstein, Gabriel W. Lasker, David B. Meyer, Nicholas J. Mizeres

Professors

Morris Goodman, Harry Goshgarian, Linda D. Hazlett, Harry Maisel, Jerald A. Mitchell, Roberta G. Pourcho, Jose A. Rafols, Robert P. Skoff

Associate Professors

David R. Armant, Mihir Bagchi, Bruce Berkowitz, Leon Carlock, William J. Crossland, James C. Hazlett, Mark E. Ireland, Mauricio A. Lande, Paul Walker

Assistant Professors

Joanne Fujii, Dennis Goebel, Michelle Kurpakus

Adjunct Professors

Anna C. Ettinger, Jerry Slightom

Adjunct Associate Professors

Daniel Michael, Craig Watson, Saul Weingarden, Frank Yelian

Adjunct Assistant Professors

John Cavanaugh, Joseph Failla, Sheldon M. Mintz, Lacey Walke

Associates

Barry A. Bogin (Anthropology), David S. Carlson (Center for Human Growth, University of Michigan), Robert Frank (Ophthalmology), Eugene V. Perrin (Pathology), Gino G. Saliccioli (Orthopedic Surgery), Mark L. Weiss (Anthropology)

Graduate Degrees

MASTER OF SCIENCE with a major in anatomy and cell biology

DOCTOR OF PHILOSOPHY with a major in anatomy and cell biology

Master of Science and Doctor of Philosophy Degrees

The Department of Anatomy and Cell Biology offers training for investigation of biological and biomedical problems using molecular, cellular, and morphological approaches. Faculty members are active in a diversity of research areas, including cell and developmental biology, neuroanatomy and neurophysiology, vision research, reproductive and evolutionary biology, immunology, and endocrinology. Study for the Ph.D. degree includes thesis research in the laboratory of a faculty member and can generally be completed in four to five years. A combined M.D./Ph.D. program in anatomy and cell biology normally requires six years. A limited number of students are admitted to a research plan M.S. degree program, completion of which typically requires two years.

During the first year, doctoral students participate in an integrated curriculum which includes students from other basic science departments in the School of Medicine. There are three major courses of study: Molecular Biology and Biochemistry; Cell Biology; and Systems Biology. These include both lectures and interactive participation with faculty members in a small group setting. Seminars and

elective courses broaden the exposure to clinically-relevant areas of research. Opportunities are provided for the student to become acquainted with the diverse research interests of the faculty and to obtain hands-on experience in selected techniques. In the second year, students may select advanced courses in several areas of Anatomy and Cell Biology and choose an adviser to assist in development and implementation of a dissertation research project. The graduate program is flexible and allows for continuing interdisciplinary training; emphasis is placed on designing a program which is tailored to the student's particular goals. In addition to developing research competence, individuals interested in pursuing teaching as part of a career will be able to achieve competence in neuroscience, embryology, and microscopic or gross anatomy.

Admission to these programs is contingent upon admission to the Graduate School and the School of Medicine; for requirements, see pages 16 and 283, respectively. Applicants must have an undergraduate degree. A minimum honor point average of 3.0 is required for admission to the Ph.D. program; a minimum of 2.6 is required for admission to the master's program. An interview with the Graduate Committee Chairperson or designated representative is desirable. The Graduate Record Examination is required for admission. Foreign students must be proficient in English as determined by satisfactory performance on the standardized TOEFL English proficiency examination.

Scholarship: All course work must be completed in accordance with the regulations of the Graduate School and the School of Medicine governing graduate scholarship and degrees, see pages 16-30 and 283, respectively.

MASTER OF SCIENCE REQUIREMENTS: This program includes both course work and research which may be presented in a thesis form (Plan A) or as a research publication (Plan B). Students must select courses from: ANA 7010, 7030, 7080, 7130, and 7330, as well as eight credits in research.

DOCTOR OF PHILOSOPHY REQUIREMENTS: Applicants for the Doctor of Philosophy degree must complete ninety credits beyond the baccalaureate degree, including at least thirty credits in research and dissertation, eight to ten credits in a minor, and fifty-two credits distributed between the major and required cognate courses and electives. All doctoral degree students must complete ANA 7010, 7030, 7080, 7130, and 7330.

Assistantships and Research

The Department has graduate assistantships and graduate research positions available for a number of qualified students. All students accepted into the graduate degree program are considered for financial assistance, and no application forms are necessary for this purpose. Students on assistantships are advised to elect no more than twelve credits in a given semester. All students, whether or not they hold a fellowship or assistantship, are required to assist the graduate faculty in teaching and research activities as a component of their educational experience. For more information on financial assistance, students should consult or write the Graduate Committee Chairperson, Department of Anatomy and Cell Biology, Wayne State University School of Medicine, 540 East Canfield, Detroit, Michigan 48201.

GRADUATE COURSES (ANA)

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The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

7010 Human Gross Anatomy. Cr. 8

Prereq: acceptance in departmental graduate program. Lectures and dissection of limbs, back, thorax, abdomen, head and neck, pelvis and perineum. Written and practical examinations. (F)

7030 Human Microscopic Anatomy. Cr. 4

The microscopic structure of tissues and organs. Lectures and laboratory study. (F)

7080 Human Embryology. Cr. 3

Prereq: ANA 7010 or 7030. Study of experimental and human embryology; developmental processes, with particular reference to human embryology. (W)

7090 Developmental Neurobiology. Cr. 2

Prereq: ANA 7080 or equiv. Seminar with laboratory supplementation. Phenomena basic to the process of development; field forces, principles of induction, nuclear-cytoplasmic interactions, the role of cell death in differentiation, the function of cell contacts. (B:F)

7130 Neuroanatomy. Cr. 4

For anatomy graduate students. (W,S)

7190 Neuroscience Survey. (BIO 7190) (I M 7190) (PHC 7190) (PSL 7190) (PSY 7190) Cr. 3

Offered for S and U grades only. Interdisciplinary overview of principles of neurosciences. (F)

7260 Special Dissection. Cr. 2-10 (Max. 20)

(T)

7270 Special Projects in Anatomy. Cr. 2-10

(T)

7330 Cell Biology. Cr. 3

Modern concepts of cellular structure and function. Topics include: membranes, cytoskeleton, cell organelles, cell division. (W)

7890 Seminar. Cr. 1 (Max. 4)

(T)

7990 Directed Study in Physical Anthropology. (ANT 7990) Cr. 1-8 (Max. 8)

(T)

7996 Research. Cr. 1-15 (Max. 30)

(T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

(T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16 (30 req.)

Offered for S and U grades only. (T)

ANESTHESIOLOGY

Office: 7D6 University Health Center; (132)5-3618

Chairperson: Eli M. Brown

Professor

Eli M. Brown, Morris Brown

Adjunct Associate Professor

Roy Aston

Associate Professors, Full-Time Affiliate

Gaylord Alexander, Charles B. Caldwell, Samuel Perov, Bernard G. Sivak

Assistant Professors, Full-Time Affiliate

Lavanda Armstrong, Aaron P. Betel, Elie J. Chidiac, Jeffrey Clark, Samir F. Fuleihan, Halim Haber, Marvin R. Jewell, Pramod Kerkar, Henry R. Kroll, Vimala Kunjappan, Myrtice E. Macon, Miriam Lebenbaum Mansoor, William J. Pavlik, Richard B. Peterman, A. Michael Prus, Michael K. Rosenberg, Orlando S. Sison, Thomas Stathakios, Robert Tawil, Maria M. Zestos

Clinical Associate Professor

Gerhard C. Endler

Clinical Assistant Professors

Edward Bartholomew, Eugene Boyle, David Cohen, Todd E. Liningner, Jack A. Young

Clinical Instructors

Yale S. Falick, Ronald S. Schmier

Instructors, Full-Time Affiliate

Pikul Tontapanish, Selma Velilla

This department provides to medical students a program in anesthesiology comprised of individual instruction in the operating room and a series of regularly scheduled seminars. The major objectives of study in this field include the acquisition of skills and knowledge related to: (1) air-way management, including endotracheal intubation; (2) lumbar puncture and spinal anesthesia; (3) monitoring of anesthetized patients; (4) pharmacology of anesthetic agents and other drugs related to anesthesia; (5) preoperative evaluation and preparation of a patient for anesthesia and surgery; (6) physiology of the perioperative period; (7) respiratory therapy including management of patients who require prolonged ventilator care; (8) management of acute drug intoxication; and (9) management of pain.

A one-month elective in anesthesiology is offered to medical students during the senior year. The student may select to have this elective at one of a number of designated hospitals in the Detroit metropolitan area, or, upon special request and with the approval of the department chairperson, at some other institution.

BIOCHEMISTRY and MOLECULAR BIOLOGY

Office: 4374 Scott Hall; 577-1511

Chairperson: Barry P. Rosen

Professors

Sam C. Brooks, Ray K. Brown (Emeritus), Brian F.P. Edwards, David R. Evans, Robert M. Johnson, C. P. Lee, Richard B. Needleman, Barry P. Rosen, Serge N. Vinogradov

Associate Professors

Robert A. Akins, William S. Brusilow, Marilyn S. Doscher, James J. Lightbody, Leonard I. Malkin, Robert A. Mitchell

Assistant Professors, Full-Time Affiliates

Sharon Ackerman, Maureen Brandon, Domenico Gatti, Ladislav C. Kovari, Bharati Mitra, Vasily Studitsky

Associates

Joyce Benjamins (Neurology), Yoav Ben-Yoseph (Pediatrics), Ta-Hsu Chou (Oncology), T. H. Kuo (Pathology), Lana Lee (University of Windsor), Stephen Lerner (Infectious Disease), Adhip Majumdar (Veterans Administration), Richard Miller (Veterans Administration), Ye-Shih Ho (Chemical Toxicology), Vishwanath M. Sardesai (General Surgery), Edward Yurewicz (Gynecology/Obstetrics), Jiri Zemlicka (Oncology)

Graduate Degree

DOCTOR OF PHILOSOPHY with a major in Biochemistry and Molecular Biology

Students of the basic medical sciences study biochemistry with particular emphasis in the following areas: the chemical composition and environment of cells; metabolic mechanisms involved in cellular maintenance and function; the biological sources of energy and the pathways for its formation; intermediary metabolism as a dynamic interplay between cellular constituents, structures, substrates and stresses; and the role of nucleic acids in cell function. Course work in this discipline involves students principally in laboratory experiences which familiarize them with the experimental basis of biochemical concepts and techniques.

The Department of Biochemistry offers programs leading to the Master of Science and Doctor of Philosophy degrees. The doctoral degree is standard in the Department for students planning teaching or research careers in this field; master's study is recommended only for special circumstances. The department attempts to pattern students' programs according to their interests and, at the same time, to provide them with diverse experiences in the major areas of biochemistry. An M.D.-Ph.D. program with a major in biochemistry is also available.

Doctor of Philosophy Degree

Admission to this program is contingent upon admission to the Graduate School (see page 16) and the Graduate Programs of the School of Medicine (see page 283). Additionally, applicants are expected to meet the following departmental requirements: Students must have an undergraduate degree. Preferred majors include chemistry, biology, or physics, although other students are encouraged to apply. A minimum honor point average of 3.0 for the Ph.D. program is required; and an interview with the Graduate Officer or designated representative should be arranged if possible. The Graduate Record Examination with the advanced test in biology or chemistry is required for unconditional admission, although a student may be admitted conditionally until completion of the Examination. Foreign students must be proficient in English as determined by satisfactory

performance on the standardized TOEFL English proficiency examination.

Scholarship: All course work must be completed in accordance with the regulations of the Graduate School and the School of Medicine governing graduate scholarship and degrees, see pages 16-30 and 283, respectively.

DOCTOR OF PHILOSOPHY REQUIREMENTS: Applicants for the Doctor of Philosophy degree must complete ninety credits, including at least thirty credits in research and dissertation, eight to ten credits in a minor and fifty to fifty-two credits distributed between the major and required cognate courses and electives. To fulfill major requirements, students must complete Biochemistry 7010, 7020, 7050, 7320, 7330, 7340, and four credits in 7890.

Each student must arrange a program in an area of minor concentration with a representative of the department in which he/she plans to minor and preferably with the representative on the doctoral committee. Concentrations in the following are among the acceptable minors: organic chemistry, physical chemistry, physical-organic chemistry, microbiology or immunology, pharmacology, physiology, biology and computer science.

Assistantships and Research

The Department has graduate assistantships and graduate research positions available for a number of qualified students. All students accepted into the graduate degree programs are considered for financial assistance and no application forms are necessary for this purpose. Students on assistantships are advised to elect no more than twelve credits in a given semester. All students, whether or not they hold a fellowship or an assistantship, are required to assist the graduate faculty in teaching and research activities as a component of their educational experience. For more complete information on financial assistance, students should consult or write the Graduate Officer, Department of Biochemistry and Molecular Biology, Wayne State University School of Medicine, 540 East Canfield, Detroit, Michigan 48201.

GRADUATE COURSES (BMB)

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5010 General Biochemistry Lectures. Cr. 2
Prereq: CHM 1020 or equiv.; organic chemistry strongly recommended. Structural biochemistry; metabolism of carbohydrates; lipids, proteins and nucleic acids; molecular biology. (F,W)

7010 General Biochemistry Lecture. Cr. 4
Prereq: organic chemistry. Introduction to biochemistry (first course of the graduate sequence). Structure of biological molecules, enzymes and bioenergetics, intermediary metabolism. (F)

7020 Biochemistry Laboratory Rotation. Cr. 3
Research projects with various faculty. (T)

7050 Interpretation of Biochemical Data. Cr. 1
Prereq. or coreq: BMB 7010. Open only to biochemistry graduate students. Drill in the quantitative aspects of biochemistry by use of the problem-solving approach. Problem sets assigned weekly; solutions subsequently presented and discussed. (F)

7320 Protein Structure and Function. Cr. 3
Prereq: BMB 7010 or equiv. Structure, function, and design of proteins: architecture, function, regulation, assembly and evolution of proteins and protein complexes; theory and technics of kinetic analysis; newer technics of protein design and engineering. (W)

7330 Molecular and Cellular Biochemistry I. Cr. 4
Prereq. or coreq: BMB 7010. Modern topics in biochemistry, including nucleic acid dynamics, genomic structure, DNA replication and repair, transcription, RNA processing, transition and protein synthesis. (Y)

7340 Molecular and Cellular Biochemistry II. Cr. 4
Prereq: BMB 7330. Modern topics in biochemistry and cell biology, including biosynthesis of cell structures, motility, membrane transport, ATPases, signal transductions and G-proteins, cell cycle control, embryonic development. (Y)

7670 Advanced Biochemistry Laboratory. Cr. 2-10
Advanced laboratory techniques as applied to investigations of biological materials. (S,F)

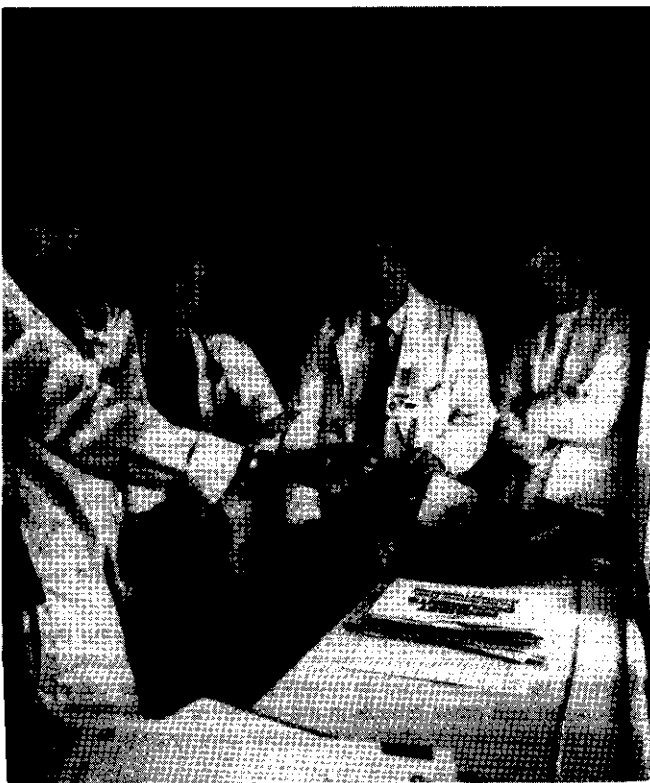
7770 (PTH 7770) Clinical Biochemistry I. Cr. 2
Prereq: BMB 7010 or equiv. Biochemical theory and applications as related to the clinical laboratory. (F)

7890 Journal Club. Cr. 1 (Max. 6)
Prereq: BMB 7010 or equiv. Student presentations of papers from recent biochemistry literature; recommended for graduate students in biochemistry only. (F)

7996 Research. Cr. 1-15 (Max. 30)
(T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)
(T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16 (30 req.)
Offered for S and U grades only. (T)



COMMUNITY MEDICINE

Office: 9D University Health Center; 577-1033

Chairperson: John B. Waller, Jr.

Professor

Eugene P. Schoener

Associate Professors

Antonia D. Abbey, Robert Burack, James L. Moseley, John B. Waller, Jr.,
Rosalie F. Young

Adjunct Associate Professors

Diane Brown, J. Douglass Peters, Norbert Reinstein

Assistant Professors

Richard P. Kaczynski, Lee Kallenbach, Maryjean Schenk

Adjunct Assistant Professors

J. Kay Felt, Ernest Hammel, Elaine Hicks, Katherine Parker, Roger Spry,
Edward Thomas

Clinical Assistant Professors

George R. Fleming, Silas Norman, Cynthia Shelby-Lane

Adjunct Instructors

Gerald W. Aldridge, Sandra Brown, Adger Butler, Alma P. A. Chand, Roger
L. Wabeke

Associates

Emmanuel J. Blessman, Raymond Y. Demers, Sheila Eaton, John Flack,
Paul T. Giblin, Denise Gray, Anne V. Neale, Nitjin Paranjpe, Eugene Perrin,
Richard Severson, Michael Simon, Herbert Smitherman, Jr., Mark J. Upfal,
Lawrence Warbasse, Ernest Yoder

Graduate Degrees

*MASTER OF SCIENCE with a major in Community Health Services and a
specialization in occupational medicine*

*GRADUATE CERTIFICATE in Community Health Services
Research And Evaluation*

Community medicine is the academic discipline that deals with the identification and solution of health problems of communities or human populations. It is a population-based discipline which addresses certain aspects of all purposes of medicine: health promotion, disease prevention, restoration of health, relief of suffering, and the maintenance of health while requiring a precise definition of health problems and a specific commitment to examine them and treat them in the full scope of their implications. The range and scope of the sciences and skills required in community medicine include epidemiology, biostatistics, experimental design, research methodology, and an array of biomedical and behavioral sciences. Central to the approach of community medicine is the premise that the main factors that determine a community's health are to be found within the community itself: in its social, economic, cultural, ethnic, and biological features; or in its environment, natural and human. Therefore the charge of the Department of Community Medicine is to define selected community problems, propose studies and solutions, maintain surveillance, evaluate progress, and monitor the use of resources.

There is a strong community and public health focus in the Department, and an emphasis on research and applications of socio-behavioral and medical sciences to health problems in the community. Collaboration with other schools in the University allows for an interdisciplinary approach to study of the health care system.

The Department also provides training for first-year and second-year medical students in epidemiologic and biometric studies, and in current health service issues relevant to medical practice. Opportunities exist for students who wish to concentrate on aspects of community and public health during their senior elective year.

Master of Science

With a Major in Community Health Services

Admission to this program is contingent upon admission to the Graduate School and the School of Medicine; see pages 16 and 283, respectively. Candidates must also complete undergraduate work in mathematics, natural science, and social science, and have experience in a health-related position. Deadline for Fall admission is July 1, by which date all materials must have been received by the Department. Admission in Winter term is subject to the approval of the Departmental Graduate Committee; admission material must be received by November 1.

DEGREE REQUIREMENTS: Candidates for the master's degree must complete thirty-six credits in course work, under *Plan A* or *Plan B* as defined on page 27. Course selections must include C M 6010, 6020, 7100, 7210, 7240, 7250, 7320, and 7400. An honor point average of at least 3.0 must be maintained. All course work must be completed in accordance with the regulations of the Graduate School and the School of Medicine governing graduate scholarship and degrees; for requirements, see pages 16-30 and 283, respectively.

Combined M.S. Graduate Certificate in Gerontology Program: A concentration in health and aging is available to qualified students in the Master's degree program. Upon completion, a Graduate Certificate in Gerontology is awarded with the M.S. degree. This course of study is designed to train persons committed to careers in health-care institutions, long-term care facilities, and community agencies and organizations. Students must fulfill all requirements for the Master of Science degree, as described above, completing forty-five credits in community health and gerontology. Approval of the directors of both programs is required. (See the Institute of Gerontology, page 38.)

Occupational Medicine Specialization: Consult the department for information, and requirements in this specialization; also see the Department of Occupational and Environmental Health Sciences, page 351.

Graduate Certificate Program

The Department offers a program in community health services research and evaluation, which provides specialized training for individuals of varying backgrounds and experience who are committed to working in the health care field. The course of study is designed to develop the student's capacity to conduct research and analyze community health problems and health care delivery services.

Admission to this program is contingent upon admission to the Graduate School and the School of Medicine; see pages 16 and 283, respectively. In addition, a background in health care is required, as is a background of course work or experience in the areas of mathematics, social science, natural science, and computer usage. Students may enroll in the certificate program concurrently with a regular graduate degree program (M.S., M.A., or Ph.D.).

CERTIFICATE REQUIREMENTS: Candidates must complete thirteen credits in course work (C M 7100, 7240, 6010, and 7210) and one elective in the student's area of interest. Electives from an approved list may be taken within or outside the department. An honor point average of 3.0 must be maintained. All work must be completed within three years.

Financial Aid: The University offers a limited number of Graduate Professional Scholarships available to students in community medicine programs; for information, contact the Graduate School: 577-2172. Paid internships are also available. The Theodore Goldberg Award is presented to outstanding graduate students in the department, upon completion of requirements.

GRADUATE COURSES (C M)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

6010 Biostatistics I. Cr. 3

Required of all M.S. students in Community Health Services program. Descriptive statistics; elementary probability; measures of central tendency and of dispersion; random samples; probability distributions including the binomial, the Poisson, the normal, the t, the chi-square, and the f; introduction to estimation and hypothesis testing; rates and vital statistics. (W)

6020 Biostatistics II. Cr. 3

Prereq: C M 6010 or equiv. Required of M.S. students in Community Health Services program. Intermediate applied statistics for students in health-related fields. Introduction to multiple regression, partial correlation, analysis of variance and multivariate discrete data analysis in health investigations. (B:F)

7030 Advanced Topics in Medical Statistics. Cr. 2

Prereq: C M 6020 or equiv. Introduction to most frequently-used new methods of applied biostatistics; emphasis on use of computer to analyze data encountered in medical research. For the prospective medical research investigator. (B:F)

7100 Introduction to Organization and Administration of Community Health Services I. Cr. 3

Required of all M.S. students in Community Health Services program. General overview of the U.S. health care system; social and organizational aspects of the delivery, financing, utilization, planning, and development of health care systems. (B:S)

7210 Research Methods for Health Professionals. Cr. 4

Prereq: C M 6010 or equiv. Required of all M.S. students in Community Health Services program. Logic of research design; formulation of research problems and objectives; development of hypotheses, specification of variables; sampling; random assignment; issues in measurement; data collection; sources of error; analyses. Computer laboratory included. (F)

7240 Epidemiology. Cr. 3

Required of all M.S. students in Community Health Services program. Open to students in the College of Nursing, College of Pharmacy and Allied Health Professions, and others. Epidemiologist's task list; research of problems without known etiology; infectious and non-infectious models; examination of current problems. (F)

7250 Applied Epidemiology. Cr. 3

Prereq: C M 7240 and 6010 or equiv. Required of all M.S. students in Community Health Services program. Epidemiological principles, practice, and methodology as applied to researchable health delivery or health questions. Emphasis on design, conduct and analysis of non-experimental studies; student design of epidemiological study. (B:W)

7300 Health Care Policy. Cr. 3

Concepts, issues, and problems in health care policy; substantive information regarding policy formulation and content. (B:S)

7320 The Social Basis of Health Care. Cr. 3

Required of all M.S. students in Community Health Services program. Concepts, issues, and problems related to the social basis of health care; strategies and tactics for community health care organization and change. (B:F)

7370 Health, Disease, and Aging. Cr. 3

Investigation of health and health problems common to gerontological populations. Biomedical and psychosocial aspects of both physical and mental disease; family and societal impact of illness in later life. (B:F)

7380 Gerontological Health Care. Cr. 3

Analysis of health care delivery and utilization patterns involving older patients. Health service providers and geriatric care institutions investigated. Community services and service gaps identified. For students in health and medical care fields and those majoring in gerontology. (B:W)

7400 Survey of Health Economics. (ECO 7550) Cr. 3-4

Prereq: ECO 6000 or consent of instructor. No credit after ECO 5550. Offered for four credits only to economics students. Analytically rigorous examination of the allocation of health care resources. Additional analyses of the economics of information and the role of advertising. Required of all M.S. students in Community Health Services program. (B)

7760 Community Health Education. Cr. 3

Analysis of community health problems and change strategies for health promotion; application of principles and techniques of community health education to multiple ethnic groups and diverse health problems. (B)

7850 (SOC 7850) Seminar in Applied Gerontology. (S W 8850) Cr. 3

Prereq: completion of three gerontology courses, consent of instructor. Open only to students in gerontology or community health services M.S. program. No credit after S W 8810. Approaches to evaluation of applied research in gerontology from multi-disciplinary perspective. Topics include: research design, program evaluation methods, assessment of research related to multi-disciplinary facets of applied gerontology. (T)

7860 Occupational Medicine. (OEH 7860) Cr. 4

Prereq: admission to the Graduate School. Clinical knowledge about prevention, recognition, diagnosis and treatment of occupational and environmental disorders. Etiology, pathophysiology, natural history and health outcomes of important categories of occupational/environmental diseases. Worker/work environment interrelationships. (B)

7880 Business, Labor, Regulation and Medicine. (OEH 7880) Cr. 3

Prereq: admission to the Graduate School. Topics related to business, labor, occupational safety and health regulations, and the legal milieu in which modern occupational medicine operates. (B)

7990 Directed Studies in Community Health Services. Cr. 1-6

Studies dealing with the organization and management of community health services to supplement regular course offerings. (T)

8090 Interdisciplinary Perspectives on Addictions. Cr. 3

Prereq: ten credits in approved certificate program courses. Open only to students in alcohol and drug studies certificate program. Capstone course designed to integrate content from other substance abuse courses in a multidisciplinary context. (Y)

8990 Master's Project. Cr. 1-3 (3 req.)

(T)

8999 Master's Thesis Research and Direction. Cr. 2-8 (8 req.)

(T)

DERMATOLOGY and SYPHILOLOGY

Office: 5E University Health Center; 577-5057
Chairperson: Ken Hashimoto

Professors

Donald J. Birmingham (Emeritus), Ken Hashimoto

Clinical Professors

Jules Altman, Isadore Botvinick, Thomas A. Chapel, John N. Grekin, Amir H. Mehregan

Clinical Associate Professors

Thomas F. Downham II, Richard F. Elton, Richard J. Ferrara, Syed L. Husain Hamzavi, Constantin Predeteanu, Homayoon Rahbari, Earl J. Rudner, Robert J. Schoenfeld, Oscar D. Schwartz, Benjamin Schwimmer, Andrew E. Segal, Daniel M. Stewart, Julius Stone, James D. Stroud, Harold E. Usndek, Rudolf E. Wilhelm

Assistant Professors

Peter J. Aronson, Ali Moiin, L. Boyd Savoy, Stephen W. Sturman

Clinical Assistant Professors

Martin M. Abbrecht, Myron Barlow, Jon H. Blum, John D. Butler, Alan D. Cohen, Carl J. Cohen, Stephen I. Field, Alan Fligiel, Mohammad Ghaemi, Stanley Greenberg, Joel J. Harris, Martin Hart, Robert P. Heidelberg, Davide Iacobelli, Lawrence Krugel, Edward S. Lerchin, Antonina Miller, Hossein Nabai, Vladimir V. Panin, Richard S. Schwartz, Marvin D. Siegel, Richard H. Smith, Mark A. Stiff, Antoinette Tanay, Jay Victor, Harold R. Wagenberg

Clinical Instructors

Barry I. Auster, David Blum, Henry G. Bryan, Louis C. Chiara, Michael Dorman, Michael S. Frank, Nora Maya Kachaturoff, Joseph W. Kaufman, Sato Jean Kegler, Ronald D. Kerwin, Bruce L. Krieger, Ann A. LaFond, Judith T. Lipinski, Jolanta E. Malinowski, Darius Mehregan, David Mehregan, Jeffrey M. Shuster, Everett B. Simmons, Jr., Richard A. Stone

The instructional and research activities of this department focus on the skin as a distinct organ of the body. Specific diagnostic procedures developed in recent years such as immunopathology, and new modalities of treatment such as PUVA and Mohs micrographic surgery, are taught in the department.

A comprehensive clinical dermatology elective is offered to fourth year students. A research elective is also available to qualified students, offering both basic and clinical research in the fields of immunobiology, molecular biology, ultrastructural analysis, photobiology and dermatopathology.

The department offers a three-year, fully-accredited residency training program to candidates at the second postgraduate year level.

EMERGENCY MEDICINE

Office: 8D University Health Center; 313-993-2530
Chairperson: Brooks F. Bock

Professors

Brooks F. Bock, Ronald L. Krome, Norman M. Rosenberg, Blaine C. White

Associate Professors

Gary S. Krause, Brian O'Neil, Patti L. Peterson, Robert J. Zalenski

Assistant Professors

Craig P. Adams, Jenny G. Atas, Don M. Benson, William A. Berk, Nirmala B. Bhaya, Lisa A. Braun, Mark W. Brautigan, Jacek R. Brudzewski, Pamela J. Claps, Carol L. Clark, Alvan R. Cruz, Minh N. Cruz, Dean Dalbec, Dree E. Daugherty, Donald J. Degracia, Brenda S. Donaldson, Roy C. Elrod, Michael J. Falzon, Jerrold R. Fisher, James M. Fox, Scott B. Freeman, Ann Marie Garritano, Sudershan K. Grover, Anne M. Guyot, Earl R. Hartwig, Christopher J. Heberer, Wilma V. Henderson, Beverly J. Huszarik, Charlene B. Irvin, Stephen R. Knazik, Ralph Kontry, Joseph W. Kosnik, Terry Kowalenko, Evan C. Leibner, Philip A. Lewalski, Nancy Z. Lockhart, Robert T. Malinowski, Kevin R. McDonald, Kirk C. Mills, Steven M. Pearl, Margarita E. Pena, Karen Randall-Kristal, W. Maurice Roethel, Lawrence R. Schwartz, Falah H. Shamsa, Denise A. Shuttie, Donald B. Smith, Jr., Anthony C. Southall, Kalavathy K. Srinivasan, Gail M. Stewart, Padraic J. Sweeney, Ross E. Tabbey, Helene Tigchelaar, Robert P. Wahl, Robert D. Welch, Douglas J. Wheaton, Suzanne R. White, Hashim M. Yar, Timothy G. Ying

Clinical Assistant Professors

Lydia Baltarowich, Gloria J. Kuhn, Woodrow A. Myers, Jr.

The Department of Emergency Medicine provides basic life support training and physical diagnosis instruction to sophomore students. Junior students receive advanced cardiac life support training and participate in a suture laboratory to learn suture techniques. A mandatory rotation in emergency medicine for all senior students takes place at Detroit Medical Center hospitals or other affiliated hospitals. The fourth year rotation is designed to familiarize the student with: (1) the evaluation, assessment and stabilization of patients with urgent medical problems; (2) invasive and noninvasive procedures routinely used in the emergency department; and (3) management of acutely-ill patients in a timely manner.

Graduate medical education includes four three-year emergency medicine residency programs, two based at the Detroit Medical Center (Detroit Receiving Hospital and Grace Hospital), and one each at William Beaumont Hospital - Royal Oak and St. John Hospital and Medical Center. All programs are fully accredited.

FINANCIAL AID: *The John Skjaerlund, M.D., Endowed Fellowship* was established to support emergency medicine research by Wayne State medical students. To apply for funding, contact: Blaine White, M.D. (basic science research) or Robert Zalenski, M.D. (clinical research).

FAMILY MEDICINE

Office: 3 South, Grace Hospital, 6071 W. Outer Drive; 966-1919
Chairperson: Paul T. Werner

Professors

Barnaby Barrett, Richard E. Gallagher, Paul T. Werner

Associate Professors

A. Victoria Neale, Mark Upfal

Assistant Professors

Hassan Amirikia, James E. Blessman, Jr., Patrick D. Bridge, Karen W. Crowell, Bruce R. Deschere, Yvonne Friday, David L. Gaspar, Michael L. Goldstein, Barbara Joyce, John Kelly, Nehman L. Lauder, Jatin K. Pithadia, Sharon Popp, John Porcerelli, Edward Rose, Frederick C. Rosin, Linda Roth, Maryjean Schenk, Kendra L. Schwartz, Cathy L. Simpson, Lourdes Velez

Assistant Professors, Full-Time Affiliate

John J. Escott, Sander Kushner, Tsveti Markova, Raouf R. Seifeldin

Lecturer

Juliann Binienda

Clinical Professors

George Mogil, Mary E. Roth

Clinical Associate Professors

John M. Battle, Archie W. Bedell, George A. Dean, Paula Kim, Robert Lachance, Jack Ryan

Clinical Assistant Professors

Antonia Aguirre, Mohammad-Amin Badawi, Donald Bignotti, Roy W. Boyer, Ray A. Breitenbach, John Chahbazi, Kenneth Colton, William Conley, Arthur M. Cooper, George Costea, Bernard Dash, Luke Elliott, Cynthia L. Fisher, Melvyn Freidman, Kathleen Fulgenzi, Thomas J. Ganos, Gary Gazella, John Geralt, Frederick Grose, Cecelia F. Hissong, Ronald Hunt, Dennis Joy, Charles Lapp, Paul Lazar, Robert Lechy, John L. Lehtinen, Robert Levine, Lucy J. Macdonald, Donna Manczak, Richard Marcolini, Nevena Mihailoff, Dariouche Mohammadi, Robert Moretsky, Christopher J. Pabian, Gary G. Otsuji, Kris Parnicky, Frank P. Raiford III, Gerald Rakotz, Abraham D. Reinhartz, Michelle Ritter, David Rogers, Leonard Rosen, Frank Roth, Anne Saddler, Samuel Scheinfeld, Milton Simmons, Abraham B. Solomon, James Stewart, Walter J. Talamonti, Amos Taylor, Thomas A. Tenaglia, Larry C. Thompson, Robert J. Urban, Anthony Vettraino, Gary Weltman, Robert Wolfe, Gary A. Wozniak, Louinda V. Zahdeh, Louis R. Zako

Clinical Instructors

Robert C. Orr, David Rogers, Howard B. Schwartz, Jean Sinkoff, Gayla N. Zoghlin

Adjunct Professor

Benjamin Hodgkins

Adjunct Associate Professors

Edward J. Kerfoot

Adjunct Assistant Professors

Ernest Hammel, Jane R. Thomas

Adjunct Instructors

Patricia Armstrong, Gerald Terlep, Roger Wabeke

Undergraduate Education

The Department of Family Medicine supports student education in physical diagnosis, ethics and the humanities through several mechanisms. In the first year of medical school a 'clinical track' is offered to all of the freshman class and all of the sophomore class. These usually pre-clinical students are exposed to a variety of case simulations, physical diagnosis problems, and clinical experiences at the University, as well as in local residency programs and physician offices. Additionally, a voluntary experience allows medical students to visit practicing family physicians.

A required four-week third year clerkship/preceptorship is conducted by the Department. Most students are placed with private physicians or residencies in family practice located throughout the Detroit metropolitan area. Alternative placements locate students in physician's offices in outstate Michigan, including the Upper Peninsula. This course stresses ambulatory family practice with an emphasis on skill-building based in a continuity of care experience.

A number of electives are offered in the fourth year, including: additional preceptorship experiences with practicing family physicians, specially-designed experiences with family practice residency programs, geriatrics, occupational health, community medicine, and research.

Graduate Education

The Department, in cooperation with Grace Hospital, Huron Valley Hospital, Sinai Hospital and other Detroit Medical Center institutions, sponsors a three-year accredited Family Practice Residency Program. Ambulatory family practice experience takes place in the Family Practice Center, located at the Huron Valley Family Practice Center in Novi, the Grace Family Practice Center in Royal Oak, Michigan, the Woodward Corridor Family Health Center and the Sinai Family Practice Center (both in Detroit). Hospital rotations are arranged through the Detroit Medical Center Network. Residents gain experience in Children's, Harper, Hutzel, Detroit Receiving, Huron Valley-Sinai, and the Veterans Administration hospitals. The Department has initiated a two-year program in occupational and environmental medicine training at the graduate level. A geriatric fellowship (two years) is operated jointly with the Department of Internal Medicine.

Postgraduate Education: The Department plays an active role in providing continuing education for family physicians in practice. A five-day clinical update conference is presented each year in addition to weekly and monthly Departmental conferences approved for continuing medical education credit to which practicing physicians are invited.

Community Service: In order to carry out clinical education functions, faculty and residents of the Department offer medical care to the community through the Family Practice Centers and related institutions. Patient care functions are performed in collaboration with other health professionals such as clinical nurse specialists, clinical pharmacists, and social workers and their students. These services are available to individuals and families of all socio-economic levels in the community, including students, staff and faculty of the University. The Department provides geriatric care at Grace Hospital and the Detroit Medical Center Nursing Center in Dearborn Heights. A senior departmental faculty member directs the epidemiology section of the Karmanos Cancer Institute.

Research: Departmental research interests include studies designed to improve the delivery of primary health services at the individual, family and community level and to provide health promotion services which recognize the important role of the family and community in maintaining health and coping with illness. Specific research projects focus on the cost-effectiveness of patient education in risk factor reduction, occupational health screening in industrial workers, and ambulatory health issues. The health needs of the elderly are another major area of research interest, particularly in issues that relate to prevention of debilitating illness and cost-effectiveness of health care. Newer research programs include cancer epidemiology.

IMMUNOLOGY and MICROBIOLOGY

Office: 7374 Scott Hall; 577-1591
Chairperson: Paul C. Montgomery
Deputy Chairperson: Robert H. Swanborg

Professors

Richard S. Berk, Dov L. Boros, William J. Brown, Linda D. Hazlett, Charles D. Jeffries (Emeritus), Joseph Kaplan, Yi-chi M. Kong, Maurice G. Lefford (Emeritus), Myron A. Leon, Seymour Levine (Emeritus), Robert Lisak, Paul C. Montgomery, Sunil Palchaudhuri, Jack D. Sobel, Roy S. Sundick, Robert H. Swanborg, Judith Whittum-Hudson

Associate Professors

Thomas C. Holland, Alan P. Hudson, Matthew P. Jackson, Stephen P. Lerman, Helene C. Rauch, V. Fay Righthand, Paul H. Wooley, Harley Y. Tse, Fayth Yoshimura, Wei-Zen Wei

Adjunct Associate Professors

Heiner Frost, Alvaro Giraldo

Assistant Professors

Lee Carrick, Jr., Anne Galy, Stuart Ratner

Adjunct Assistant Professors

Jenn Chen, Brenda W. McCurdy, Jane Peppard

Adjunct Instructor

Emmy Peck

Associates

Joyce Benjamins (Neurology), Robert Bright (Karmanos Cancer Institute), Paula Dore-Duffy (Neurology), Anton S. Goustin (Molecular Medicine), Gloria Heppner (Pathology), Gilda Hillman (Urology), Stephen A. Lerner (Internal Medicine), Michael Long (Pathology), Joseph R. Merline (Pathology), Nancy L. O'Sullivan (Anatomy and Cell Biology), Raymond Podzorski (Pathology), Samia Ragheb (Neurology), Jerry C. Rosenberg (Surgery), Anthony G. Sacco (Obstetrics and Gynecology), Hitoshi Shichi (Ophthalmology), Michael Simon (Internal Medicine), David Svinarich (Obstetrics and Gynecology)

Graduate Degrees

MASTER OF SCIENCE with a major in Immunology and Microbiology

DOCTOR OF PHILOSOPHY with a major in Immunology and Microbiology

The Department of Immunology and Microbiology has twenty full-time faculty and forty-three support personnel including graduate students, post-doctoral fellows, administrative and technical staff. In addition, affiliate faculty in health care units of the Detroit Medical Center, and the Michigan Cancer Foundation participate in departmental activities. Several senior associates from these institutions are members of the Departmental graduate faculty. The full-time faculty are actively engaged in individual and collaborative research in the areas of immunology, virology, bacteriology, mycology and prokaryotic molecular genetics. Current research of the immunologists includes autoimmune diseases, cancer immunology, complement, immunoparasitology, infectious diseases, lymphocyte biology, neuroimmunology, mucosal immunology, immunogenetics and immune regulation. The virologists are investigating the control of viral gene expression, glycoprotein functions, molecular mechanisms in latent and persistent viral infections and transcription regulation

using herpes simplex viruses, picornaviruses and retroviruses. The bacteriologists are studying molecular mechanisms of bacterial pathogenesis, regulation of bacterial gene expression in mammalian cells, bacterial invasion of eukaryotic cells, ocular infections and drug delivery systems and structure-function analyses of bacterial toxins.

The Department offers a diversified program leading to the Doctor of Philosophy degree. The Master of Science degree is available under special circumstances. Areas of specialization include mucosal immunity, autoimmunity, lymphocyte recirculation, bacterial physiology, bacterial genetics, microbial pathogenesis, molecular virology, genetic basis of viral pathogenesis and cancer biology. All questions concerning these programs should be directed to the Graduate Officer, Department of Immunology and Microbiology.

Master of Science and Doctor of Philosophy Degrees

Admission to these programs is contingent upon admission to the Graduate School (see page 16) and the Graduate Programs of the School of Medicine (see page 283). Additionally, applicants are expected to meet the requirements of the Department: Students must have an undergraduate degree. A minimum honor point average of 3.0 for the Ph.D. program and 2.5 for the master's program is required. An interview with the Graduate Officer or designated representative is desirable. The Graduate Record Examination aptitude test is required. Foreign students must be proficient in English as determined by satisfactory performance on the standardized TOEFL English proficiency examination.

Scholarship: All course work must be completed in accordance with the regulations of the Graduate School and the School of Medicine governing graduate scholarship and degrees. For requirements, see pages 16-30 and 283, respectively.

MASTER OF SCIENCE REQUIREMENTS

Candidates for the master's degree must complete thirty credits in course work in accordance with *Plan A* as outlined in this bulletin; see page 27. Required courses include BCH 7010; I M 7000, 7010, 7020, and 7030.

DOCTOR OF PHILOSOPHY REQUIREMENTS

Candidates for the doctoral degree must complete ninety credits beyond the bachelor's degree, including thirty credits in doctoral dissertation direction; BCH 7010; I M 7000, 7010, 7020, and 7030. For information regarding the distribution of credits among major and minor requirements, consult the Department.

Assistantships and Research

The Department has graduate assistantships and graduate research positions available for a number of qualified students. All students accepted into the graduate degree program are considered for financial assistance and no application forms are necessary for this purpose. Students on assistantships are advised to elect no more than twelve credits in a given semester. All students, whether or not they hold a fellowship or an assistantship, are required to assist the graduate faculty in teaching and research activities as a component of their educational experience. For more information on financial assistance, students should consult or write the Graduate Officer, Department of Immunology and Microbiology, Wayne State University School of Medicine, 540 East Canfield, Detroit, MI 48201.

GRADUATE COURSES (I M)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

5500 Principles of Immunology. Cr. 2

Open only to clinical laboratory science students; others by written consent of instructor. Lectures and laboratory exercises in basic immunology, including the relevance to human medicine. Material fee as indicated in the Schedule of Classes. (F)

5510 Bacteriology. Cr. 4

Open only to clinical laboratory science students; others by written consent of instructor. Lectures and laboratory exercises in the fundamentals of microbiology, including bacteria, viruses and fungi, and a detailed consideration of the role of those agents in disease. Material fee as indicated in the Schedule of Classes. (W)

5520 Virology and Mycology. Cr. 2

Prereq: I M 5510. Open only to clinical laboratory science students; others by written consent of instructor. Lecture and laboratory course in diagnostic and clinical virology and mycology. (S)

7000 Medical Microbiology and Virology. Cr. 3

Prereq: consent of instructor. Open only to Immunology and Microbiology Department students. Presentation of microorganisms that cause disease in humans. (F)

7010 Fundamentals of Immunology. Cr. 4

Prereq: BMB 7010 or equiv. Basic concepts and current developments in immunology, including cellular and molecular aspects, regulation, and immunopathological mechanisms. (F)

7020 Fundamentals of Microbiology. Cr. 3

Prereq: CHM 2260 and BIO 2200, or equivs. Basic aspects of bacteriology, genetics and mycology. (F)

7030 Fundamentals of Virology. Cr. 3

Prereq: BMB 7010 or equiv. Basic principles of virology including the nature of virus host interactions and the molecular biology of virus multiplication and genetics. (W)

7190 (ANA 7190) Neuroscience Survey. (BIO 7190) (PHC 7190) (PSL 7190) (PSY 7190) Cr. 3

Offered for S and U grades only. A substantive overview of neuroscience as a multifaceted discipline; general properties of brain cells, organization and function of nervous system, and nervous system in behavior and pathology. (F)

7400 Basic Immunogenetics. Cr. 1

Prereq: consent of instructor. Lecture and discussion on basic concepts and practice in immunogenetics; emphasis on Major Histocompatibility Complex, immunoglobulin genes, and T cell receptor genes. (S)

7410 Tumor Immunology. Cr. 3

Prereq: I M 7010. Introduction to current literature in tumor immunology with presentations by students. (Y)

7440 Recent Advances in Immunology. Cr. 1-5

Prereq: consent of instructor. Offered for A-C grades only. May not be elected concurrently with I M 7450. Lectures and discussions on recent advances in research. (I)

7450 Current Trends in Immunology. Cr. 1-5

Prereq: consent of instructor. Offered for S and U grades only. May not be elected concurrently with I M 7440. Lectures and discussions on current literature and research problems. (I)

7520 Molecular Mechanisms of Bacterial Pathogenesis. Cr. 2

Prereq: consent of instructor. The roles of bacterial virulence factors such as tissue colonization, invasion, and exotoxins in pathogenesis. The genetic regulation of bacterial virulence factors will be discussed. (B)

7540 Recent Advances in Microbiology. Cr. 1-5

Prereq: consent of instructor. Offered for A-C grades only. May not be elected concurrently with I M 7550. Lectures and discussions on recent advances in microbiology research. (I)

7550 Current Trends in Microbiology. Cr. 1-5

Prereq: consent of instructor. Offered for S and U grades only. May not be elected concurrently with I M 7540. Lectures and discussions on current literature and research problems. (I)

7650 Current Trends in Virology. Cr. 1-5

Prereq: consent of instructor. Offered for S and U grades only. Lectures and discussions on current literature and research problems in virology. (I)

7750 Bacterial Metabolism. Cr. 2

Prereq: I M 7020, BMB 7010 recommended. Chemical activities and organization of the bacterial cell in relation to biochemical function, energy mechanisms, oxidation and fermentation, bacterial nutrition, and physiological evolution. Principles of quantitative techniques used in biochemical research on microorganisms. (B:W)

7820 Molecular Genetics. Cr. 2

Prereq: I M 7020 or equiv. Principles of gene transfer; physical and genetic aspects of recombination; plasmid DNA structure, genetics and regulation. (B:W)

7850 Research Conferences in Immunology and Microbiology. Cr. 1-5 (Max. 20)

Offered for S and U grades only. Open only to Immunology and Microbiology students. Seminars and discussions in selected areas. (T)

7890 Seminar. Cr. 1

Offered for S and U grades only. Open only to Immunology and Microbiology students. (T)

7996 Research. Cr. 1-8 (Max. 20)

Offered for S and U grades only. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

(T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16 (30 req.)

Offered for S and U grades only. (T)

INTERNAL MEDICINE

Office: 5 Green, Harper - Grace Hospital; (132)5-8210

Chairperson: John B. O'Connell

Professors

Nandalal Bagchi, Joseph J. Bander, Roy D. Baynes, Kenneth L. Bergsman, Carter R. Bishop, Pranatharthi H. Chandrasekar, Thomas H. Corbett, Lawrence R. Crane, John F. Ensley, Richard B. Everson, Felix R. Fernandez-Madrid, James H. Fisher, John M. Flack, George Grunberger, Marilyn T. Haupt, Lance K. Heilbrun, Gloria H. Heppner, David H. Kessel, Michael Kleerekoper, Marvin W. Kronenberg, Omer Kucuk, Neil A. Lachant, Stephen A. Lerner, Donald P. Levine, Joseph Levy, Warren E. Lockette, Robert E. Mack, Adhip N. Majumdar, James D. Marsh, Michael Massinari, Maureen D. Mayes, Stephen D. Migdal, Richard E. Miller, Milton G. Mutchnick, Alexander M. Nakeff, Ananda S. Prasad, Lawrence Resnick, Milagros P. Reyes, Michael K. Samson, Rick J. Schiebinger, Jack D. Sobel, Paul A. Sobotka, James R. Sowers, James R. Spears, Liborio Tranchida, Zoltan G. Turi, Frederick A. Valeriote, Gary W. Wood, Paul H. Wooley, Joshua Wynne

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Adjunct Professor

Michael J. Rybak

Associate Professors

Daoud K. Abu-Hamdan, Ayad M. Al-Katib, Judith C. Andersen, M. Safwan Badr, Robert C. Burack, Pravit Cadnapaphornchai, Lavoisier J. Cardozo, Pranatharthi H. Chandrasekar, Ben Dien-Ming Chen, Roger D. Dansey, John R. Ebright, Murray N. Ehrinpreis, James F. Eliason, Jeffrey L. Evelhoch, Gary T. Ferguson, Lawrence E. Flaherty, Brenda J. Foster, Robert R. Frank, Pamela R. Gordon, Jose L. Granda, Scott J. Jacober, Glenn W. Kaatz, Jeremy L. Kallenbach, Chatchada Karanes, Joseph L. Kinzie, James A. Kruse, Steven J. Lavine, Patricia M. LoRusso, Rodger D. MacArthur, Paul H. Naylor, Dorothy A. Nelson, Ralph E. Parchment, Rene R. Peleman, Noreen F. Rossi, Howard H. Schubiner, Paula Schuman, Anthony F. Shields, James H. Sondheimer, Paul S. Swerdlow, Martin Tobi, Antoinette J. Wozniak, Ernest L. Yode, Mark M. Zalupski

Clinical Associate Professors

Ali A. Abbasi, Charles G. Artinian, Lal G. Banerji, Surjit S. Bhasin, Edmund M. Barbour, Bernard A. Bercu, John G. Bielawski, James C. Brown, Frank E. Check, David A. Decker, Michael J. Federman, John M. Formolo, Eugene A. Gelzayd, Henry L. Green, Stuart C. Gordon, Abraham Grant, Robert L. Iverson, Bruce L. Kaplan, Arthur Klass, Jay H. Kozlowski, Michael H. Lehmann, Lyla J. Leipzig, Nicholas J. Lekas, Melvin A. Lester, Gerald N. Loomus, Louis C. Maas, Michael E. Maddens, Richard S. McCaughey, John W. Moynihan, Kenneth K. Newton, Donald C. Overy, Lloyd J. Paul, Leslie L. Rocher, Arthur Rose, Lewis H. Rosenbaum, Everett N. Rottenberg, John R. Schneider, Ila Shah-Reddy, Paul S. Siefert, Young Ho Sohn, James C. Sunstrum, Lawrence C. Sweet, Efstathios Tapazoglou, Lyle D. Victor, Ignatios J. Voudoukis, Freeman M. Wilner, Clyde Y. Wu, Jeffrey M. Zaks, Marcus Zervos, Eldred G. Zobl

Adjunct Associate Professor

Randal W. Rowland

Associate Professor Emeritus

Saul Rosenzweig

Assistant Professors

Loutifi S. Aboussouan, Nelia M. Afonso, George J. Alangaden, Joel L. Appel, Elizabeth B. Arnold, Eric W. Ayers, Frances W.J. Beck, Gregory E. Berger, Bruce D. Bialor, Ziya Bilen, Lynette Brown, Patricia D. Brown, Thomas R. Brown, Angela Bully, Steven E. Cala, Joseph Chow, Jonathan A. Cohn, Glenn D. Cummings, Josephine P. Dhar, Ravi Dhar, Marcelo F. DiCarli, Zora Djuric, Wei Du, Gary W. Edelson, David S. Eilender, Rochelle A. Eubanks-Daniel, Stephen L. Farrow, Barbara S. Fromm, Steven D. Gellman, Gary A. Gintant, Reda E. Girgis, James J. Glazier, Wasif Hafeez, Richard J. Harris, Mohamed A. Hatahet, John A. Hopper, Ibrahim A. Jawad, Gregory P. Kalemkerian, Robert L. Karvonen, Dana G. Kissner, Paul Z. Kissner, Jared L. Klein, Michael J. Kraut, Willane S. Krell, Lawrence S. Lackey, Jr., David A. Lavine, Marlo F. Leonen, Li Li, Tammy S. Lundstrom, Elias K. Manavathu, Marc D. Meissner, Ramzi M. Mohammad, Anita V. Moncrease, Jeffery A. Moshier, Angelia D. Mosley-Williams, Debra J. Myers, Berj M. Nercessian, Rajiv H. Patel, Philip A. Philip, Randall L. Reher, Robert S. Robertson, Graciela E. Rojas, James A. Rowley, Cheryl A. Ruble, Paul E. Ruble, Linea L. Rydstedt, Steven J. Santner, Paula Schuman, Nipurn J. Shah, Hossein Shenasa, Mohamed S. Siddique, Dale H. Sillix, Herbert C. Smitherman, Jr., Mark W. Speece, Pothur R. Srinivas, Joel D. Steinberg, Gerald E. Turlo, Angela Tzelepis, Mary L. Varterasian, Jose A. Vasquez, Ming-Hai Wang, Lawrence H. Warbasse III, Sung K. Yang, Sami Zarouk

Clinical Assistant Professors

Ahmad Abu-Rashed, Fazel Ahmad, Edward Adler, Naseer Ahmad, Syed A. Amouzegar, Momtaz Anar, Elaine L. Atallah, Pierre C. Atallah, Yassir R. Attalla, Manmohan Badhwar, Judith L. Bateman, Neil A. Basmaji, Robert L. Begle, Neil J. Beigiano, Fernando G. Bermudez, Ratilal D. Bhakta, Smita Bijlani, Gary G. Bill, Sylvia M. Bonner, Oswald Bostic, Roderick J. Boyes, James B. Bragman, Timothy A. Brennan, Elaine M. Brenner, William L. Bristol, Henry Brystowski, John H. Burrows, Michelle L. Butler-Jackson, Sumner L. Camisa, William R. Carion, James C. Carney, Ronald A. Charles, Nathan B. Chase, Allan W. Chernick, Ernest P. Chiodo, Raymond C. Christensen, Eudoro Coello, James E. Clinton, Gina M. Conflitti, James W. Crowl, Leon A. Crumley, Dominic A. Cusumano, Robert M. Cutler, Stephen P. D'Addario, Shukri W. David, Lingareddy Devireddy, Ralph E. DiLisio, Donald G. Dincheff, Gordhan Diora, Allan E. Dobzyniak, George W. Dombi, Nitin C. Doshi, Stephen M. Dovitz, Michael S. Doyle, Vilma Drelichman, Michael C. Duffy, Howard J. Dworkin, Kenneth J. Dziuba, Michael H. Eidelman, Phillip S. Eisenberg, Kevin J. Embach, Mitchell C. Feinman, Barry W. Feldman, Steven Feldman, Richard S. Fine, John W. Finn, Mark E. Florek, Marcia S. Fowler, Howard I. Frumin, Charles G. Godoshian, Howard S. Goldberg, James J. Gordon, Kevin J. Grady, Omar Guevara, Carolyn E. Guidot, John R. Haapaniemi, Walid A. Harb, Michael R. Harbut, Mary Beth Hardwicke, Tawfiq Hassan, Paul W. Hayden, Jeffrey S. Herman, Kurt G. Hesse, George W. Hnatiuk, Stephen D. Hoerler, Christopher W. Hughes, Pankaj Hukku, David M. Jacobs, Ishmael A. Jaiyesimi, Joel K. Kahn, Sambamurty Kalahasty, Satish N. Kamath, Konstantinos Kapordelis, Khalil M. Karadshah, Rachel B. Keith, Lucia A. Kemennu, Saad P. Kemennu, Nathan J. Kerner, Marc D. Keshishian, Riad Khatib, Mazen Kherallah, Sleman A. Khoury, Raphael J. Kiel, Jeffrey M. Klein, Marvin L. Kofender, Jay H. Kozlowski, Norman N. Kreiger, Alan Kwaselow, Thomas LaLonde, Theresa A. Larsen, James M. Learner, Cheng-Chong Lee, Hahn J. Lee, Eric J. Lerman, Barry A. Lesser, Robert N. Levin, Diane Levine, Gerald J. Levinson, Todd A. Lockwitz, Reuben Lopatin, Dennis Lynch, Ivan J. Mader, Sanganur V. Mahadevan, Raka Mahajan, Dennis J. Malloy, Norman Markowitz, Amy J. McCarthy, Christian McTurk, Jeffrey A. Meer, Demetrios N. Mermiges, Karen W. Merritt, Bruce K. Miller, Stanley D. Miller, Seth M. Mindell, Richard A. Minkin, Rosa Mirjanian, Pratibha Modi, Ramesh K. Mohindra, Antonio Morreale III, Barry M. Moss, Gordon M. Moss, Sami Mounayer, William F. Murray, Leo R. Murskyj, Ravi Murthy, Michael J. Neshewat, Craig L. Neuner, Silas Norman, Kathleen M. Norton, J. Scott Nystrom, Thomas K. O'Brien, Logan A. Oney, Jesus Ortega, Luis F. Ospina, Daniel E. Panush, Jeffery F. Parker, William F. Patton, Leon Pedell, Claus P. Petermann, Ronald J. Pierskalla, Thomas J. Piskowski, Martha A. Pollock, Stephen A. Portney, Paul T. Porter, Ashok R. Prasad, Rovert Provenzano, Ramegowda Rajagopal, Korembeth P. Ravikrishnan, Isabello C. Reyes, Sadiq H. Rizvi, Harold Rodner, Juan C. Rojas, Leonard J. Rosenthal, David E. Rosman, Sarah L. Rosso, Bradley Rowens, Steven B. Rubin, Linda C. Runyon, Jagdish K. Sachdeva, Gary S. Salem, Vinod B. Sanghi, Leonard Schreier, Joel C. Seidman, Robert C. Seski, Richard J.

Sharon, William C. Sharp, Stanley Sherman, Bennett J. Shiller, Sandor H. Shoichet, Oscar R. Signori, Anil K. Sil, Michael A. Sills, Jeffrey Silver-Tulin, Ann L. Silverman, Larry J. Silverman, Sai K. Sista, Joseph A. Skoney, Delano R. Small, Michael B. Snyder, Prakash M. Soares, William Solomon, Freddy R. Sosa, Lisa B. Speck, Michael E. Stachecki, Laurence E. Stawick, Russdell T. Steinman, Richard M. Stober, Sheldon S. Stoffer, Komol Surakomol, Cesar A. Sturla, John J. Szela, Timothy J. Tinefti, Kirit K. Tolia, Robert J. Veneri, Arthur T. Waytes, Nabil K. Webbe, Steven Widlansky, Todd S. Wilkinson, Theodore A. Wizenberg, Samir R. Yahia, Jeffrey P. Yanez, Saeed K. Zanjani

Adjunct Assistant Professors

Simon M. Cronin, Ann S. Edwards, Karen R. Kalbfleisch, Carol Klingbeil, Peter Proceviski

Instructor

Susan S. Eggly

Clinical Instructors

Valerie Abbott, Eugene J. Agnone, Joesph Baran, Lawrence E. Blase, Efrain R. Casas, Benjamin J. Diaczok, Michael J. Dionne, Bruce M. Eisenberg, Elliott N. Fraiberg, Adrian T. Go, Steven D. Grant, Genise E. Kerner, Vijay S. Kudesia, Mary E. Lazar, Robert J. Leonard, Todd A. Lockwitz, Michael A. McIlroy, Faiz W. Mansour, Wayne E. Miller, Renee Y. Paye, Ronald D. Pelavin, Michael H. Piper, Paavan P. Railan, Jyothi A. Reddy, Vijay Saigal, James C. Schwartz, Jr., Sudarshan K. Singal, William R. Tuuri, Rudy J. Ver-vaeke, Robert O. Walker, Donna J. Washington-Keeli, Robert Christopher D. Wilhelm, Lawrence P. Zablocki

Adjunct Instructors

Gwendolyn B. MacKenzie, Keir Todd

Professors, Full-Tome Affiliate

Mark B. Edelstein, Stephen J. Gunther, Jerome Horwitz, Nicholas Kerin, Steven Rabinowe, Vainutis K. Vaitkevicius, Jiri Zemlicka

Associate Professors, Full-Tome Affiliate

Oscar Bigman, Robert E. Bloom, Chaim M. Brickman, Paul L. Broughton, Gerald I. Cohen, Ralph Cushing, Lawrence P. Davis, Basim A. Dubaybo, Mark J. Goldberg, Maha Hussain, Richard Jaszewski, James J. Maciejko, Bohdan M. Pichurko, Theodore Schreiber, Claudio D. Schuger, Michael R. Simon, Waldemar J. Wajszczuk

Assistant Professors, Full-Tome Affiliate

Bobbie Allen, Jack E. Belen, Martin A. Bermann, Maged W. Boles, Vidya Chalasani, Amin A. Charania, Alan F. Cutler, Sudhir G. Desai, Raminder S. Dhadii, Marc M. Dunn, Marc A. Feldman, Brenda E. Field, Phylis A. Gimotty, Jorge A. Guzman, Nemer E. Hanna, Cheryl L. Harris, Julie A. Hendrix, Jay R. Levinson, Patricia A. Martin, David H. McAree, Boaz I. Milner, Mona Z. Obeidy, M. Akram Paracha, Alan J. Pawlow, Luis A. Pires, Paul A. Ragatzki, Donald J. Salberg, Barbara J. Siepierski, In Young Soh, Russell T. Steinman, Ronaldo B. Supena, David M. Vandenberg, Richard Vander-Heide, Jamie K. Warbasse, Richard Weber, Sheryl A. Wissman, Abbas Zagnoon, Nagi S. Zaki

Instructors, Full-Tome Affiliate

Anthony Clarke, Doris Fleming, Barbara Freeland, Ramesh Padiyar, Moe-hand Talia

year, the student works with the Department of Internal Medicine through participation in several clinical conferences. During the sophomore year, the student's attention is directed toward the study of pathophysiologic mechanisms of disease, the principles of clinical diagnosis and the scientific basis of therapeutics. An internal medicine forum is available for students interested in internal medicine as a career. In the junior and senior years emphasis is placed on the student's direct participation in patient care as a member of the health-care team. In the junior year the student gains clinical experience through assignment to Wayne State University teaching hospitals; this insures acquaintance with several members of the faculty and to a wide spectrum of medical problems. During the senior year, the student spends a month as an acting intern and a month in an outpatient clinic to gain experience with ambulatory medicine. Elective courses in subspecialties are offered. Students may also choose to pursue laboratory investigative programs under the tutelage of members of the faculty. In addition to formal course work, the student may elect more intensive study as a student-fellow in either clinical or laboratory medicine during the summer recesses. With the expansion of the Internal Medicine faculty, a number of research experiences supported by a variety of national funding agencies are available.



The major objective of the educational program in internal medicine is to establish a firm conceptual basis for clinical diagnosis and treatment of disease. The exposure to clinical disciplines is graduated throughout the student's four year curriculum. During the early medical school years emphasis is placed on the application of knowledge gained in the basic science courses to an understanding of the biological disorders which accompany human disease. In the freshman

NEUROLOGY

Office: 6E University Health Center; 577-1242

Chairperson: Robert P. Lisak

Professors

Joyce A. Benjamins, Harry T. Chugani, Paula Dore-Duffy, Peter A. LeWitt, Robert P. Lisak, Michael A. Nigro, Anders Sima

Clinical Professor

John Gilroy

Associate Professors

Joshua E. Adler, John Kamholz, Sheldon Kapen, William J. Kupsy, Richard A. Lewis, Kenneth Maiese, Patti L. Peterson, Lisa Rogers, Michael E. Shy, Craig E. Watson

Clinical Associate Professors

Paul A. Cullis, Ljubisa Dragovic, William Leuchter, A. Robert Spitzer, Danny F. Watson, Janusz J. Zielinski

Assistant Professors

Yasser M. Awaad, Geoffrey Barger, David Benjamins, Seemant Chaturvedi, William Coplin, M. Maher Fakhouri, Walid Freij, James Y. Garbern, Edwin George, Rashmi Gupta, Anne Guyot, Omar Khan, Betty K.K. Koo, Samia Ragheb, James F. Selwa, Aashit Shah, Jagdish Shah, Susan Smeitana, Dusanka Skundrik, Richard Trosch, Alexandros C. Tselis, Charise Valentine, Norman Wechsler

Clinical Assistant Professors

M. Mazen Al-Hakim, Lourdes V. Andaya, David Benjamins, Chandrakant Desai, Jose U. DeSousa, Lawrence Eilender, Clement Elechi, Raina M. Ernstoff, David Gaston, Cesar D. Hidalgo, Jay Kaner, Demetrios Kikas, Brian Kirschner, Bruce Kole, Boris Lehata, M. Zafar Mahmud, Sami Mounayer, Thomas O'Neil, Ayman Rayes, Leonard Sahn, Steven Schecter, Bharat M. Tolia

Adjunct Assistant Professors

Bradley N. Axelrod, Laurace E. Townsend

Clinical Instructor

Salcem Tahir

Associates

Ramon Berguer (General Surgery), Robert Berman (Anatomy), Leon Carlock (Molecular Biology and Genetics), Diane Chugani (Pediatrics), Robert F. Erlandson (Electrical and Computer Engineering), Morris Goodman (Anatomy), Edsel Ing (Ophthalmology), John R. Ingall (Surgery), Pamela A. Keenan (Psychiatry and Behavioral Neurosciences), John Kelly (Radiology), Chuan-Pu Lee (Biochemistry), Elliot Luby (Psychiatry and Behavioral Neurosciences), Jose Rafols (Anatomy), Jeffrey L. Ram (Physiology), Helene Rauch (Immunology and Microbiology), Joseph H. Ricker (Physical Medicine and Rehabilitation), Robert Skoff (Anatomy), Thomas C. Spoor (Ophthalmology), Robert H. Swanborg (Immunology and Microbiology), Harley Y. Tse (Immunology and Microbiology), Harvey I. Wilner (Radiology), Gertraud H. Wollschlaeger (Radiology)

Undergraduate Medical Education

The Department of Neurology provides instruction in the first, second, and fourth years of the medical curriculum. Members participate in the first year basic neuroscience course. In the second year the department is responsible for the clinical neuroscience-neurology course, which emphasizes pathophysiology. During the third year, all students rotate for four weeks through the neurology unit at one of

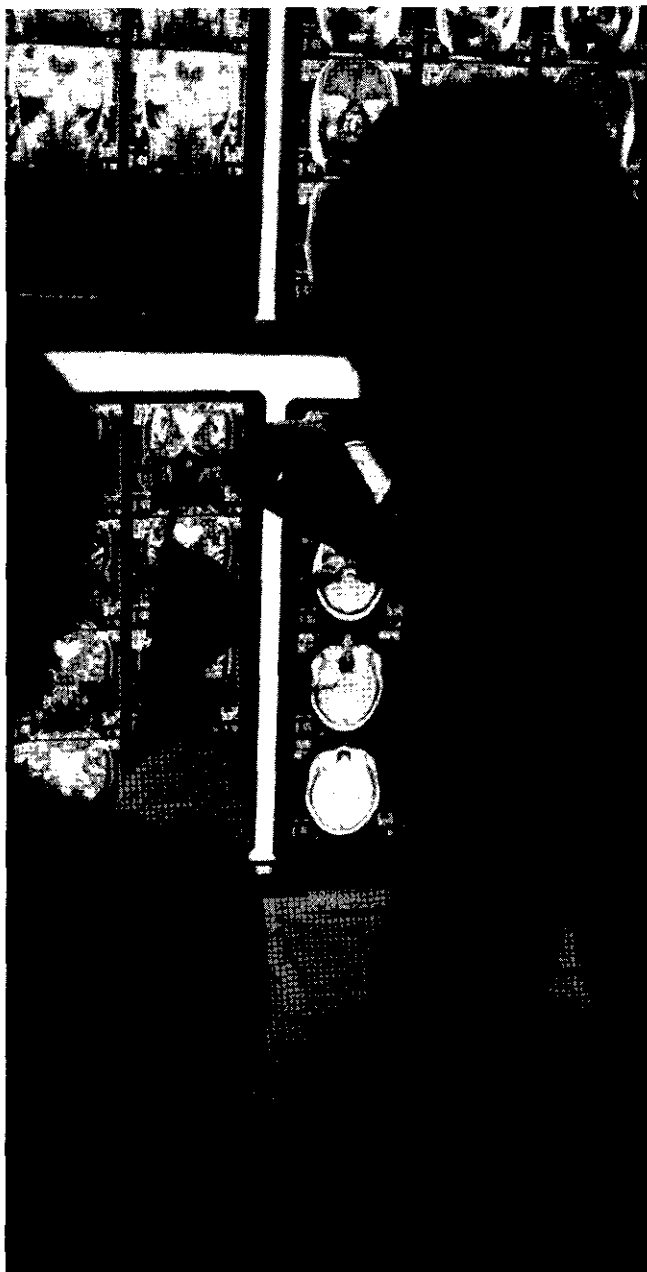
the University-affiliated hospitals, at which time the students receive bedside teaching and are given responsibilities in patient management. Clinical electives for students who have completed the required courses are available for interested students.

Post Graduate Education

The Wayne State University Neurology Residency Training Program is a fully-accredited program. The department offers a three-year training program for candidates applying for a second year post-graduate level of training. Post-residency fellowships are also available in neuromuscular diseases/EMG, epilepsy/EEG, neurocritical care, multiple sclerosis/neuroimmunology, stroke movement disorders, and sleep disorders.

Research Fellowships

Research fellowships for medical students are available, either in brief summer rotations or for longer periods taken during elective time. Interested students are encouraged to contact the Department of Neurology.



NEUROSURGERY

Office: 6E University Health Center; 745-4661

Chairperson: Fernando G. Diaz

Professors

Fernando G. Diaz, Alexa Canady, Pat McAllister, J. Paul Muizelaar, Setti S. Rengachary, L. Murray Thomas (Emeritus), Lucia Zamorano

Associate Professor

Robert E.M. Ho

Assistant Professors

Vicki M. Diaz, Richard D. Fessler, Jianxing Gong, Murali Guthikonda, Steven D. Ham, Robert R. Johnson III, Paul K. King, Qing Hang Li, Daniel B. Michael, Patricia M. Moylan, Hun K. Park, Sandeep Sood

Clinical Assistant Professors

Donald Austin, Blaise U. Audet, Assad Mazhari

Associates

James Hazlett (Neuroanatomy), Warren Lockett (Endocrinology), Gerald Mitchell (Neuroanatomy), Thomas Spoor (Neuro-ophthalmology)

The Department of Neurosurgery has the goal of acquainting the undergraduate medical student with the problems, both diagnostic and therapeutic, in the field of neurosurgery. This is accomplished by close affiliation with and participation in the neurosciences core curriculum of the freshman and sophomore years. Lectures, conferences and ward rounds are included in this teaching program. In the third year neurology teaching program the Department's curriculum emphasizes the surgical aspects of neurology. Third year students are made aware of problems best handled by neurosurgical techniques during their trauma and emergency surgery rotation. Fourth year students seeking further study of neurosurgical techniques may elect programs in clinical neurosurgery and in experimental treatment of head injury cases. Detroit Receiving Hospital, Harper Hospital, Grace Hospital, and Children's Hospital of Michigan are the primary clinical facilities for undergraduate instruction by this department.

A five-year residency training program (with an option of a two-year laboratory curriculum directed toward a Ph.D.) in neurosurgery is conducted by the Department and based at the following University-affiliated hospitals: Detroit Receiving, Harper, and Children's. The research interests of the department are concentrated primarily in the neurological mechanisms involved in, and protection against, head and spine injury, stereotactic and computer-assisted surgery, skull base surgery, aneurysms and AVM clinical studies, craniofacial anomalies, and hydrocephalus. The Department of Neurosurgery operates the Gurdjian-Lissner Biomechanics Laboratory as well as a microsurgical laboratory for residents and participants in ongoing research projects who require training in microsurgical techniques and microsurgical anatomy.

OBSTETRICS and GYNECOLOGY

Office: Hutzel Hospital; (313)5-7282

Chairperson: Mitchell P. Dombrowski

Professors

Ernest L. Abel, Joel W. Ager, D. Randall Armant, David B. Cotton, Gunter Deppe, Michael Diamond, Mark I. Evans, Robert Freedman, Bernard Gonik, John A. Hannigan, Mark Hughes, Michael Kleerekoper, Winston Koo, Wayne D. Lancaster, Eberhard F. Mammen (Emeritus), Kamran S. Moghissi, Anthony G. Sacco, Jack D. Sobel, Robert J. Sokol, Yoram Sorokin, Joan C. Stryker (Emeritus), Marappa Subramanian

Associate Professors

Stanley M. Berry, Carl W. Christensen, Michael W. Church, Mitchell P. Dombrowski, Kenneth A. Ginsburg, Mordechai Hallak, Mark P. Johnson, Stephen Krawetz, John M. Malone, Jr., S. Gene McNeeley, Dorothy Nelson, Edward C. Yurewicz

Assistant Professors

Melvyn Ayers, Susan Berman, Charla M. Blacker, Dmitri Dozortsev, Judith Fry-McComish, Craig Giroux, Rivka Greenberg, Lucie Gregoire, Susan Hendrix, Mark Hughes, Theodore B. Jones, David Kmak, Carole Kowalczyk, Richard E. Leach, Veronica Mallett, Brian Mason, Robert Morris, Adnan Munkarah, Karoline Puder, David Svinarich, Mark Tomlinson, Marjorie C. Treadwell, Todd VanHeest, Theodore Vlachos, Janice Whitty, Honor M. Wolfe

Clinical Professors

Silvio Aladjem, Federico Mariona, Roberto Romero, Alfred L. Sherman

Clinical Associate Professors

William S. Floyd, James Gell, Milton Goldrath, Sami Guindi, Roger H. Hertz, Wesley Lee, Robert P. Lorenz, David M. Magyar, John M. Malone, Vinay Malvia, David B. Schwartz

Clinical Assistant Professors

Anan A. Abdelrahman, Saleh Adel, Mohammed A. Ariani, Mohammed A. Aussie, Mehmet O. Baryam, Danny S. Benjamin, Jay M. Berman, Donald M. Blitz, Murray Brickman, Beth Ann Brindley, Richard Bronsteen, David Calver, Jeane Casselberry, Lawrence Chik, S. Leonard Cohn, Julius V. Combs, Christine Comstock, Leonard Dorey, Robert W. Dustin, Allan Emery, Gregory Goyert, Maria Hayes, Leon Hochman, Eli M. Isaacs, Stanislaw E. Jaszczak, Cecil R. Jonas, Sachchidanand Kaveeshvar, Kathryn Knudson, James Kornmesser, Chitranjan Lall, Henry Maicki, Donald Masse, Curtiz Meriwether, John Musich, Paul C. Nehra, Paul T. von Oeyen, Eugene Otlewski, Sai Park, Michael Prysak, N.S. Rangarajan, Scott Ransom, Elliott Roberts, Abdel Aziz Saleh, Saeed Saleh, George H. Shade, Jr., Susan Sherman, Ramada Smith, Peter Stevenson, John A. Tulloch, Gregory Utter, James Wardell, Debra Wright, Ivan E. Zador, David M. Zalenski

Clinical Instructors

Allen Berlin, Robert Chaitin, Ronald E. Cheek, Chin-Shuh Chen, Harry Doert, William Dougan, M. Jeannette Espy, Melinda Gibson, James E. Labes, David I. Lipschutz, Tina Mason, Michael S. Salesin, Franklyn E. Seabrooks, Seymour Ziegelman

Fellows

Sean Blackwell, Roselyn Dinsay, Baruch Feldman, Carol Graham, Sonia Hassan, Pamela Lewis, Juan Martinez-Poyer, Kevin McGinnis, David Seibert, Katharina Stewart

Hassan Amirikia (Family Medicine), Samuel C. Brooks (Biochemistry), Danica Dabich (Biochemistry), Chirpriya Dhabuwala (Urology), Gerhard C. Ender (Anesthesiology), Albert Goldstein (Radiology), Charles E. Lucas (Internal Medicine), Kazutoshi Mayeda (Biology), Eugene V. Perrin (Pathology), Antal E. Solyom (Psychiatry and Behavioral Neurosciences)

The discipline of obstetrics and gynecology is concerned with the reproductive health of women. This concept implies knowledge that extends from embryology through gerontology. A prime objective of the Department of Obstetrics and Gynecology is to present, and to add to, the current knowledge of the normal physiology and pathology of reproduction.

Major teaching and research efforts in the Department focus on several subspecialty areas, including maternal-fetal medicine, gynecologic oncology, reproductive endocrinology/infertility, and reproductive genetics. In addition, emphasis is placed on family planning and contraceptive technology, sonographic imaging, psychosexual issues, and computer applications in treatment, diagnosis, and research. The faculty integrates basic science and clinical research into clinical practice.

Students gain clinical experience in obstetrics and gynecology in Detroit Medical Center Hospitals — Hutzel and Sinai-Grace — in addition to other affiliated hospitals: William Beaumont, Oakwood, Providence, St. John's, and Henry Ford. The third year clerkship includes an extensive didactic course, as well as in-depth clinical experience. Further, clinical and research opportunities are available in all subspecialty areas during senior elective periods. Summer student research fellowships are available, both in clinical research within the Department, and in basic research at the C. S. Mott Center for Human Growth and Development, where the Department's basic science laboratories are located.

GRADUATE COURSES (OBG)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

7100 Reproductive Genetics. Cr. 4

Prereq: Board eligibility in obstetrics and gynecology; consent of instructor. Clinical and laboratory course designed for subspecialty fellows. Patient counseling, diagnostic and therapeutic interventions, discussion of the scientific foundations of clinical genetics, laboratory work in either cytogenetics or biochemical genetics.

7500 Statistics, Epidemiology, and Study Design. Cr. 3

Prereq: consent of instructor, postgraduate medical education. Knowledge of epidemiology and statistical methods used to design and interpret research.

OPHTHALMOLOGY

Office: 101 Kresge Eye Institute; 577-1355

Chairperson: Gary W. Abrams

Professors

Robert N. Frank, Robert S. Jampel, James E. Puklin, Hitoshi Shichi, Dong H. Shin, Thomas C. Spoor, Jayne S. Weiss, Akio Yamazaki

Adjunct Professors

John Ubels, Nalin J. Unakar

Associate Professors

Mark L. McDermott, Patrick L. Murphy, Ignaz M. Rabinowicz, Fred Zwas

Assistant Professors

Alexander M. Dizhoor, Dean Elliott, Bret A. Hughes, Edsel B. Ing, Nader G. Iskander, Mark S. Juzych, John M. Ramocki, John D. Roarty, Dian X. Shi

Assistant Professor (FTA)

Harish Budev

Adjunct Assistant Professor

Danny L. Wiedbrauk

Clinical Professors

John W. Cowden, Conrad L. Giles

Clinical Associate Professors

John D. Baker, David Barsky, Jo D. Isaacson, Sidney L. Stone, Michael T. Trese

Clinical Assistant Professors

Michael Clune, Paul H. Ernest, Brian C. Joondeph, Howard C. Joondeph, Marius S. Juzych, Donald Muenk, Frank A. Nesi, Rajesh Rao, Les I. Siegel

Clinical Instructors

E. Michael Balok, Ruth Boyman, Joel A. Miller, Hanna Obertynski, Joel M. Pelavin, Shirley T. Sherrod

The Ophthalmology Department is committed to education, research, and health care in the Detroit Medical Center. These activities are conducted primarily in the Kresge Eye Institute under the direction of the Department Chairperson. The close association of medical practice, research and teaching makes the Kresge Eye Institute a unique teaching facility. Whether correcting common eye disorders such as cataracts, glaucoma and strabismus, or performing highly technical operations such as vitrectomy, corneal transplants or lens implantations, the medical staff uses the most current diagnostic, treatment, and surgical methods. Thus, the Institute is ideally suited for clinical instruction because it attracts many patients with rare eye diseases, engages in advanced diagnostic techniques, performs a wide range of delicate eye operations and is a center for eye research. Through its affiliation with the University and the Detroit Medical Center, the Institute provides a stimulating learning environment for graduate physicians and medical students. At this facility they have the opportunity to work with leading ophthalmologists and research scientists.

Each year the Institute selects six outstanding medical graduates for a three-year residency training program in eye diseases and surgery. Clinical and research fellowships in corneal disease and transplantation, vitreoretinal diseases and surgery, glaucoma and oculoplastic surgery are available on a selective basis upon completion of the residency program. The Institute's faculty also provides lectures and clinical training for third and fourth year medical students. The teaching encompasses courses in ophthalmology for family practice and emergency medical care.

ORTHOPEDIC SURGERY

Office: 1 South, Hutzal Hospital; 745-8248
Chairperson: Stephen P. DeSilva

Professor

James R. Ryan

Adjunct Professor

Albert I. King

Professors (Clinical)

Richard L. LaMont, Jeffrey W. Mast, Keith A. Mayo, Carl L. Stanitski, Robert A. Teitge

Associate Professors

Ralph B. Blasier, Gino G. Salciccioli, Deborah F. Stanitski, Paul Wooley

Associate Professors (Clinical)

Philip J. Mayer, Sam Nasser, Steve A. Petersen

Clinical Associate Professors

James J. Horvath, Djoldas Kuldjanov, Robert S. Levine, Ronald E. Little, Peter R. Miller, Henry H. Sprague

Clinical Associate Professor Emeritus

Maxwell Bardenstein

Assistant Professor

Stephen P. DeSilva

Assistant Professor (Clinical)

John L. Kronick, Ronald S. Lederman, Robert H. Leland, Michael J. Mendelow, Jerry H. Rosenberg

Adjunct Assistant Professors

Michelle J. Grimm, King-Hay Yang

Clinical Assistant Professors

Milton M. Green, Gary M. Gilyard, G. Richard Jones, Shin-Young Kang, E. Michael Krieg, Christopher L. Lee, David C. Markel, David M. Montgomery, Steven Plomaritis, William H. Salot, L. Carl Samberg, Joseph M. Tejan

Clinical Instructors

Edward F. Burke, Walter L. Everett, James J. Faremouth, William R. Fulgenzi, Michael Geoghegan, Edward Jeffries, Eddie Jones Jr., Leo D. Ottoni, Carl Reichert, Jr., Daniel E. Schechter, Richard M. Singer, James C. Zurawski

Undergraduate orthopedic instruction is an integrated program designed to introduce the medical student to the entire field of musculoskeletal diseases and injuries. By means of demonstrations, lectures, conferences, clinics and clerkships, the student learns the important specifics of the orthopedic examination and is exposed to many groups of musculoskeletal problems related to trauma in adults and children. By study of the factual content of common problems in each field, the student's attention is directed to general principles of diagnosis and treatment.

OTOLARYNGOLOGY, HEAD and NECK SURGERY

Office: E University Health Center, 4201 St. Antoine; 577-0804
Chairperson: Robert H. Mathog

Professors

Dennis G. Drescher, James P. Dworkin, Sandra L. Hamlet, John R. Jacobs, Robert H. Mathog

Clinical Professors

Ned I. Chalat, Jack Kartush

Associate Professors

Walter M. Belenky, Marian J. Drescher, James Kaltenbach, Mark T. Marunick

Clinical Associate Professors

H. John Jacob, Francis Leveque, Richard R. Royer, George Viscomi

Assistant Professors

Richard L. Arden, John W. Becker, Don L. Burgio, Michael S. Hauptert, David N. Madgy, Steven C. Marks, Robert J. Meleca, Terry Y. Shibuya, George H. Yoo

Clinical Assistant Professors

Dennis Bojrab, Donald N. Coleman, Benn Gilmore, Roy Goodman, Edward G. Jankowski, Michael Larouere, Jeffrey S. Leider, James McKenna, Daniel D. Megler, Frank A. Nesi, William J. Rice, Michael E. Rollins, Eugene Rontal, Michael Rontal, David A. Scapini, Michael Siedman

Adjunct Professors

John Ensley, Darlene Mood

Adjunct Associate Professor

Dale O. Robinson

Adjunct Assistant Professors

Susan M. Fleming, Maria C. Jackson-Menaldi, Randal Rowland, Walter A. Salwen

Clinical Instructors

Seth Cohen, Ilene Garfield, Douglas D. Strong

Adjunct Instructor

William E. Loechel

Associate

Sabina A. Schwan (Audiology)

The undergraduate teaching program of the Department of Otolaryngology, Head and Neck Surgery is designed to acquaint students with all diseases treated by the modern otolaryngologist. Instruction is given in the methods of examining the ear, nose and throat in the outpatient department. Audiology is included so that the student may properly classify deafness in prescribing appropriate therapy.

Head and neck, and plastic and reconstructive surgery as related to otolaryngology are included in the instructional program. Observation and, at times, assistance at surgical operations offer additional learning opportunities to students. In general, the program stresses the correlation of ear, nose and throat to the entire curriculum in medicine and surgery.

PATHOLOGY

Office: 9374 Scott Hall; 577-1102
Chairperson: John D. Crissman

Professors

Yoav Ben-Yoseph, William J. Brown, John D. Crissman, Mark I. Evans, Richard Everson, Filiberto E. Giacomelli (Emeritus), David Grignon, Joel E. Haas, Kenneth V. Honn, Mark Hughes, Markku Kurkinen, W. Dwayne Lawrence, Eberhard F. Mammen, Fred Miller, Margarita Palutke, Eugene V. Perrin (Emeritus), Avraham Raz, Anders Sima, Joseph Wiener, Bennie Zak (Emeritus)

Clinical Professors

Jay Bernstein, Werner U. Spitz, Richard H. Walker

Adjunct Professor

Gloria H. Heppner

Associate Professors

Barbara J. Anderson, Joseph D. Artiss, Surath K. Banerjee, Dinyar B. Bhatena, A. Joseph Brough, Jan Cejka, Clement A. Diglio, Merlin E. Ekstrom, Suzanne E.G. Fligiel, Rafael Fridman, Suzanne Jacques, Tuan H. Kuo, William J. Kupsky, Kenneth C. Palmer, Faisal Qureshi, Wael Sakr, Fazlul H. Sarkar, Lucia Schuger, Francisco Velazques, Daniel Visscher

Clinical Associate Professors

Majid Alousi, Al-Renza Armin, Chung-Ho Chang, Kenneth A. Greenawald, Khang-Loon Ho, Swait Kanluen, Frederick L. Kiechele, Noel S. Lawson, Aaron Lupovitch, Thomas O. Robbins, John C. Watts, Richard K. Wesley

Adjunct Associate Professors

Gerald Feldman, Alvaro A. Giraldo

Assistant Professors

Volkan Adsay, Teisa An, Mausumi Banerjee, Raj D. Bhan, Harish Budev, Yong Q. Chen, Michael Cher, Maria E. Dan, Alina M. Domanowska, Saleh Ebrahim, A. Bradley Eisenbrey, Marilyn R. Fairfax, Mark P. Johnson, Ghada Khatib, Hyeong-Reh Kim, Debra Kukuruga, Patrick M. Long, David R. Lucas, Joseph Merline, Anwar N. Mohamed, Pamela Papas, Latha Pisharodi, Raymond P. Podzorski, Raja Rabah-Hammad, Nilsa Ramirez, Kaladhar Reddy, Husain Saleh, Malathy Shekhar, Shijie Sheng, Alistair S. Sundareson, Larry Tait, Marie F. Tenazas-Raval, Jerrold Turner, Richard VanderHeide, Jeffrey Virgin

Clinical Assistant Professors

Mahual B. Amin, Gary S. Assarian, Edward G. Bernacki, Jr., Sajal P.L. Choudhury, Adrian J. Christie, Yung Chung, Laning Davidson, Bradford Hepler, Barry R. Herschman, Mujtaba Husain, Stephan Isenschmid, Allen J. Levine, Cheryl Loewe, Anthony C. Noto, Donald R. Pevin, Michael Schaldenbrand, Scott Somerset, Rahima Spanta, Elizabeth Sykes

Adjunct Assistant Professor

Khosrow Adeli

Clinical Instructors

Mark D. Kolins, Thomas C. Peeples

Graduate Degree

DOCTOR OF PHILOSOPHY with a major in pathology

The Department of Pathology offers courses during the second, third and fourth years of medical school. The second year is devoted to the study of anatomic pathology. The course consists of pathobiology (the cellular basis of disease), mechanisms of disease, and systemic pathology (the gross, microscopic and ultrastructural features of systemic disease). General principles of clinical pathology (or laboratory medicine) are integrated into the systemic pathology units so that structure and function can be properly considered together. Third year students are exposed to subspecialties in pathology during their clinical clerkships. Students can elect subspecialty and/or research studies with various members of the Department in the fourth year.

At the graduate level, the Department of Pathology offers programs in experimental and molecular pathology leading to the Doctor of Philosophy degree.

Doctor of Philosophy

Admission is contingent upon admission to the Graduate School and the graduate programs of the School of Medicine; see pages 16 and 283, respectively. Applicants to this doctoral program should have a background in one of the chemical or biological sciences. Students with diverse backgrounds will be considered individually if they have special competence related to one of the departmental interests. Applicants are expected to provide their scores on the Graduate Record Examination. Personal interviews are desirable. Letters of inquiry should be directed to the Graduate Officer of the Department.

Scholarship: All course work must be completed in accordance with the regulations of the Graduate School and the School of Medicine governing graduate scholarship and degrees, see pages 16-30 and 283, respectively.

DEGREE REQUIREMENTS: Requirements for students enrolled in the doctoral degree programs are described on pages 27 and 283. Students are expected to demonstrate their understanding of a core curriculum, consisting of biochemistry, cell biology, molecular and cytogenetics, developmental biology, molecular mechanisms of carcinogenesis, general pathology, medical statistics, microanatomy, molecular biology, molecular pathology, and physiology, in order to pass a general examination for candidacy for the Ph.D. degree. Other courses are arranged to meet the specific needs and interests of each student. Research in pathology is expected of students in order to complete requirements for the Ph.D. degree, and may be conducted in the various fields of faculty specialization. In the area of experimental pathology, these include: cardiovascular pathology and biochemistry, cell biology, cytopathology, gynecologic/obstetric pathology, molecular biology and genetics, neurobiology and neuropathology, perinatal pathology, pulmonary and environmental pathology, tumor biology and immunology, and tissue culture.

Assistantships and Research

The Department has graduate assistantships and graduate research positions available for a number of qualified students. All students accepted into the graduate degree program are considered for financial assistance and no application forms are necessary for this purpose. Students on assistantships are advised to elect no more than twelve credits in a given semester. All students, whether or not they hold a fellowship or an assistantship, are required to assist the graduate faculty in teaching and research activities as a component of their educational experience. For more complete information on financial assistance, students should consult or write the Graduate Officer, Department of Pathology, Wayne State University School of Medicine, 540 East Canfield, Detroit, Michigan 48201. E-mail address: gradpath@med.wayne.edu.

GRADUATE COURSES (PTH)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

5000 Fundamentals of Pathology. Cr. 2

Coreq: ANA 03001. Open only to allied health students. Fundamentals of tissue injury and repair. (S)

6500 Systemic Pathophysiology. Cr. 3

Prereq: ANA 7030, PSL 7010, or consent of instructor. Offered for graduate credit only. Pathology and pathogenesis underlying abnormal physiologic function of major organ systems in humans. (F)

7000 General Pathology. Cr. 5

Prereq: BMB 7010 and 7030; PSL 7010 and 7030; ANA 7030; or written consent of instructor. The structural and functional manifestations of disease. Concepts of biochemistry, physiology and cell biology are utilized in developing a dynamic approach to the study of the abnormal cell and its constituents. Basic mechanisms are stressed. (F)

7020 Tissue Culture: Methods and Applications. Cr. 3

Prereq: written consent or. Lecture and laboratory introduction to organ and cell culture techniques. (I)

7050 Introductory Hematology. Cr. 2

Prereq: consent of instructor. (Y)

7080 Special Topics in Pathology. Cr. 1-15

Prereq: consent of instructor. Frontier areas in experimental pathology and clinical laboratory sciences. Format may be lecture, laboratory, or discussion; topics to be announced in Schedule of Classes. (T)

7130 Neuropathology. Cr. 2

Prereq: PTH 7000, written consent of instructor. (Y)

7150 Pathology of Respiratory Tract. Cr. 2

Prereq: PTH 7000 and consent of instructor. (Y)

7180 Cardiovascular Pathology. Cr. 2

Prereq: PTH 7000; consent of instructor. Gross, microscopic and submicroscopic anatomy and pathophysiology of cardiovascular disease, both human and experimental. (Y)

7330 Pathology of the Kidney. Cr. 2

Prereq: PTH 7000 and consent of instructor. Techniques of preparing renal biopsies for light and electron microscopy and immunofluorescent studies; ultrastructure of normal kidney; physiology of kidney - acute and chronic renal failure; glomerular disease; pyelonephritis; vascular disease; and acute tubular necrosis and renal transplantation. (Y)

7340 Introduction to Electron Microscopy. Cr. 3

Prereq: ANA 7030 and written consent of instructor. Theory and practice of transmission electron microscopy applied to thin sections of biological tissues and freeze-fracture replicas. Scanning, electron microscopy; electron lens operation, and limits of resolution and qualitative image interpretation. Laboratory exercises. (B)

7450 Comparative Pathology. Cr. 3

Prereq: PTH 7000. Study of useful models of human disease in animal species. Spontaneous and experimentally-induced disease models from marine, laboratory, exotic (zoo), companion and domestic animal species. Lectures and laboratory. (I)

7600 Molecular Pathology Cr. 3

Prereq: MBG 7010 or equiv., written consent of instructor. Advanced graduate course on the molecular basis of several diseases and new developments in molecular biology research. (F)

7650 Diagnostic Molecular Pathology. Cr. 4

Prereq: PTH 7600 or equiv.; consent of instructor. Laboratory hands-on experience in molecular biology techniques required for molecular pathology and molecular diagnostic pathology research. (W)

7770 Clinical Biochemistry I. (BMB 7770) Cr. 2

Prereq: BMB 7010 or equiv. Practice of clinical biochemistry in a hospital or reference laboratory; background in direction of clinical chemistry laboratories. (I)

7790 Clinical Chemistry Laboratory Methodology and Administration. Cr. 5

Prereq: PTH 7770, 7780. Open only to majors in clinical chemistry programs of pathology and biochemistry. Rotation of students through areas of radioimmunoassay, general-special chemistry, emergency chemistry, and automated chemistry in Detroit Receiving Hospital/University Health Center laboratories. (B:S)

7890 Seminar. Cr. 1

Offered for S and U grades only. Open only to Ph.D. candidates in pathology. (Y)

7990 Directed Study in Clinical Pathology and Pathologic Anatomy. Cr. 2 (Max. 12)

Prereq: consent of instructor. (Y)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16

Open only to Ph.D. candidates in pathology. Offered for S and U grades only. (Y)

PEDIATRICS

Office: 1K40 Children's Hospital; (132)5-5870

Chairperson: Alan B. Gruskin

Professors

Yoav Ben-Yoseph, Ralph Cash, Harry Chugani, James W. Collins, Shermine Dabbagh, Adnan Dajani, Michael Epstein, Larry Fleischmann, Paul Giblin, Alan B. Gruskin, James Gutai, Joseph Kaplan, Peter Karpawich, Winston Koo, Jeanne Lusher, William Lyman, Michael Nigro, Enrique Ostrea, William Pinsky, Yaddanapudi Ravindranath, Arthur Robin, Norman Rosenberg, Ashok Sarnaik, Sharada Sarnaik, Seetha Shankaran, Thomas Slovis, Vasundhara Tolia, Indira Warriar

Clinical Professors

Zia Farooki, Susumu Inoue, Ruben Kurnetz, Jeffrey Maisels, Natalia Tanner

Associate Professors

Esteban Abella, Gary Amundson, Basim Asmar, Erawati Bawle, Mary Bedard, Kanta Bhambhani, Sandra Clapp, Barbara Cushing, Virginia Delaney-Black, Howard Fischer, Nancy Greger, Nestor Ilagan, Bharati Hukku, Richard Humes, Nadya Kazzi, Ganesh Konduri, Mary W. Lieh-Lai, Tej Mattoo, D. Gail McCarver, Kathleen Meert, Ellen Moore, Daniel C. Postellon, Robert Ross, Howard Schubiner, Michael Simon, Paul Swerdlow

Clinical Associate Professors

Bassem Bashour, Daniel Batton, George Blum, Bishara Freij, Herman Gray, James Heinsimer, Charles Inniss, Thaddeus Joos, Gerald Katzman, Ernest Krug, Chukwuma Nwaesei, Jane C.S. Perrin, Ali Rabbani, Thomas Riggs, Richard Ryszewski, M.C. Thirumoorthi, Nestor Truccone, Seetha Uthappa, Steven Waskerwitz, Elliott Weinhouse

Assistant Professors

Ibrahim Abdulhamid, Walid Abuhammour, Mary Lu Angelilli, Emmanuel Apostol, Yasser Awaad, Eric Ayers, Alcesa Backos, Cristie Becker, Marquita Bedway, David Benjamins, Nirmala Bhaya, Lisa Braun, James Chinarian, Diane Chugani, Minh Cruz, Edward Dabrowski, Daniel Eggleston, Deborah Ellis, Thomas Forbes, Yvonne Friday, Sudershan Grover, Rashmi Gupta, Cheryl Hack, Merlin Hamre, Hsiao-Nan Hao, Demetrios Haritos, Duane Harrison, Earl Hartwig, Sabrina Heidemann, Teresa Holtrop, John Hopper, Yvette Johnson, Vijaya Joshi, Stephen Knazik, Kameswari Konduri, Betty Koo, Thomas L'Ecuyer, Keh-Chyang Liang, Chuan-Hao Lin, Katherine Ling-McGeorge, Santhosh Madhavan, Sharon Marshall, Eileen McCormick, Kirk Mills, Anita Moncrease, John Ofenstein, Helen Papaioanou, John Peters, Dilli Ramesh, Karen Randall-Kristal, Robert Rothermel, Elizabeth Secord, Rosemary Shy, Patricia Siegel, Anju Sikand, Tajinder Singh, Susan Smietana, Lynn Smitherman, Susan Smolinske, Kalavathy Srinivasan, Gail Stewart, Mark Stout, David Svinarich, M. Victoria Tantengco, Jeffrey Taub, Debbie Toder, Helen Tigchelaar, Shauna Tindall, Charise Valentine, Rudolph Valentini, Julie Vincent, Ricardo Vinuya, Suzanne White, Sophie Womack, Kathryn Wright, Hashim Yar

Clinical Assistant Professors

Neal Alpiner, David Aughton, Susan Bellefleur, E. Dalton Black, Marshall Blondy, Avinash Chawla, James Delaney, Jeffrey Dembs, Rajendra Desai, Jay Eastman, Michael A. Facktor, P. Harold Finkel, Samina Furchad, Seymour Gordon, Ceres Guzman-Morales, Sheryl Hirsch, Paul Holtrop, Theresa Hsu, Karen Hufnagle, Ann-Mare Ice, Samir Jamil, Susan Kessler, Shahida Khan, Josef Kobiljak, Steven Kreshover, Hernando Lyons, Irving Miller, Jay Mitchell, Wallace Nichols, David Obudzinski, Cynthia Pryce, S. Bhimsen Rao, Robert Roman, Jorge Rose, William Rubinoff, Homer Ryan, Elliott Samet, Hadi Sawaf, Robert Scherer, Kathleen Schroeder, Tor Shwayder, Stanford Singer, Allen Sosin, Harvey Stein, Stephen Sturman, Mary Sylwestrzak, Sharon Tice, Gerald Timmis, Allan Weiner, Joyce Wolf, Melisande Womack, Petronio Yadao

Adjunct Associate Professor

Robert Bollinger

Adjunct Assistant Professors

Barbara Cash, Thomas Koepke, Andrew Maltz, Steven Spector

Clinical Instructors

Gyula Acsadi, David Dinger, Sisinio Ferandos, James Fordyce, Gayatri Garg, Rao Guthikonda, Seymour Krevsky, R. Bhanu Pillai, Mark Roth, Daniel Schnaar

Associates

A. Joseph Brough (Pathology), Jan Cejka (Pathology), Chung-Ho Chang (Pathology), Joseph Fischhoff (Psychiatry and Behavioral Neurosciences), Ronald Hines (Pharmacology), Linda Hryhorczuk (Psychiatry and Behavioral Neurosciences), Michael Klein (Surgery), Christopher Lee (Orthopedic Surgery), Patrick Long (Pathology), Larry Matherly (Pharmacology; Cancer Institute), Alan Perlmutter (Urology), Eugene Perrin (Pathology), Arvin Philippart (Surgery), M. David Poulik (Immunology and Microbiology), Joseph Reed (Radiology), David Rosenberg (Psychiatry and Behavioral Neurosciences), Julius Rutzky (Pathology)

Formal teaching by the Department of Pediatrics takes place in the patient units and clinics at Children's Hospital of Michigan during the third year of the medical school program. The aim of the student clerkship is to acquaint the student with the course of normal development, the common variations from normal patterns, and the reaction of the immature to illness. An effort is made to incorporate all aspects of childhood in the allotted time of study in order to have full participation by members of the surgical, orthopedic, and psychiatric staff. The Department of Pediatrics maintains contact with the student before the clerkship through contribution to the curriculum of basic science courses. The Department also provides an optional program of study during the fourth year.

The Fourth Year Elective Program offers the senior student an opportunity to gain experience in general pediatrics at a greater level of responsibility in patient care. The student assumes an increasing role as a primary caretaker under the supervision of the resident staff in advanced years of pediatric training. Experience in the pediatric subspecialties is also available to senior students. Thus, they are able to improve the level of their clinical skills and to obtain familiarity with the application of clinical and laboratory research techniques to the investigation of pathophysiology in a wide variety of children. Further information regarding programs may be obtained by writing to the office of the Chairperson of the Department.

PHARMACOLOGY

Office: 6374 Scott Hall; 577-1580

Chairperson: Bonnie F. Sloane

Professors

Gordon F. Anderson, Michael J. Bannon, Dharam P. Chopra, Saradindu Dutta, Matthew P. Galloway, Harold Goldman (Emeritus), Fusao Hirata, Ronald Hines, David Kessel, Bernard H. Marks (Emeritus), Roy B. McCauley, Raymond F. Novak, John Reiners, Eugene P. Schoener, Bonnie F. Sloane, Thomas Udhe, Arun Wakade

Associate Professors

Cristina Artalejo, George E. Dambach, Lawrence H. Lash, Husseini Manji, Mary Ann Marrazzi, Larry H. Matherly, D. Gail McCarver, David R. Schneider, Manuel Tancer, Hai-Young Wu, Akio Yamazaki, Russell K. Yamazaki

Assistant Professors

Nicholas Davis, Alexander Dizhoor, Zora Djuric, Gary Gintant, Tom Kocarek, Ellen Tisdale

Graduate Degrees

MASTER OF SCIENCE with a major in pharmacology

DOCTOR OF PHILOSOPHY with a major in pharmacology

The discipline of pharmacology is concerned with all aspects of the effects of drugs and chemicals on living systems. The field ranges from investigations at the molecular level to population studies on a global level. Drug development and evaluation make up an important part of pharmacology, but the field also includes the use of drugs as tools to probe the functions of macromolecules, cells, organs and even whole animals, and investigation of the harmful effects of chemicals on cells, organs and animals (toxicology). The breadth of interests encompassed by pharmacology provides excellent opportunities for individuals with strong interests and training in biology or chemistry to apply their knowledge to the understanding of fundamental biological processes.

Master of Science and Doctor of Philosophy Degrees

The Department of Pharmacology offers programs leading to the Master of Science degree and to the Doctor of Philosophy degree. In general, it is not recommended that students elect to register for a master's degree program, except under unusual circumstances. A joint Ph.D.-M.D. program is also available.

Admission to this program is contingent upon admission to the Graduate School (see page 16) and the Graduate Program of the School of Medicine (see page 283). Applicants to the graduate program of the Department of Pharmacology should have a background in one of the chemical or biological sciences. Students with diverse backgrounds will be considered individually if they have special competence related to one of the departmental areas of interest. Applicants are expected to provide scores from the Graduate Record Examination. A subject test is not required, but is helpful in making the admission decision. Personal interviews are recommended. Letters of inquiry should be directed to the Chair, Graduate Admissions Committee of the Department.

Scholarship: All course work must be completed in accordance with the regulations of the Graduate School and the School of Medicine governing graduate scholarship and degrees; see pages 16-30 and 283, respectively.

DEGREE REQUIREMENTS: Requirements for students enrolled in graduate degree programs are described in this bulletin on pages 20-30. Students are expected to demonstrate their understanding of basic biochemistry, physiology and pharmacology in order to pass their general examination for candidacy for the Ph.D. degree. For each student in the program a unique plan is constructed to allow utilization of previous educational experience and individual interests,

permitting the student to progress as rapidly as possible. The program consists of a small number of required courses, several research rotation projects, a qualifying examination, and a doctoral dissertation based on new and significant research findings. The research opportunities available for graduate students include the areas of biochemical, cellular, cardiovascular, autonomic, muscle, renal and clinical pharmacology; neuropharmacology; protein chemistry; molecular biology; cancer biology; carcinogenesis; cancer chemotherapy; drug metabolism; and environmental toxicology. The master's degree requires successful completion of a thesis based on original laboratory research.

Assistantships and Research

The Department has graduate assistantships and graduate research positions available for a number of qualified students. All students accepted into the graduate degree program are considered for financial assistance and no application forms are necessary for this purpose. Students on assistantships are advised to elect no more than twelve credits in a given semester. All students, whether or not they hold a fellowship or assistantship, are required to assist the graduate faculty in teaching and research activities as a component of their educational experience. For more complete information, students should consult or write the Chair, Graduate Admissions Committee, Department of Pharmacology, Wayne State University School of Medicine, 540 East Canfield, Detroit, Michigan 48201.

GRADUATE COURSES (PHC)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509

5030 Individual Research in Pharmacology. Cr. 2-5

Prereq: consent of instructor. Direct participation in laboratory research into the ways drugs affect cell processes, under the supervision of a departmental faculty adviser. Introduction to experimental protocol and current related scientific literature. (T)

6340 Chemical Basis of Pharmacology. (BIO 6840) (CHM 6340) Cr. 3

Prereq: CHM 2220 and 2230 and BIO 1510 or equiv. Mechanisms of action and metabolism of commonly-used drugs and toxic substances from the cellular level to whole biological systems. (Y)

6500 Drugs and the Addictive Process. Cr. 3

Introduction to general principles of drug action; specific pharmacologic, toxicologic, and pathologic effects of abused drugs; bio-psycho-social bases for addiction. (Y)

7010 Pharmacology Lecture. Cr. 4

Prereq: PSL 7010, PSL 7030, BMB 7010. Introductory presentation of drug actions on living tissue. (W)

7110 Cancer Biology Survey I. (C B 7110) Cr. 2

Basic process relating to the initiation of growth and spread of tumors. Introduction to theory and practice of treatments. Epidemiology, prevention, and studies of cellular changes at the molecular level which lead to cancer. (B)

- 7120 Cancer Biology Survey II. (C B 7120) Cr. 2**
Prereq: PHC 7110. Continuation of PHC 7110. (Y)
- 7190 (ANA 7190) Neuroscience Survey. (BIO 7190) (I M 7190) (PSL 7190) (PSY 7190) Cr. 3**
A substantive overview of neuroscience as a multifaceted discipline; general properties of brain cells, organization and function of nervous system, and nervous system in behavior and pathology. (F)
- 7220 Cell and Molecular Biology of Cancer Development. (C B 7220) (MBG 7120) Cr. 3**
Prereq: PHC 7210; BMB 7010 or CHM 7620 or equiv. Detailed analysis of neoplastic cells at cellular and molecular levels. Emphasis on critical genes in cancer development, nature of changes in these genes and how genetic changes result in altered cellular phenotypes that are involved in malignancy. (B)
- 7240 Principles of Cancer Chemotherapy. (C B 7240) Cr. 2**
Prereq: BMB 7010 or CHM 7620, or equiv. Concepts relating tumor biology and the biochemistry and pharmacology of anticancer agents presented in the context of specific animal and human tumors. (Y)
- 7250 (C B 7250) Cancer Control. Cr. 2**
Introductory lecture on nature of cancer control activities and the issues they raise, including class discussions; lectures by researchers in chemo- and dietary prevention, screening, symptom control, care and support, and rehabilitation; summary overview. (B)
- 7320 Cancer: Organ System Survey II. (C B 7320) Cr. 2**
Prereq: PHC 7310. Continuation of PHC 7310. (Y)
- 7410 (MTX 7010) Principles of Toxicology. Cr. 3**
Prereq: CHM 2220 and 2230 and BIO 1510 or equiv. Basic concepts and principles of toxicology, including toxicity of major classes of chemicals (pesticides, solvents, metals) and organ systems (renal, immune, digestive, neuro and respiratory) affected. (F)
- 7530 Neuropharmacology. Cr. 3**
Prereq: PHC 7010. Synthesis and release of neurotransmitters, analysis of transmitter-receptor interaction and cellular response, emphasis on peripheral autonomic systems. Offered alternate years. (B)
- 7580 Biochemical Pharmacology. Cr. 3**
Prereq: introductory biochemistry, PHC 7010. Current topics in biochemical pharmacology. Offered alternate years. (B)
- 7650 Advanced Topics in Pharmacology. Cr. 1-6 (Max. 6)**
Prereq: PHC 7010; BMB 7010; PSL 7010 and PSL 7030. Modules of instruction in sharply-defined areas of current research in pharmacology and related disciplines. Each module will cover fundamental concepts, essential knowledge base, research protocols and techniques, and future issues. (Y)
- 7700 Recent Developments in Pharmacology. Cr. 1-4 (Max. 12)**
Prereq: consent of instructor. Selected topics and readings in pharmacology. (T)
- 7710 Individual Studies in Pharmacology. Cr. 1-8 (Max. 8)**
Prereq: consent of instructor. Offered for S and U grades only. Open only to pharmacology M.S. and Ph.D. students. (T)
- 7890 Seminar. Cr. 1 (Max. 12)**
Prereq: consent of instructor. Offered for S and U grades only. Open only to pharmacology M.S. and Ph.D. students. Assigned readings and student presentation; faculty and outside speakers. (T)
- 7996 Research. Cr. 1-20 (Max. 30)**
Prereq: consent of instructor. Special research topics in specified areas arranged with individual faculty members. (T)
- 8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)**
(T)
- 9999 Doctoral Dissertation Research and Direction. Cr. 1-16 (30 req.)**
(T)

PHYSICAL MEDICINE and REHABILITATION

Office: 821 Rehabilitation Institute of Michigan; (132)5-9878
Chairperson: Bruce M. Gans

Professors

Bruce M. Gans, Steven R. Geiringer, Mitchell Rosenthal

Clinical Professors

Joseph C. Honet, Myron M. LaBan

Adjunct Professors

Louis Amundsen, Susan Esdaile

Associate Professor

Bruce E. Becker

Associate Professors, Full-Time Affiliate

Marcel Dijkers, Michael L. Kimbarow, Peter Lichtenberg, Philip J. Mayer, Scott Millis

Clinical Associate Professors

Gary Chodoroff, Maury R. Ellenberg, Robert L. Joynt, Kenneth Richter

Assistant Professors

Steven R. Hinderer, Nancy R. Mann

Assistant Professors, Full-Time Affiliate

Kertia Black, Edward Dabrowski, Nancy DeSantis, Bertram Ezenwa, Norman Fichtenberg, Dennis S. Giannini, David Gordon, Robert Guenther, Wook Kim, Banwari Ladha, Christina Lee, Susan MacNeill, Mildred Matlock, Shelley Nepa, Edward Nieshoff, Steven H. Putnam, William Restum, Joseph H. Ricker, Daniel Ryan, Madan Telikicherla, Marilyn Wayland, Harry White, Ross D. Zafonte

Clinical Assistant Professors

John J. Bernick, Steven C. Hyman, M. David Jackson, Dong W. Lee, Sung Jin Lim, Joseph Meerschaert, Mark F. Rottenberg, Geoffrey K. Seidel, Ronald Taylor

Adjunct Assistant Professors

Kin Dunleavy, Nancy McNevin

Clinical Instructor

Syed Iqbal

Graduate Degree

MASTER OF SCIENCE with a major in Rehabilitation Sciences

The Department of Physical Medicine and Rehabilitation encourages the student to acquire knowledge of the patient as a person, not merely of his/her disease. The student is taught to assess the neuromuscular and musculoskeletal systems and to manage disorders of these systems. In addition, a concept of rehabilitation is presented which considers not only the disease or injury that leads to chronic disability, but emphasizes the coordination of effective therapies and forces which will ameliorate the social, psychological and vocational problems created by the impairment.

Teaching is conducted through lectures, demonstrations, staff conferences and seminars, with the major emphasis upon office practice

instruction. Clinical instruction is provided at the Rehabilitation Institute of Michigan, the principal teaching facility of the Department, and at the following institutions: Harper Hospital, Grace Hospital, Detroit Receiving Hospital, Sinai Hospital, Children's Hospital, and Veterans' Administration Hospital.

Master of Science with a Major in Rehabilitation Sciences

The goal of this program is to prepare a physiatrist (physician specialist in physical medicine and rehabilitation) in the expanded roles of clinician-researcher and clinician-administrator. Students in this program will primarily be residents in physical medicine and rehabilitation. The curriculum will enable graduates to function as competent practitioners in the care of persons with disabilities. In addition, it will develop core competencies in the areas of medical rehabilitation research and rehabilitation administration.

Admission is contingent upon admission to the Graduate School and the graduate programs of the School of Medicine; see pages 16 and 283, respectively. Admission to the program is determined by the Admissions Committee of the faculty of the Department. Applicants must have completed an M.D. or D.O. degree at an accredited institution and have been accepted into the residency training program in physical medicine and rehabilitation; and demonstrate a record of interest and involvement in research activities and/or leadership roles. Admission to this program occurs at the Post Graduate Level Year II, the level at which physicians enter residency in the Department.

Scholarship: All course work must be completed in accordance with the regulations of the Graduate School and the School of Medicine governing graduate scholarship and degrees, see pages 16-30 and 283, respectively.

DEGREE REQUIREMENTS: The Master of Science with a major in Rehabilitation Sciences is offered as either a *Plan A* or *Plan B* option, requiring a total of thirty-four credits. The *Plan A* (thesis) option requires twenty-six credits in course work plus an eight-credit thesis. The *Plan B* (project) option requires twenty-six credits in required course work, four elective credits, and a four-credit project.

GRADUATE COURSES (R S)

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7010 Survey of the Field of Physical Medicine and Rehabilitation. Cr. 1

Social, political, technical, and economic factors that lead to the creation and current condition of the field of medical rehabilitation and the specialty of physical medicine and rehabilitation. (Y)

7020 Principles of Clinical Rehabilitation I. Cr. 1

Basic evaluation methods and treatment modalities utilized with chronic disease states, physical disabilities, and musculoskeletal dysfunction. Research methodology relevant to clinical studies. (F)

7030 Principles of Clinical Rehabilitation II. Cr. 1

Prereq: R S 7020. Continuation of R S 7020. (S)

7220 Psychological, Social and Vocational Aspects of Disability. Cr. 2

Primary psychological, social and vocational issues which affect the rehabilitation of persons with physical disabilities. Assessment of need and identification of strategies useful in meeting those needs; current research and clinical practice. (B)

7240 Rehabilitation Research Methods. Cr. 3

Major concepts of medical rehabilitation research methodology; use of research results and concepts to evaluate information for application in the practice of research. (Y)

7250 Rehabilitation Services Organization. Cr. 3

Lecture and discussion on theories and concepts of medical administration: planning, marketing, operations, fiscal and personnel management, quality assessment and evaluation, as applied to rehabilitation services delivery. (Y)

7260 Technical and Engineering Rehabilitation Research Methods. Cr. 3

Prereq: R S 7240, consent of instructor. Understanding the basic principles of research and clinical instrumentation. (S)

7270 Social, Behavioral, and Psychological Rehabilitation Research Methods. Cr. 3

Prereq: R S 7240; consent of instructor. Advanced study of research and statistical methods commonly used in research on social, behavioral, and psychological aspects of rehabilitation. (S)

7530 Applied Biophysics and Electrophysiology. Cr. 3

Prereq: M.D. or D.O. degree; consent of instructor. Comprehensive review of the application of principles regarding biologic effects of physical agents and modalities, and the electrophysiology of the musculoskeletal systems. (B)

7540 Applied Exercise Physiology and Kinesiology. Cr. 3

Prereq: consent of instructor, M.D. or D.O. degree. Comprehensive review of application of principles of the biology of human performance and skeletal structure and function. (B)

7890 Seminar in Rehabilitation Administration. Cr. 3

Macro and micro aspects of rehabilitation administration and management. (Y)

7990 Directed Study. Cr. 1-4 (4 req.)

Prereq: M.D. or D.O. degree; consent of instructor. Master's project. Individual direction in reading and research; complete review of problem area relevant to PM&R (clinical or administrative). May include experimental investigation. Comprehensive written report required. (T)

7998 Field Studies in Physical Medicine and Rehabilitation Research. Cr. 3

Prereq: consent of instructor; M.D. or D.O. degree. Practicum of M.S.R.S. program, conducted at a research setting or administrative setting; to integrate and incorporate material from core courses and concentration courses. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: M.D. or D.O. degree; consent of instructor. Research and written presentation; testing of specific hypothesis dealing with method, concept, or data. (T)

PHYSIOLOGY

Office: 5374 Scott Hall; 577-1520

Chairperson: John W. Phillis

Professors

Paul C. Churchill, Joseph C. Dunbar, Jr., Piero P. Foa (Emeritus), Richard R. Gala (Emeritus), Felix T. Hong, David M. Lawson, Eberhard F. Mammen, Lowell E. McCoy, Jan Nyboer (Emeritus), David G. Penney, John W. Phillis, Jeffrey L. Ram, James A. Rillema, Daniel A. Walz, Blaine C. White

Associate Professors

Ricardo A. Brown, Stephen E. DiCarlo, Donal S. O'Leary, Debra F. Skafar, Dixon S. Woodbury, Douglas R. Yingst

Associate Professor — Research

Assia C. Shisheva

Clinical Professor

Allen Silbergleit

Adjunct Associate Professors

Anil K. Bidani, Steven Keteyian, David R. Pieper

Adjunct Assistant Professor

Michael D. Wider

Professor, Full-Time Affiliate

Barry A. Franklin

Associates

Samuel C. Brooks (Biochemistry), Elizabeth J. Dawe (Surgery), Donald DeGracia (Emergency Medicine), Michael P. Diamond (Obstetrics and Gynecology), George Grunberger (Internal Medicine), James Kaltenbach (Otolaryngology), Joseph Levy (Internal Medicine), William Lockette (Internal Medicine), Patricia Lynne-Davies (Internal Medicine), Franklin McDonald (Internal Medicine), Jerry A. Mitchell (Anatomy), Alexander Nakeff (Internal Medicine), Howard Normile (Psychiatry and Behavioral Neurosciences), John P. Ofenstein (Pediatrics), Jacob D. Peuler (Internal Medicine), Rick J. Schiebinger (Internal Medicine), James R. Sowers (Internal Medicine), Marappa G. Subramanian (Obstetrics and Gynecology), Jerrold Turner (Pathology)

Graduate Degrees

MASTER OF SCIENCE with a major in Physiology

DOCTOR OF PHILOSOPHY with a major in Physiology

Physiologists study the functions of living organisms or their parts, with emphasis on the characteristics of healthy, as opposed to diseased, tissues. Increasingly, the discipline has focussed on the properties of single cells and their subcellular components and, in this respect, has much in common with molecular biology. However, whether at the level of the single cell or the whole organism, the aim of the physiologist is to understand those complex interrelationships between body tissues.

Master of Science and Doctor of Philosophy Degrees

The Department of Physiology offers programs leading to the Master of Science and Doctor of Philosophy degrees. Students planning a career in teaching or research in physiology are advised to complete the requirements for the Doctor of Philosophy degree. The degree of Master of Science is of limited practical use in that it may not qualify students for a suitable professional position.

Admission to the program is contingent upon satisfying the requirements of the Graduate School (see page 16) and the Graduate Programs of the School of Medicine (see page 283). In addition, applicants for the Doctor of Philosophy degree are expected to have a personal interview with the members of the departmental graduate committee.

Scholarship: All course work must be completed in accordance with the regulations of the Graduate School and the School of Medicine governing graduate scholarship and degrees; see pages 16-30 and 283, respectively.

DEGREE REQUIREMENTS: The overall requirements for the Master of Science and Doctor of Philosophy degrees are set forth in the Graduate School section of this bulletin. The master's degree is offered under Plan A only (as defined on page 27), for which the student must submit a thesis based on original research. Candidates for the Ph.D. are expected to conduct original research and prepare a dissertation commensurate with thirty credits of dissertation direction. The research supporting the dissertation must be judged suitable for publication in one of the current scientific journals. This latter requirement may, in exceptional cases, be waived by the Chairperson of the Department.

Assistantships and Research

The Department has graduate assistantships and graduate research positions available for a limited number of qualified students. All doctoral students accepted into the program are considered for financial assistance and no application forms are necessary for this purpose. Students on assistantships are advised to elect no more than twelve credits in a given semester. All students, whether or not they hold a fellowship or an assistantship, are required to assist the graduate faculty in research and teaching activities as a component of their educational experience. For more complete information on fellowships, students should consult or write the Graduate Officer, Department of Physiology, Wayne State University School of Medicine, Gordon H. Scott Hall of Basic Medical Sciences, 540 East Canfield, Detroit, Michigan 48201.

GRADUATE COURSES (PSL)

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The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509

5010 Individual Research. Cr. 2-5

Prereq: undergraduate background in biology and chemistry. Direct participation in laboratory research in the physiological sciences under the supervision of a departmental faculty adviser. Introduction to experimental protocol and current related scientific literature. (T)

5550 Physiologic Anatomy. Cr. 3

Prereq: biology background preferred. Not open to graduate anatomy students. Basic concepts of anatomy as they relate to physiologic function. Intended to give an anatomy foundation for graduate level

physiology courses. Material fee as indicated in the Schedule of Classes. (S)

5680 Basic Endocrinology. (BIO 5680) Cr. 3.

Prereq: PSL 3220 or BIO 3400 or equiv. or coreq: PSL 7010. Basic description of the human endocrine system, the endocrine control of several physiologic processes (growth, development, metabolism and reproduction), and common endocrine disorders.

6010 Physiology of Exercise. (P E 6310) Cr. 3

Prereq: consent of instructor. Muscular, metabolic, cardiovascular, and respiratory adjustments to acute and chronic exercise in health and disease, including body composition and weight control, nutritional consideration, and the effects of different environments on exercise performance. (F)

7010 Basic Graduate Physiology Lecture I. Cr. 4

Prereq: organic chemistry, introductory biology and physics, graduate program enrollment. Introduction to basic human physiology. (F)

7020 Basic Graduate Physiology Laboratory I. Cr. 3

Prereq: organic chemistry, introductory biology and physics, graduate program enrollment; consent of instructor. Open only to physiology majors. Introductory laboratory exercises to measure cell and membrane function; neuronal activity; electrophysiology; and hormonal actions. (F)

7030 Basic Graduate Physiology Lecture II. Cr. 4

Prereq: organic chemistry, introductory physics, biology background; current enrollment in graduate degree program. Functional mechanisms of the human body. (F,W)

7040 Basic Graduate Physiology Laboratory II. Cr. 3 (Max. 6)

Prereq: enrollment in graduate program in physiology; coreq: PSL 7030. Experimental physiology of organ systems. Two semester course; two credits each semester. (F,W)

7050 Introductory Biostatistical Methods. Cr. 4

Prereq: a working knowledge of elementary algebra. Presentation of basic statistical techniques routinely used in the analysis of biomedical data. Practical use of a typical packaged statistical computer program (SPSS and/or MIDAS) incorporated into the problem-solving aspects of the course. (F)

7060 Current Literature in Physiology. Cr. 1

Open only to physiology graduate students. Students make oral presentations, followed by student and faculty discussion. (Y)

7090 Essays in Physiology. Cr. 1

Prereq: enrollment in physiology graduate program; coreq: PSL 7010 or 7030. Students write topic-specific essays based on examination content in lecture courses PSL 7010 or PSL 7030. (F,W)

7190 (ANA 7190) Neuroscience Survey. (BIO 7190) (I M 7190) (PHC 7190) (PSY 7190) Cr. 3

Offered for S and U grades only. Interdisciplinary overview of principles of neurosciences. (F)

7400 Advanced Respiratory Physiology. Cr. 2

Prereq: PSL 7030 and 7040. Advanced lectures/demonstrations of gas exchange problems for computer simulation by students. Each year course will be devoted to one aspect of respiratory function, e.g., mechanics, gas exchange, regulation. (B:S)

7500 Developmental Physiology. Cr. 3

Prereq: general physiology, embryology. A study of organ physiology from the developmental viewpoint. (F)

7550 Advanced Renal Physiology. Cr. 2

Prereq: PSL 7010 or equiv. A detailed study of the physiological mechanisms promoting homeostasis of the body fluid volumes and ionic composition in the mammal. (F)

7590 Blood. Cr. 3

Prereq: PSL 7010, 7030. Details of blood enzymology including hemostasis, blood coagulation, complement system, and fibrinolysis. (W)

7600 Advanced Cardiovascular Physiology. Cr. 2

Prereq: PSL 7010. Basic principles of heart dynamics and control techniques in measurement of cardiac function. (F)

7640 Cell Physiology. Cr. 3

Correlations between ultrastructure, biochemistry and functions in normal and pathological cells. (W)

7660 Neurophysiology. Cr. 3

Prereq: PSL 7010. Anatomy and physiology of the neuron and the mammalian nervous system. Correlations of central nervous system functions and electrophysiology. (F)

7680 Endocrinology. Cr. 4

Prereq: PSL 7010 and 7030. A detailed emphasis on current research. Student participation encouraged; each student required to present a one hour lecture. (W)

7880 Special Problems in Physiology. Cr. 1-8 (Max.8)

Prereq: plan of study. Topics individually arranged with faculty. (T)

7890 Seminar. Cr. 1 (Max. 6)

For graduate students in physiology. Participation in weekly departmental seminars. (F,W)

7996 Arranged Research. Cr. 1-15 (Max. 15)

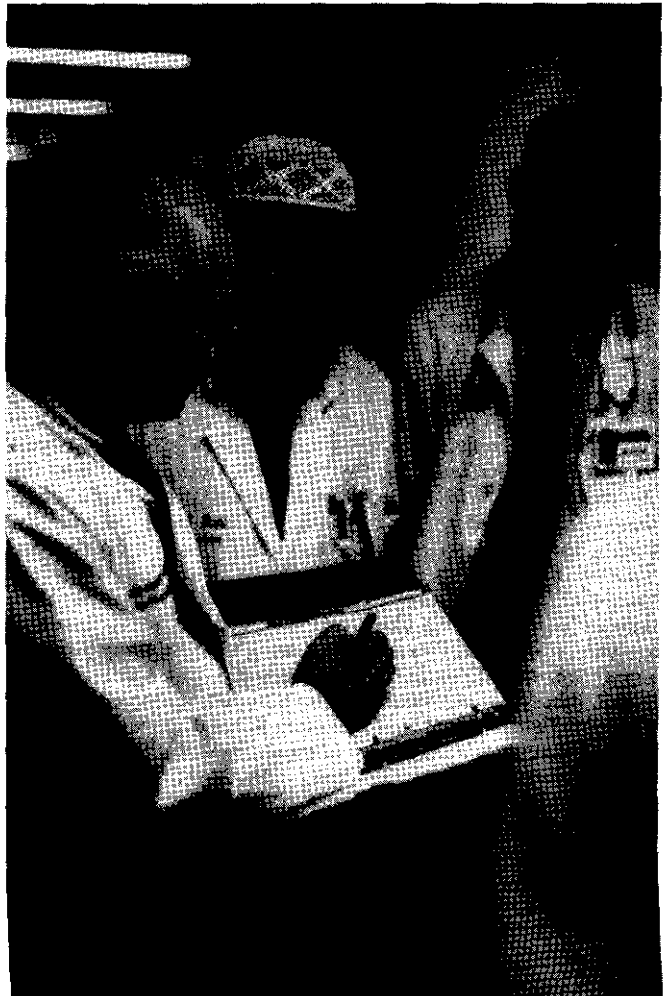
Prereq: plan of study. Graduate level experiences in research techniques. Special research topics in specified areas arranged with individual faculty member. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Open only to graduate students in physiology. (T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16 (30 req.)

Open only to graduate students in physiology. Offered for S and U grades only. (T)



PSYCHIATRY and BEHAVIORAL NEUROSCIENCES

Office: 9B University Health Center; 577-1808

Chairperson: Thomas W. Uhde

Professors

Rodrigo Andrade, Richard Balon, Michael Bannon, Barnaby Barratt, Beth Ann Brooks, Donald Coscina, Joseph Fischhoff (Emeritus), Robert Freedman, Matthew P. Galloway, James Granneman, Chris-Ellen Johanson, Gregory Kapatos, Donald Kuhn, Peter LeWitt, Helene Lycaki, William Lyman, Robert Pohl, Arthur Robin, Norman Rosenzweig (Emeritus), Garald Sarwer-Foner, Charles Schuster, Natraj Sitaram, Thomas W. Uhde, Alice Young

Clinical Professors

Elissa Benedek, Alexander Grinstein, Elliott Luby, Alan Rosenbaum, Nathan Segel, Emanuel Tanay

Adjunct Professors

Naomi Breslau, Timothy Roehrs, Thomas Roth

Associate Professors

Bernard Chodorkoff, Marvin Hyman, Lawrence Jackson (Clinical), Norma Josef (Clinical), Hussein Manji, Robert G. Niven (Clinical), John M. Rainey, David Rosenberg, Ralph Rubenstein (Clinical), Eugene Schoener, Howard Schubiner, Thomas M. Sullivan, Manuel Tancer, Barry Tanner (Clinical), Ronald E. Trunsky

Clinical Associate Professors

Ronald M. Benson, Leon Berman, Victor Bloom, Dale Boesky, Melvin Bornstein, Lynn Campbell, Marvin Margolis, Aurelio Ortiz, Carol E. Pearson, Leonard Piggott, Kenneth Pitts, Richard Ruzumna, Frederick Shevin, Mayer Subrin, Max Warren, Morris Weiss

Adjunct Associate Professors

Robert Berman, Diane Brown, Tamara Ferguson, Robert A. Levine, Ronald Lewis, Jack Novick

Assistant Professors

Cynthia Arfken, Stephen Aronson (Clinical), Hanumaiah Bandla (Clinical), Marieta Bautista (Clinical), Joseph Bebchuk (Clinical), Jesse Bell, Richard Berchou, Victoria Binion (Clinical), Richard Bowles (Clinical), Michael Butkus, Elaine Carroll (Clinical), Emmanuel Casenas (Clinical), Margaret Casey (Clinical), Archana Chaudhry (Research), Guang Chen (Research), Stephen Chermack, William Clark (Clinical), Shaun Cooper (Clinical), Elizabeth Corby (Clinical), James Dillon (Clinical), John DeLuca, John Dooley, Karen Downey (Clinical), Deborah Ellis (Clinical), Darren Fuerst (Clinical), Philip Furspan (Research), Stanislaw Golec, Debra Glitz, John Grabowski, Margret Greenwald (Research), Mark Greenwald, Abdul Hafeez (Clinical), Melinda Henderson, Shuja Hague (Clinical), Lisa Haston-Fuller (Clinical), Kei Hirayama (Research), Linda Hotchkiss (Clinical), Sunday Iechukwu (Clinical), Richard Jackson (Clinical), K.C. Josef, Zahra Kashef, Pamela Keenan, Shanin Koegler (Clinical), Vijayalakshmi Kologi (Clinical), Thomas Kuhn, Lynn Kuttner (Clinical), Leonard Lachover, Jimmie P. Leleszi, Venkata Lingam (Clinical), Dana MacMillan (Clinical), Antoun Managas (Clinical), Steven McArthur (Clinical), Thomas McCullough (Clinical), Sonya McKee (Clinical), Orlena Merritt-Davis (Clinical), Georgia Michalopoulou (Clinical), G. Robert Miller (Clinical), Gregory Moore, Kathleen Moore (Clinical), Hiten Patel, Gloria Pitts (Clinical), Lester Potempa (Clinical), Chilakamarri Ramesh (Clinical), Santosh Rastogi, Abdul Riaz, Harvey Rosen, Donald G. Ross, Robert Rothermel (Clinical), Kory Schuh, Leslie Schuh, Roh-Yu Shen (Research), Heminder Singh (Clinical), Mary Ann Timmis (Clinical), Shauna Tindell (Clinical),

Patricia Siegel (Clinical), Patrick Tombeau, Lad Videgar (Clinical), Jamie Warbasse, Daniela Whittman (Clinical), Jacqueline Wilson (Clinical), Suzanne Woodward, Nigar Yousuf (Clinical), Lori Zeman

Clinical Assistant Professors

Jay Abel-Horowitz, Irwin P. Adelson, Jean Alce, Seymour Baxter, Larry Berkower, Raman Bhavsar, Sander Breiner, Michael Burnstein, Sung Ran Cho, Michael Colman, Cassius DeFlon, Harvey Falit, Saul Forman, Michael Freedman, John Gilkey, Kemal Goknar, Rosalind Griffin, Raul Guerrero, Bal K. Gupta, Louis Hoffman, Linda Hryhorczuk, Cassandra Klyman, Bernard Kole, Paul Lessem, Alvin B. Michaels, Thomas Park, Philip J. Parker, Michele Reid, Leonard Rosen, Leon Rosenthal, Rahul Sangal, Gerald Shiener, Donald Silver, Edward Siriban, Evangeline Spindler, Marvin L. Starman, Claire Stroker, Harold Taylor, Rao Vallabhaneni, Habib Vaziri, Elliot Wagerheim, Jolyn Wagner

Adjunct Assistant Professors

Nancy Blieden, C. Theresa Cali, Kay B. Campbell, Valeria Colombatto, Randall Commissaris, Edward Czarnecki, Amy Dennis, David Dietrich, Sheila Eaton, Deanna Holtzman, Nancy Kulish, Judith S. Ruzumna, Etta L. Saxe, Walter Sobota, Robert M. Wills

Instructors

James Bow, Ashok Shah

Clinical Instructors

Tariq Abbasi, Nili Benazon, Suresh Bilolikar, Lawrence J. Hatzenbeler, Duncan Magoon, Miriam Medow, David Vincent, Kathiravelu Thabolingam

Adjunct Instructors

Joy Ensor, Glenn Good, William Nixon

Associates

Safwan Badr, Diane Chugani, Harry Chugani, Paul Walker

Graduate Degrees

MASTER OF SCIENCE with a major in Psychiatry and Behavioral Neurosciences

DOCTOR OF PHILOSOPHY with a major in Cellular and Clinical Neurobiology (For additional information, see page 286.)

Undergraduate Education

The teaching program in the Department of Psychiatry and Behavioral Neurosciences provides the medical student with an awareness of psychiatric problems as they are experienced in the practice of medicine, regardless of whether the student plans a general or specialty practice. Students become familiar with the social, psychodynamic, behavioral, and biological factors involved in the development of personality, emotional conflicts and psychopathology. Additionally, they are taught to recognize the importance of the emotional aspects in the doctor-patient relationship. The Department of Psychiatry and Behavioral Neurosciences is active in the teaching of the medical student throughout four years of training with a required clinical clerkship occurring in the third year. Clinical psychiatry rotations are conducted at Detroit Receiving Hospital, Harper Hospital, Providence Hospital, Sinai Hospital, University Psychiatric Centers, and Veterans' Administration Medical Center.

Assistantships

The Department has graduate assistantships available for a number of qualified students. All students accepted into the graduate program are considered for financial assistance, and no separate application forms are necessary for this purpose. For further information, contact: Graduate Officer, Cellular and Clinical Neurobiology Program, Department of Psychiatry and Behavioral Neurosciences,

GRADUATE COURSES (PYC)

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The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

7010 Neurobiology I. Cr. 3

First part of a two-semester in-depth study of nerve cells, their organization into functional circuits and their mediation of normal and aberrant behaviors. (F)

7020 Neurobiology II. Cr. 3

Second part of a two-semester in-depth study of nerve cells, their organization into functional circuits and their mediation of normal and aberrant behaviors. (W)

7510 Neurochemistry of Monoamine Containing Neurons. Cr. 3

Prereq: PYC 7010 and 7020 recommended, or consent of instructor. Review of the functional neurobiology of catecholamine and indoleamine containing neurons in mammalian CNS. Emphasis on relationship among biochemical, physiological, and anatomical characteristics of these neurons. Putative role of these neurons in neurological and psychiatric disorders. (B)

7520 Molecular Biological Approaches in Neurobiology. Cr. 3

Prereq: PYC 7010 and 7020 recommended, or consent of instructor. In-depth analysis of molecular biological approaches used to probe nervous system function. Emphasis on recent methodological developments applied to brain analyses, including cell-specific monoclonal antibodies and cloning techniques. (B)

7540 Current Topics in Neurophysiology. Cr. 3

Prereq: PYC 7010, 7020, or consent of instructor. Comprehensive overview of neurophysiology with emphasis on contemporary techniques of neuronal recording, ionic mechanisms of membrane conductance and neurotransmitter modulation of neuronal activity. (B)

7550 Signal Transduction in Neuronal Tissues. Cr. 3

Prereq: PYC 7010 and 7020, or consent of instructor. Modern concepts of the biochemical and molecular biological bases of neuronal communication. (B)

7560 Advanced Topics in Behavioral Pharmacology. Cr. 3

Prereq: PYC 7010 and 7020 recommended, or consent of instructor. Overview of behavioral studies of learning and memory, drug effects on behavior, and animal models of neuropsychiatric diseases. (B)

7570 Clinical Psychiatry: Current Issues in Clinical Neuroscience Research. Cr. 3

Prereq: M.D. degree, admission to Master of Science in psychiatry program. Clinical research in psychiatry and behavioral neuro-

sciences; experimental design. Lectures, seminars, discussion with faculty. (Y)

7580 Substance Abuse. Cr. 3

Pharmacological principles, research methods, and scientific data regarding understanding and control of substance abuse. Epidemiology, etiologic factors, research methods and ethics, health consequences, prevention strategies, psychiatric diagnosis and comorbidity, treatment, policy issues and controversies. (Y)

7890 Research Seminar. Cr. 1 (Max. 8)

Presentations by clinical and basic research staff and by the program's graduate students. (T)

7990 Directed Study. Cr. 1-6 (Max. 10)

Independent study under the guidance of an advisor, including complete review of a problem area immediately relevant to cellular or clinical neurobiology. (T)

7996 Research Problems. Cr. 1-10 (Max. 20)

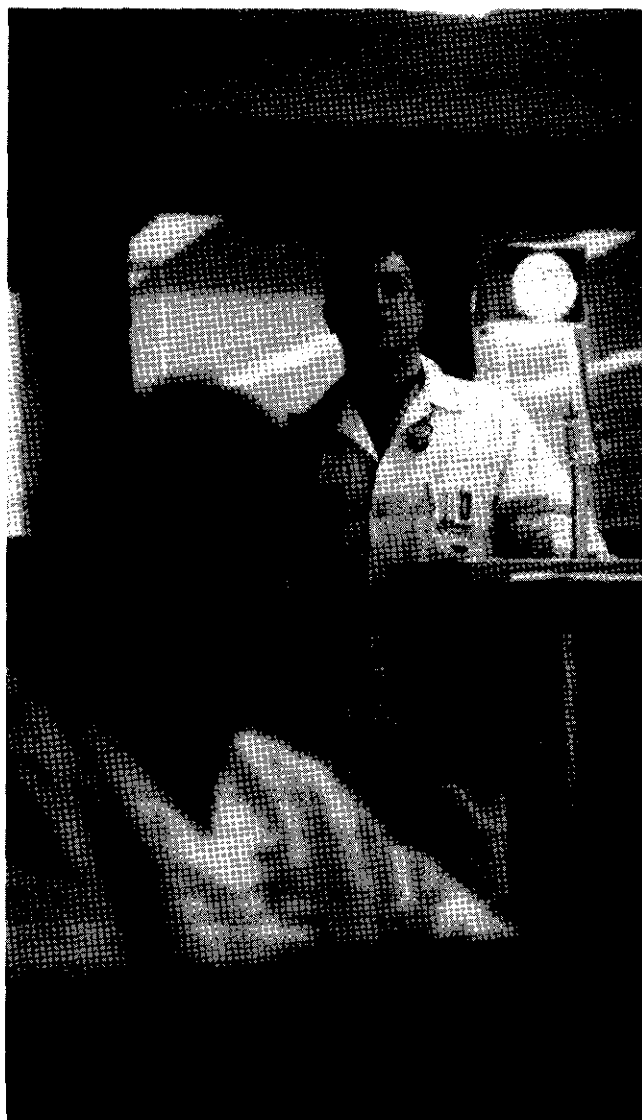
Directed laboratory rotation for graduate students in the Cellular and Clinical Neurobiology program. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (Max. 8)

Preparation in writing of a scholarly proposal and thesis. (T)

9999 Doctoral Dissertation Research. Cr. 1-16 (Max. 30)

Prereq: doctoral candidacy in CCN. (T)



RADIATION ONCOLOGY

Office: First Level, University Health Center; (132)5-9207
Chairperson: Arthur T. Porter

Professors

James Fontanesi, Jeffrey Forman, Arnold M. Herskovic, Kenneth V. Honn, Richard Maughan, Don Ragan, Colin G. Orton, Arthur T. Porter

Adjunct Professors

Farideh Bagne, Henry Blosser, Avraham Raz

Associate Professors

Amr Aref, Laurie Gaspar, John Feldmeier, Ihn Han, James M. Onoda, Jacek Wierzbicki

Clinical Associate Professors

Duke K. Bahn, Donald Bronn, Miljenko Pilepich

Adjunct Associate Professor

Surendra Rustgi

Assistant Professors

Wayne Court, Syamala Devi, Patrick McDermott

Clinical Assistant Professors

Basil Considine, Sue J. Han, James Herman, Jwong H. Ling

Adjunct Assistant Professors

Mohan Chelladurai, Archana Somnay

Instructors

Gary Ezzell, Mark Yudulev

Clinical Instructor

Hang S. Chang

Adjunct Instructors

Janice Campbell, Suzie Garzon, Tracy King, R. Lieto, C. Mesina, James Spicka, C. Warmelink

Associates

Diane Chadwell (Allied Health), Jeff Evelhoch (Radiology), Barbara Orton (Allied Health), Bonnie Sloane (Pharmacology), John Taylor (Biological Sciences), F. Valeriotte (Medicine), Lucia Zamorano (Neurosurgery), Alkis Zingas (Radiology)

Graduate Degrees

MASTER OF SCIENCE with a major in radiological physics

DOCTOR OF PHILOSOPHY with a major in medical physics

The Radiation Oncology Department is responsible for the day-to-day care of cancer patients undergoing radiation therapy. The staff is actively involved in clinical research including participation in national studies and in the teaching all aspects of cancer treatment and research throughout the School of Medicine and hospitals. Members of the Department staff are also active in radiobiology research. Summer clerkships in radiation therapy are available. Medical students considering a specialization in radiation therapy should also elect to take courses in internal medicine, radiology and radiation physics. The residency program available in Radiation Oncology pre-

pares candidates for certification in therapeutic radiology by the American Board of Radiology.

Master of Science and Doctor of Philosophy Degrees

The Department of Radiation Oncology collaborates with the Department of Radiology to offer courses of study leading to a Master of Science degree in Radiological Physics or a Doctor of Philosophy degree in Medical Physics. (See the Department of Radiology for courses, page 317.) Through courses, seminars, clinical internships, and laboratories, the programs provide experience in the following areas:

Diagnostic Radiology: Calibration, acceptance testing and quality assurance for a number of devices used in the fields of conventional radiology, ultrasound, digital radiology, and computed tomography (CT).

Magnetic Resonance: Principles of nuclear magnetic resonance (NMR); NMR spectroscopy; imaging in biology and medicine; instrumental design, operation, and maintenance; cryogen management; and the role of the medical physicist in clinical applications of NMR.

Nuclear Medicine: Assay of radionuclides, acceptance testing, quality assurance, and computer techniques for a variety of nuclear medicine equipment including emission tomography.

Radiation Dosimetry: Exposure, kerma, absorbed dose, dose equivalent, Bragg-Gray theory and the Spencer-Attix formulation. Detection and measurement methods including ionization chambers, TLD, calorimetry, ferrous sulfate, film, track etch, scintillators, Geiger-Mueller tubes. Microdosimetry, event size spectra, Rossi counters, applications to high LET dosimetry. Dosimetry protocols for high energy photons and electrons (TG 21), neutron and charged particle protocols.

Radiation Safety: Federal, state, and local regulations; instrumentation; patient and personnel dosimetry; shielding design; monitoring.

Radiation Therapy: Calibration; acceptance testing; quality assurance; radiation surveys; radiation room design; implant dosimetry; *in vivo* dosimetry; special devices; treatment planning; sealed sources; dose calculations. Practical experience with Co-60 units, linear accelerators, high dose rate remote afterloading, gamma knife, neutron radiotherapy cyclotron, CT simulation, and a variety of dosimetry equipment in demonstrations and laboratories.

Admission to these programs is contingent upon admission to the Graduate School and the Graduate Programs of the School of Medicine; for requirements, see pages 16 and 283 respectively. A bachelor's degree in physics or a physical science is the preferred background for students entering these programs, although candidates with degrees in other scientific or technological specialties may be accepted provided they have an adequate education in physics and mathematics. Applicants with incomplete physics and/or mathematics backgrounds will normally be required to complete their preparation in these areas before acceptance into a program.

Course subjects appropriate to graduate work in medical and radiological physics include human anatomy and physiology, electronics, mechanics, nuclear physics, modern physics, radiological physics (applicable to all areas of radiology), radiobiology, radiation safety, computer science, and statistics.

Scholarship: All course work must be completed in accordance with the regulations of the Graduate School and the School of Medicine governing graduate scholarship and degrees, see pages 16-30 and 283, respectively.

DEGREE REQUIREMENTS: The Master of Science with a major in Radiological Physics is offered under Plan B as defined by the Graduate School on page 27. For course requirements, contact the Program Director.

The Ph.D. requires ninety credits beyond the baccalaureate including thirty credits of dissertation direction. The Clinical Internship is required. The dissertation must be based on original research under the direction of a graduate faculty adviser.

Assistantships and Research

The faculty of the medical physics graduate programs offers students ample opportunity to work on special projects, primarily of a research nature. A wide selection of interesting and fulfilling projects is available for master's essay or Ph.D. dissertation research.

The Department has graduate assistantships and graduate research positions available for a number of qualified full-time students. All students accepted into the graduate degree program are considered for financial assistance and no application forms are necessary for that purpose. Students on assistantships are advised to elect no more than twelve credits in a given semester. All students, whether or not they hold a fellowship or an assistantship, are required to assist the graduate faculty in teaching and research activities as a component of their educational experience. For more complete information on financial assistance, students should consult or write the Graduate Officer, Department of Radiation Oncology, Wayne State University School of Medicine, 540 East Canfield, Detroit, Michigan 48201.

GRADUATE COURSE (ROC)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following course, numbered 5000-9999, is offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509

5990 Directed Study in Medical Sciences. Cr. 1-4

Prereq: written consent of instructor arranged in semester preceding election of course. Introduction to modern methodology of cancer research. Students of the Division of Cancer Biology of the Department of Radiation Oncology conduct research projects under direction of research scientists. Areas of research include: molecular biology, enzyme purification, tumor biology, cellular biochemistry. (T)

RADIOLOGY

Office: 3L-8, Detroit Receiving Hospital; (132)5-3430

Chairperson: George A. Kling

Associate Chairperson: Lawrence P. Davis

Professors

Harry T. Chugani, George A. Kling, Marvin Kronenberg, Renate L. Soulen

Professors (Clinical), Full-Time Affiliate

Eduard V. Kotylarov, Thomas L. Slovits

Clinical Professor

Ali Shirkhoda

Associate Professors

Jeffrey Evelhoch, Albert Goldstein

Associate Professor, Full-Time Affiliate

Thomas J. Mangner

Associate Professors (Clinical), Full-Time Affiliate

Gary M. Amundson, Lawrence P. Davis, John K. Kelly, Peter J. Littrup, Kathleen A. McCarroll, Faysal A. Saksouk, Frederick B. Watts, Burt T. Weyhing III, Alkis P. Zingas

Clinical Associate Professors

Syed Z. Jafri, Beatrice L. Madraza

Assistant Professors

Diane Chugani, John Harris, Jiani Hu, Gregory Moore, James Pipe

Assistant Professors, Full-Time Affiliate

Pulak Chakraborty, Otto Muzik

Assistant Professors (Clinical), Full-Time Affiliate

Anthony L. Alcanara, Kathleen A. Barry, Cristie J. Becker, Mark I. Burnstein, Vito A. Casano, Pulak Chakraborty, Daniel L. Croteau, John J. Crowley, James E. Denier, Marcelo F. Di Carli, Kent R. Donovan, Daniel Eggleston, Carmen Endress, Andrew A. Fogel, Zarina Galaria, Denise G.K. Gray, Cheryl Grigorian, Martin L. Gross, Karen Ann Haddlesey, Samuel C. Johnson, Rehana N. Kapadia, Roger M. Klein, Sambasiva R. Kottamasu, Thomas A. Maithys, Peter R. Miller, J. Jay Mittner, Yogesh S. Mody, Suzanne Moffit, Andrew M. Muchow, Otto Muzik, Cynthia A. Nepjuk, Krishna K. Nayak, Mitchell Pace, Tariq Rashid, Myer H. Roszler, Susan Roubal, Prasthana Sarcar, Katharine A. Scharer, Mark C. Segel, Ronald A. Sparschu, Daniel J. Walz, Robert M. Weinfeld

Clinical Assistant Professors

James P. Bagian, Helena Balon, Kostaki Bis, Paul J. Bohdiewicz, Myron H. Joyrich, James J. Karo, Hugh Kerr, Alfredo Lazo, Joseph J. Metes, Duane Mezwa, Vjekoslav Mikelic, Mohan Navarasala, Russell N. Nusynowitz, William Romano, Michelle D. Rossmann, Michael L. Schwartz, James E. Selis, Robert D. Steele, William C. Thompson, Pierre A. Zayat

Instructor (Clinical), Full-Time Affiliate

Jesus M. Ocampo

Clinical Instructors

David Chait, Bijaya Hans, Joyce A. Lemkin, Sanford Marks, Rojanandham Samudrala

Associates

Jai Y. Lee (Pathology), Colin G. Orton (Radiation Oncology),
Donald P. Ragan (Radiation Oncology)

Graduate Degrees

MASTER OF SCIENCE with a major in Radiological Physics

DOCTOR OF PHILOSOPHY with a major in Medical Physics

Undergraduate teaching in the M.D. program in this department is directed toward a total integration of the fundamentals of radiology with the basic sciences, particularly anatomy, physiology, chemistry and pathology. Radiologic instruction is correlated at freshman and sophomore levels with other departments. Junior-level instruction is clinically oriented and numerous radiologic electives are offered in the senior year. Various diagnostic imaging techniques such as conventional radiographic procedures; radionuclide imaging, both static and dynamic; ultrasonography; computerized tomography, MR; and digital subtraction radiography are included in both the undergraduate and graduate level of instruction. The pre-clinical program has been designed to orient the anatomy student to normal roentgen anatomy and also to relate this to aspects of physical diagnosis. There is further coordination in anatomy and physiology to emphasize function and in turn relate this to aspects of history taking. In the fields of physiology and physiologic chemistry, radioactive isotope techniques are presented relating particularly to endocrine functions, renal functions and blood formation. Correlated teaching is also carried in gross pathology.

In the clinical years, teaching of diagnostic radiology, radiation therapy, nuclear radiology, computerized tomography, MRI, and ultrasonography is related to total patient care and such teaching is, therefore, predominantly correlated with other clinical departments. The clinical aspects of diagnostic radiology, radiation therapy and radionuclide procedures and techniques are taught during clerkship and in the clinics and various inter-departmental and intra-departmental conferences.

Graduate Degree Programs: The Department of Radiology collaborates with the Department of Radiation Oncology to offer courses of study leading to a Master of Science degree in Radiological Physics or a Doctor of Philosophy degree in Medical Physics. Students should refer to that department (page 316) for program descriptions and an outline of admission and degree requirements.

Assistantships and Research: see Department of Radiation Oncology, page 316.

GRADUATE COURSES (RAD)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

5010 Introduction to Radiological Physics. Cr. 4

Prereq: PHY 2180, PHY 3300 or equiv. Nature of radiation and its interaction with matter. Theory of dosimetry and instrumentation for detection of radiation. Principles of radiation protection. Applications of radiation in radiology and related problems. (F)

7000 Imaging Physics I. Cr. 4

Coreq: RAD 5010. Basic theory of medical imaging. Introduction to magnetic resonance imaging and spectroscopy, ultrasound; diagnostic radiology: radiography, fluoroscopy, CT, digital radiography, and mammography. (F)

7010 Imaging Physics II: Nuclear Medicine. Cr. 2

Prereq: RAD 5010. Physics of nuclear medicine, with emphasis on imaging. (W)

7020 Physics of Radiation Therapy. Cr. 3

Prereq: RAD 5010. Lecture and demonstration in physics of radiation therapy. (W)

7030 Imaging Physics III: Diagnostic Ultrasound. Cr. 2

Prereq: PHY 2180, PHY 3300, or equiv. Diagnostic ultrasound: basic instrumentation, imaging concepts, quality assurance, biological effects. (B)

7040 Radiation Dosimetry. Cr. 2

Prereq: RAD 5010. Lecture and demonstration on principles of radiation dosimetry. Dosimetry of photons, electrons, neutrons and dose from radioactive materials. (W)

7050 Diagnostic Imaging Laboratory. Cr. 2

Prereq: RAD 7000. Practical laboratory exercises in ionometric and solid-state dosimetry techniques, quality assurance, and radiation safety for selected diagnostic imaging techniques. (W)

7060 Applied Radiobiology in Radiological Science. Cr. 2-4

Prereq: PHY 2180. Fractionation, oxygen enhancement ratio, characterization of neutron beams and heavy particles for radiation therapy, radiosensitivity within cell division. (F)

7070 Radiation Safety. Cr. 2

Prereq: RAD 5010. Lectures on radiation safety procedures and practices; governmental regulations on radiation safety. (S)

7080 Radiotherapy Physics Laboratory. Cr. 2

Prereq: RAD 7020 and 7040. Practical laboratory exercises in ionometric and solid-state dosimetry techniques, quality assurance procedures for selected radiation therapy and diagnostic radiological equipment. (S)

7090 Biomedical Nuclear Magnetic Resonance. Cr. 2

Prereq: PHY 2180, PHY 3300 or equiv. Principles of nuclear magnetism, absorption spectroscopy and NMR relaxation applied to NMR spectroscopy and imaging in biology and medicine. Instrumental design, operation and maintenance; cryogen management. (F)

7100 Statistical Methods in Cancer Research. Cr. 2

Basic statistical methods used in cancer research including cancer registries, incidence, risk, prevalence, mortality, treatment success and morbidity, survival. (B)

7110 Treatment Planning. Cr. 2

Prereq: RAD 7020. Practical aspects of radiotherapy treatment planning. Lectures and exercises in patient data acquisition and computerized treatment planning for a variety of sites with both teletherapy and brachytherapy. (F)

7120 Radionuclide Therapy. Cr. 2

Prereq: RAD 5010, 7020, and 7040. Development of radionuclide technology and its practical peaceful use from its discovery to the latest developments. (F)

7130 Nuclear Medicine Physics Laboratory. Cr. 2

Prereq: RAD 7010. Laboratory experiments calibration, Q.A., etc., on isotope generators, isotope calibrators, counting systems, spectrometers, cameras, spect and PET systems, Counting statistics, spectrum analysis. (S)

7140 Medical Physics Clinical Internship. Cr. 0

Prereq: RAD 7080 or 7130 or 7050. Offered for S and U grades only. At least twenty-four hours per week working as a junior medical physicist in a radiation oncology or radiology department under supervision of medical physicist. Checklist of mandatory and optional activities is completed; oral examination. (Y)

7890 Seminar. Cr. 1 (Max. 3)

Presentations by graduate students, staff, visitors with emphasis on topics relevant to radiation biophysics and radiological health. (T)

7990 Directed Study. Cr. 1-5

Independent study in the uses of new technologies in clinical radiology. (T)

7999 Essay Direction. Cr. 3

Preparation of an in-depth paper on a subject in radiological physics. (T)

8990 Special Problems in Radiation Biophysics. Cr. 1-3 (Max. 6)

Independent study in advanced topics to be selected by the student in consultation with instructor. (T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16

Prereq: consent of adviser. Offered for S and U grades only. (T)



SURGERY

Office: 6th Floor, University Health Center; 577-5013

Chairperson: David Fromm

Professors

Ramon Berguer, David L. Bouwman, Michael S. Dahn, David Fromm, Michael D. Klein, Anna M. Ledgerwood, Charles E. Lucas, Harvey Pass, Jerry C. Rosenberg, Allen Silbergleit, Yvan J. Silva, Zwi Steiger, Larry W. Stephenson, Choichi Sugawa, Donald W. Weaver, Robert F. Wilson

Clinical Professors

Agustin Arbulu, Mehdi Hakimi, Adrian Kantrowitz, Andrew Saxe

Associate Professors

Frank A. Baciewicz, Arthur Chu, Lawrence N. Diebel, Scott Dulchavsky, John Fath, Charles L. Huang, Michael P. Kaplan, Andris Kazmers, Ronald Kline, Robert Kozol, Jai Prasad, Emanuel Reinitz, Vishwanath M. Sardesai

Clinical Associate Professors

Susan E. Adelman, Federico A. Arcari, Ingida Asfaw, Joseph S. Bassett, Conrad F. Bernys, Jason H. Bodzin, J. Waldo L. Cain, William Gross, Khatchadour Hamamdjian, James R. Lloyd, Robert J. Lucas, Vijay Mittal, John R. Pfeifer, Eduardo Phillips, Vinod Puri, Fredrick E. Rector, Krishna Sawhney, Homer M. Smathers, Joe G. Talbert, Narendra Tyagi, Michael H. Wood, Shun Young

Assistant Professors

Sharon H. Ackerman, Chenicheri Balakrishnan, Shannon Bongers, Maureen Brandon, Robert Bright, Arthur Carlin, Keung-Siu Ray Chung, Marc L. Cullen, Nicholas Davis, E. Gene Deune, Diane Farmer, Mark Friedland, Ramanlal Golwala, Eti Gursel, Mary Ann Kosir, Jean-Francois LeFaivre, Larry Lloyd, Kevin Lobdell, Michael Meininger, Arlene Rozzelle, Walter A. Salwen, Vijayal Shridar, Christopher Steffes, Paul Stockman, Steven Tenenberg, James Tyburski, Henry Walters, Michael White

Clinical Assistant Professors

Zacarias G. Asuncion, Jr., Roberta Barbosa, William Brown, Lauran Bryan, Joseph Buck, Michael Bussito, Chairat Chomchai, Paul E. Clancy, Gerald Cyrowski, Elizabeth Dawe, Reza Dabir, Thomas Flake, Lorenzo Ferguson, Maurice Frankel, Vincent J. Gallant, Mune Gowda, Michelle Hardaway, John M. Hartzell, Michael Heuton, Joseph Hildebrand, Keith Hinshaw, Robert J. Holmes, John A. Ingold, Raymond Jungwirth, Ali Kafi, R. B. Kolachalam, Yash Lakra, JoAnne Levitan, Michael Lodish, Hayward C. Maben, Ahmed Mahmoud, Douglas Maibenco, Alasdair McKendrick, Mehul Mehta, Vijay Mittal, Kevin Nolan, Ralph Pearlman, Paul Rizzo, Jerry Rogers, Marc P. Sakwa, Michael J. Schenden, Kenneth Shaheen, Thomas S. Siegel, Sumet Silapaswan, Deborah Sims, Allen Telmos, Edward Treisman, You-Wen Tsai, Oscar C. Tumaoder, Satish C. Vyas, Bruce Washington, James Whitten, Stanley Wicha, A. Neal Wilson, Leroy Wirthlin, Steven M. Wolf, Burton Zack

Clinical Instructors

Edward Burke, Ronald A. Rusko, Richard Singer

The main objectives of the Department of Surgery are to relate the principles of the basic sciences to clinical practice, and to impart the details of patient care in light of modern physiological and pharmacological knowledge. Emphasis is on understanding of the deranged metabolic processes occasioned by surgically treatable disease and physical trauma, the translation of these into recognizable symptoms and signs and the rational correlation of therapy with these basic disturbances. Surgery is taught as only one aspect of patient care and emphasis is placed on the relationship of the surgeon to other personnel who form part of the health team. As part of their education, students are part of the resident care team and are assigned patients for study.

With the unusually broad spectrum of diseases treatable by surgical methods present in the Wayne State University affiliated hospitals, students have contact with oncological, vascular and gastrointestinal problems. Students obtain a wide clinical experience at Detroit Receiving and Harper Hospitals. During their third year, they may also select to rotate to one of the other affiliated hospitals such as the new Veterans Administration, Grace-Sinai, or Beaumont Hospitals.

Students are encouraged to participate in experimental and clinical research programs with staff supervision during their senior elective periods and summer vacations. The program is designed to provide the student with the opportunity to develop career interests in surgery at an early stage in their education.



UROLOGY

Office: 1017 Harper Professional Building, 4160 John R.,
Detroit, Michigan 48201; (132)5-7381

Chairperson: J. Edson Pontes

Professors

Ricardo Gonzalez, Alan D. Perlmutter (Emeritus), J. Edson Pontes, David Wood, Jr.

Associate Professors

Julia Barthold, C. B. Dhabuwala, Gilda Hillman, Isaac J. Powell

Clinical Associate Professors

Arthur J. Johnson, Joseph R. Oldford, Edward J. Shumaker

Assistant Professors

Michael L. Cher, Marko R. Gudziak, Jeffrey Triest

Clinical Assistant Professors

Melvin L. Hollowell, Charles Kessler, William H. Rattner, Edward Schervish, James B. Smith, Jr., Jeremy D. Webster

Clinical Instructor

Stephen A. Liroff

The Department of Urology presents to the undergraduate medical student the fundamental concepts of the disease processes involving the urinary tract and the male genital tract in both adults and children. The material is presented in such a way as to emphasize physiological mechanisms and anatomical relationships, and thus to demonstrate the application of the basic science material to the management of clinical problems. The presentation integrates the understanding of the problems of the urinary and genital tracts into the overall problems of the patient. The course material is presented as a group of five lectures integrated into the first and second year of the curriculum. In the junior year, while the students study surgery, five lectures are given in the basics of urological care. A senior elective is offered in a four-week block. The urology elective can be arranged as a four-week block of adult urology at Harper Hospital; or as a two-week block of adult urology at Harper Hospital and a two-week block of pediatric urology at Children's Hospital of Michigan.

College of Nursing

DEAN: Barbara K. Redman

Foreword

The Wayne State University College of Nursing is regionally, nationally, and internationally recognized for educating graduate and undergraduate students as practitioners and scholars in the nursing profession. The College is committed to research and scholarly activity which contributes to the discipline of nursing and excels in the development, application, and dissemination of such knowledge to promote human health and well-being.

Nursing is an academic discipline and a profession. As a discipline, nursing develops knowledge concerning human beings, their care, health, and the environment. Concepts derived from such research order the discipline and profession of nursing as well as give identity to nursing practice and direct inquiry and theory development. As a profession, nursing creatively uses knowledge in response to the health care needs of society. Both of these functions are enhanced by the scholarly environment of the University and its multicultural urban setting as a context for professional nursing practice.

Consistent with this view of the nursing profession, the College supports the importance of liberal arts, humanities, and the sciences in nursing education. The faculty believes that programs designed for the preparation of nurses must be composed of the intellectual, social, cultural, and technical components of liberal and professional education that are available to students within an institution of higher learning. The faculty also affirms the necessity and value of clinical practice within a professional nursing program. Experience within a variety of clinical and vulnerable populations is one of the primary modes for the development of nursing practice competencies.

Learners from diverse backgrounds enter the College to begin or continue their education and thereby add to the richness of this learning environment. The faculty supports the right of students to question, challenge and debate within the context of inquiry as an essential ingredient to their development. Continuing evaluation on the part of the students and the faculty is essential to advancing nursing knowledge and sustaining the integrity of the program.

The faculty of the College of Nursing, as members of the academic community, recognizes that its professional functions extend beyond contributions to formal teaching. Research, practice, and community service are important expectations of the faculty. The faculty views as essential, academic freedom, shared governance, opportunity to develop knowledge, and responsibility to incorporate new knowledge into teaching and nursing practice. The faculty assumes responsibility for enhancing the image of the College of Nursing and the University locally, nationally, and internationally through various avenues including research, scholarship, practice, consultation, and participatory decision making.

Accreditation

The baccalaureate program is approved by the Michigan State Board of Nursing, and graduates are admitted to the licensing examination for professional nurses in the State of Michigan. The baccalaureate and master's programs of the College are accredited by the National League for Nursing. In addition, the BSN and MSN programs were recently granted preliminary approval by the newly-established Commission on Collegiate Nursing Education.

Graduate Degrees

MASTER OF SCIENCE in Nursing
with a clinical major in:

- Adult Acute Care Nursing*
— *Adult Critical Care Nursing Option*
- Adult Primary Care Nursing*
— *Gerontological Nurse Practitioner Option*
- Nursing, Parenting, and Families*
- Psychiatric Mental Health Nurse Practitioner*
- Community Health Nursing¹*
- Nursing Care Administration¹*

- GRADUATE CERTIFICATE in Nursing Education*
- GRADUATE CERTIFICATE in Transcultural Nursing*
- GRADUATE CERTIFICATE in Neonatal Nurse Practitioner*
- DOCTOR OF PHILOSOPHY in Nursing*

COLLEGE DIRECTORY

Dean	112 Cohn; 577-4070
Associate Dean	
for Academic Affairs	230 Cohn; 577-4138; 800-544-3890
Office of Student Affairs	10 Cohn; 577-4082
Center for Health Research	315 Cohn; 577-4134
Administrative Manager	100 Cohn; 577-4086

MAILING ADDRESS FOR ALL OFFICES:

College of Nursing,
Wayne State University,
5557 Cass Avenue
Detroit, Michigan 48202



1. An admission moratorium is in effect for this program

MASTER OF SCIENCE IN NURSING

Credits

Clinical Nursing Sequence	22-36
Cognate/Related Science	6
Research Sequence	10

Admission Requirements

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Additionally, students must satisfy the following criteria mandated by the College:

1. The applicant must have completed a National League for Nursing (N.L.N.) accredited baccalaureate program in nursing with an honor point average (h.p.a.) of 2.80 or above in the upper division course work. A qualified admission may be authorized if an applicant's h.p.a. is between 2.40 and 2.79 and there is substantial evidence of extra-scholastic qualifications of such merit as to warrant special consideration.
2. Completion of Graduate Record Examinations within five years of admission, with a composite score (verbal and quantitative) of 800 or above.
3. Professional competence as documented by three references.
4. Current registered nurse licensure or national registration for international applicants (some clinical areas require licensure in Michigan for all applicants).
5. A personal statement of goals for graduate study.
6. An interview with a faculty adviser may be requested.

There may be additional requirements in each of the clinical areas. Please refer to the course descriptions and consult with an adviser for specific prerequisites.

Application: All new applicants must submit two application forms, the *Application for Graduate Admission* and the *College of Nursing Application for Admission to the Master of Science in Nursing Program*. Both applications are available in the Office of Student Affairs, College of Nursing.

Application to Wayne State University and the College of Nursing, including all supporting documentation, must be received in the appropriate offices by the posted deadline dates. Deadline dates for submission of application materials are July 1, November 1, and March 15, for Fall term, Winter term, and Spring/Summer term, respectively. Applicants interested in full-time study are encouraged to apply for Fall term admission.

Pre-Master's Admission: Occasionally, individuals with special needs may be admitted as a pre-master's student. In this classification, a student may register for a maximum of nine graduate credits; she/he may not register for clinical nursing courses. Enrollment as a pre-master's student does not guarantee admission to the master's program.

Readmission: The master's student who withdraws from the program in good standing for one or more years should contact the Office of Student Affairs, College of Nursing, one semester prior to the semester for which re-enrollment is desired. Following a review by the Office for Academic Affairs, the student will be informed of the steps needed to qualify for readmission.

Revalidation of Credit: The College of Nursing reserves the right to revalidate all credits in the clinical nursing sequence which are over three years old or any other credits earned at Wayne State University which are between six and ten years old. Additional credits for degree completion may be required. Such authority rests with the Graduate Officer of the College of Nursing.

Master's Degree Requirements

Candidates for the Master of Science in Nursing must complete thirty-four to fifty-two credits of study. All course work must be completed in accordance with the academic procedures of the College and the Graduate School governing graduate scholarship and degrees; see pages 329 and 16, respectively. Credits must be distributed as follows:

Concentrations currently available to satisfy these three generic requirements are detailed below. Cognates, which are clinically specific, are predetermined by selection of the clinical nursing sequence and will be found as part of the clinical areas. Research requirements may be found on page 325. Students should inquire about possible additional offerings. All programs are subject to periodic revision.

Plan of Work: With the approval of the adviser, the student develops and files a *Plan of Work* prior to completion of twelve graduate credits at Wayne State University. A student must have a minimum 3.0 honor point average in order to have a *Plan of Work* accepted by the Graduate Officer. Each *Plan* must include the course requirements for the clinical nursing sequence and intended degree. It is the responsibility of the student to file any changes in the *Plan of Work*.

Time Limitations: Students have six years to complete requirements. The six-year limit begins from the end of the semester during which the student has taken course work applicable toward meeting the requirements of the degree; this may occur before the student is regularly admitted to the major.

Adult Acute Care Nursing (Fifty-two credits required)

The Master of Science in Nursing degree with a focus in Adult Acute Care Nursing prepares the nurse for advanced practice in the care of the physically ill adult. Emphasis is on adults with existing and/or potential physiological alterations, and their concomitant developmental and psychosocial needs. The clinical practicum sites are individualized, based on the student's identified goals and area of clinical interest. The curriculum develops the advanced practice nurse's roles of practitioner, educator, and clinical scholar, through education in rigorous and consistent diagnostic reasoning and theory-based practice, as well as in the analysis, critique and utilization of nursing and biopsychosocial theory and constructs. Graduates are eligible to take the ANCC Acute Care Nurse Practitioner certification examination.

Clinical Nursing Sequence: *Thirty-six credits required* Credits

NUR 6510—Nursing Economics and Health Care Policy	3
NUR 7100—Theoretical Foundations of Nursing Practice	3
NUR 7110—Responses and Experiences in Health and Illness	3
NUR 7120—Advanced Nursing Assessment of Adults	6
NUR 7130—Adult Acute Care Nursing I	6
NUR 7140—Adult Acute Care Nursing II	6
NUR 7190—Nursing Care of Groups and Families	3
NUR 7370—Advanced Practice Nursing of Adults	6

Cognate: *Six credits required*

PTH 6500—Systemic Pathophysiology	3
IHS 7000—Pharmacotherapeutics for Adv. Health Professions . . .	3

— ADULT CRITICAL CARE NURSING OPTION (Fifty-two credits required)

This area of study within Adult Acute Care Nursing prepares critical care advanced practice nurses. Students are prepared as advanced practice nurses to care for critically ill adults and their families in structured and unstructured settings. The focus of the clinical sequence is on the conceptual, theoretical and experimental basis for advanced nursing practice. Emphasis is given to the development and application of standards and research to enhance the quality of care delivery. Students gain experience in practitioner, educator and clinical scholar roles of the advanced practice nurse. Graduates are eligible to take the ANCC Acute Care Nurse Practitioner certification examination.

Clinical Nursing Sequence: Thirty-six credits required Credits

NUR 6510— Nursing Economics and Health Care Policy	3
NUR 7100— Theoretical Foundations of Nursing Practice	3
NUR 7110— Responses and Experiences in Health and Illness	3
NUR 7120— Advanced Nursing Assessment of Adults	6
NUR 7190— Nursing Care of Groups and Families	3
NUR 7350— Adult Critical Care Nursing I	6
NUR 7360— Adult Critical Care Nursing II	6
NUR 7370— Advanced Practice Nursing of Adults	6

Cognates: Six credits required

PTH 6500— Systemic Pathophysiology	3
IHS 7000— Pharmacotherapeutics for Advanced Health Professions	3

**Adult Primary Care Nursing
(Fifty-two credits required)**

This clinical area prepares the advanced practice nurse in primary care of adults. The focus of the clinical sequence is on the adult client and his/her response to actual or potential health care needs. Primary care includes the assumption of accessible, accountable, comprehensive, coordinated first contact care as well as longitudinal management. Opportunity is provided to study the theoretical foundation of nursing practice with the development of practice models of primary care. Advanced assessment and diagnostic reasoning are taught as the basis for nursing management. The study and practice of gerontological nursing are integrated in the clinical sequence. Emphasis is placed on the development of clinical judgment in health promotion as well as in the nursing management of acute and chronic health problems. Clinical practicum is implemented in an autonomous primary care nursing service with emphasis on the adult nurse practitioner roles. Graduates are eligible to take the ANCC certification examination for the Adult Nurse Practitioner.

Clinical Nursing Sequence: Thirty-six credits required Credits

NUR 6510— Nursing Economics and Health Care Policy	3
NUR 7100— Theoretical Foundations of Nursing Practice	3
NUR 7110— Responses and Experiences in Health and Illness	3
NUR 7150— Clinical Judgment in Nursing I	6
NUR 7160— Clinical Judgment in Nursing II	6
NUR 7170— Adult Primary Care I	6
NUR 7180— Adult Primary Care II	6
NUR 7190— Nursing Care of Groups and Families	3

Cognates: Six credits required

PTH 6500— Systemic Pathophysiology	3
IHS 7000— Pharmacotherapeutics for Advanced Health Professions	3

**— GERONTOLOGICAL NURSE PRACTITIONER OPTION
(Fifty-two credits required)**

This area of study prepares an advanced practice nurse in primary care of the elderly. The focus of the clinical sequence is on the elderly client and his/her response to actual or potential health care needs. The gerontological nurse practitioner's practice is assumed to be accessible, accountable, comprehensive, collaborative and coordinated first contact care as well as longitudinal management. Opportunity is provided to study the theoretical foundation of nursing practice with the development of practice models of gerontological primary care. Nursing practice is approached from an interdisciplinary perspective. Advanced assessment and diagnostic reasoning are taught as the basis of nursing management. Emphasis is placed on the development of clinical judgment in health promotion as well as in the nursing management of acute and chronic health problems in the elderly. Clinical practicum is implemented in autonomous primary care nursing services with opportunities for collaboration with health professionals and emphasis on the role of the gerontological nurse practitioner. Graduates are eligible to take the ANCC certification examination for the Gerontological Nurse Practitioner.

Clinical Nursing Sequence: Thirty-six credits required Credits

NUR 6510— Nursing Economics and Health Care Policy	3
NUR 7100— Theoretical Foundations of Nursing Practice	3
NUR 7110— Responses and Experiences in Health and Illness	3
NUR 7150— Clinical Judgment in Nursing I	6
NUR 7160— Clinical Judgment in Nursing II	6
NUR 7190— Nursing Care of Groups and Families	3
NUR 7400— Gerontological Nursing: Physical & Functional Aspects of Aging	6
NUR 7410— Gerontological Nursing: Psychosocial Aspects of Aging	6

Cognates: Six credits required

PTH 6500— Systemic Pathophysiology	3
IHS 7000— Pharmacotherapeutics for Advanced Health Professions	3

**Nursing, Parenting, and Families
(Forty-three credits required)**

This clinical area prepares nurses for advanced practice nursing with women, high risk neonates, children, and their families. Students elect to focus on preparation as a women's health care nurse practitioner, neonatal nurse practitioner, or pediatric nurse practitioner. All students are provided with both combined seminar experiences focused on advanced practice nursing with women, neonates, and children, and with specialty lectures and clinical practice experiences in one of the following areas: women's health, high risk neonatal care, or child health. Opportunity is provided to study and synthesize knowledge foundational to advanced practice, to develop skill in advanced assessment, diagnostic reasoning, and clinical judgement in health promotion and nursing management of acute and chronic health problems, and to develop and validate a theory-based model of advanced practice nursing within an identified speciality area. Graduates are eligible to take certification examinations in one of the following areas: women's health care nurse practitioner, neonatal nurse practitioner, or pediatric nurse practitioner. The following curriculum states the current requirements. A revised curriculum is intended for the Fall Term, 1999; students should consult their advisers for details.

Clinical Nursing Sequence: Twenty-seven credits required Credits

NUR 6510— Nursing Economics and Health Care Policy	3
NUR 7100— Theoretical Foundations of Nursing Practice	3
NUR 7110— Responses and Experiences in Health and Illness	3
NUR 7190— Nursing Care of Groups and Families	3
NUR 7270— Nursing, Parenting, and Families: Syn. of Scientific Foundations	5
NUR 7280— Nursing, Parenting, and Families: Evaluation of Adv. Practice	5
NUR 7290— Nursing, Parenting, and Families: Validation of Adv. Practice	5

Cognates: Six credits required

PSY 7400— Introduction to Life-Span Developmental Psychology	3
PSL 7500— Developmental Physiology	3

**Psychiatric Mental Health Nurse Practitioner
(Forty-four credits required)**

This program of study is designed to prepare psychiatric mental health nurse practitioners. Students gain expertise in several modalities of psychotherapy. In addition, they gain knowledge in biological, neurobiological, pharmacological, and physiological domains so that they can conduct comprehensive assessments and utilize a range of psychobiological interventions. The specialty courses focus on psychiatric assessment, triage and crisis intervention; biopsychosocial models of mental health and illness; theory and practice with individuals, families, and groups; and analysis of mental health systems and policies. Students have an opportunity to develop their own goals and pursue focused clinical experiences in areas of individual interest. Graduates will have earned the maximum education credits applicable toward national certification in Adult or Child Psychiatric Nursing through ANCC.

Clinical Nursing Sequence: Twenty-eight credits required Credits

NUR 7100 — Theoretical Foundations of Nursing Practice	3
NUR 7600— Biopsychosocial Models of Mental Health and Illness	4
NUR 7620— Group & Environmental Interventions in Advanced Psychiatric Nursing	6
NUR 7630— Individual & Family Interventions in Advanced Psychiatric Nursing	6
NUR 7640— Systems of Care in Psychiatric Nursing	4
NUR 7650— Advanced Psychiatric Nursing Assessment & Crisis Intervention ...	5

Cognates: Six credits required

PSY 5050— Physiological Psychology	3
PSY 5070— Biobehavioral Bases of Drug Action	3

**Community Health Nursing¹
(Forty-three credits required)**

This program of study is designed to prepare the nurse for advanced practice in community health nursing. The courses focus on the assessment of health needs of aggregates, populations and communities, and theory-based development and evaluation of programs. Emphasis is placed on partnerships and collaboration with communities and organizations. Specific themes that are developed across the curriculum include: community health; vulnerable aggregates, communities and populations; health policy; health care delivery; and community health theory, practice and research. Students have an opportunity to develop their own goals and pursue focused clinical experiences in areas of individual interest. Graduates will be eligible to apply for national certification as Clinical Specialists in Community Health Nursing through ANCC.

Clinical Nursing Sequence: Twenty-seven credits required Credits

NUR 6510— Nursing Economics and Health Care Policy	3
NUR 7100 — Theoretical Foundations of Nursing Practice	3
NUR 7110— Responses and Experiences in Health and Illness	3
NUR 7190— Nursing Care of Groups and Families	3
NUR 7510— Adv. Community Health Nursing I: Urban Health Assessment	4
NUR 7540— Adv. Community Health Nursing II: Urban Health Planning and Intervention	4
NUR 7560— Advanced Community Health Nursing III: Urban Health Evaluation ..	4
NUR 7570— Urban Health	3

Cognates:

C M 7240 — Epidemiology	3
C M 6010 — Biostatistics	3

**Nursing Care Administration¹
(Thirty-eight to forty-one credits required)**

The purpose of the curriculum in nursing care administration is to prepare professional nurses for advanced leadership positions in public and private health care agencies/institutions, health care corporations and professional organizations. These positions require nurses with advanced clinical knowledge and managerial competence who can plan, organize, lead and direct the activities of others involved with the provision of health care services.

**Nursing Care Administration Sequence:
Twenty-two to twenty-five credits required** Credits

NUR 6050— Nursing Information Systems	3
NUR 6510— Nursing Economics and Health Care Policy	3
NUR 7100— Theoretical Foundations of Nursing Practice	3
NUR 7750— Administrative Process in Nursing	3
NUR 7760— Human Resource Management	3
NUR 7770— Field Practice in Nursing Administration	4
Clinical Specialty Course (see below)	3-6

Clinical Specialty Requirements (select one): Credits

NUR 7070— Transcultural Nursing	3
NUR 7120— Advanced Nursing Assessment of Adults	6
NUR 7270— Nursing, Parenting, & Families: Syn. of Scientific Foundations	5
NUR 7510— Advanced Community Health Nursing I	4
NUR 7600— Biopsychosocial Models of Mental Health & Illness	4

Cognates: Six credits required

ACC 6020— Managerial Accounting	3
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and one of the following:

B A 6020— Mgt. Principles and Organization Processes	3
MGT 7680— Executive Decision Making	3

Research Sequence

All MSN students must elect a series of courses which will prepare him/her to be competent in the utilization of research findings. To develop these skills, the student completes courses in inferential statistics and research methods in nursing before conducting a study which includes the scientific analysis of data.

Research Sequence: Ten to fifteen credits required Credits

NUR 7000 — Statistical Methods in Nursing Research	4
NUR 7010 — Research in Nursing	3
NUR 7020 — Qualitative Research in Nursing and Health Care	3

plus one of the following:

NUR 7998 — Master's Research Project	3
NUR 8999 — Master's Thesis Research and Direction	8

Accelerated ADN — MSN Program

This program is designed for registered nurses (RNs) with an associate degree in nursing (ADN) who are interested in preparing themselves for advanced nursing practice at the master's level. The ADN —MSN program combines the baccalaureate and master's degree programs for academically-talented RNs. Through this accelerated program, students receive both the B.S.N. and, once admitted to graduate studies, the M.S.N. degrees.

The program allows students to apply a maximum of fifteen graduate credits toward both an undergraduate degree and a graduate degree in nursing. Upon completion of all B.S.N. requirements, students, if admissible to graduate study, complete M.S.N. requirements. Requirements for the B.S.N. degree are listed in the Wayne State University Undergraduate Bulletin.

Admission: Students are admitted to this program through the regular undergraduate admission procedures, as set forth in the Wayne State University Undergraduate Bulletin. Additionally, students must satisfy the following criteria required by the College:

1. Completion of College of Nursing Undergraduate and Graduate Applications.
2. Completion of an associate degree in nursing with an honor point average (h.p.a.) of 3.3 or above.
3. Current registered nurse licensure.
4. A minimum of one year's experience as a registered nurse.

1. An admission moratorium is in effect for this program.

GRADUATE CERTIFICATE IN NURSING EDUCATION

This twelve-credit certificate program is designed to prepare nurses for teaching positions in educational and service settings. The certificate provides nurses with essential knowledge and skills about teaching, program development, evaluation, clinical instruction, and other aspects of the educational process in nursing. Courses focus on concepts of learning; cognitive, affective and psychomotor learning; teaching methods and concepts of teaching in nursing; multimedia and computer-assisted instruction; curriculum development theory in nursing; evaluation; testing; and clinical teaching from a theoretical and research perspective.

Three of the required twelve credits in this program may be applied toward the master's degree. For students enrolled in the master's program, the certificate is awarded upon completion of the degree.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Additional requirements include: an M.S.N. degree, or enrollment in the master's program in the College of Nursing.

CERTIFICATE REQUIREMENTS: The Certificate must be earned within three years. No transfer credit will be accepted for a certificate program. A minimum honor point average of 3.0 must be achieved. All course work must be completed in accordance with the academic procedures of the College and the Graduate School governing graduate scholarship and degrees; see pages 329 and 16, respectively.

Required Courses (Twelve credits)

Credits

Graduate-level NUR course (credits may be applied toward master's degree)	3
NUR 7710 — Theoretical Perspectives of Teaching in Nursing	3
NUR 7720 — Educational Program Development and Evaluation in Nursing	3
NUR 7730 — Field Practice in Clinical Teaching	3

Total: 12



NEONATAL NURSE PRACTITIONER GRADUATE CERTIFICATE

This eighteen-credit certificate program is designed to prepare nurses to function as nurse practitioners in newborn intensive care units. The program provides nurses with the advanced knowledge and skills requisite to managing the total care of critically-ill neonates in neonatal intensive care units. Courses focus on the relationships of normal or dysfunctional physiologic and psychosocial events of the prenatal, intrapartal, postpartal, and neonatal periods, acute and chronic health problems of high risk neonates, technological, pharmacological, and environmental therapeutic interventions, and care of the family. Upon program completion, students are eligible to take the ANCC Neonatal Nurse Practitioner certification examination.

Admission to this program is contingent upon admission to the Graduate School (see page 16 for requirements). Admission requirements include: an M.S.N. degree, or enrollment in the master's degree program in the College of Nursing. Additional requirements include documentation from an agency supervisor confirming completion of a minimum of twenty-four months with 2,000 hours in a level-three neonatal intensive care unit or proof of current certification as a neonatal intensive care nurse.

CERTIFICATE REQUIREMENTS:

The Certificate must be earned within three years. No transfer credit will be accepted for a certificate program. An overall minimum honor point average of 3.0 must be achieved. Additionally, an honor point average of 3.0 ('B') must be achieved in the prerequisite courses NUR 7100 and 7190, and in the nursing courses NUR 7270, 7280, and 7290. Nine of the required eighteen credits in this program may be applied toward the Nursing, Parenting, and Families major. For student's enrolled in the master's program, the certificate is awarded upon completion of the degree. All course work must be completed in accordance with the academic procedures of the College and the Graduate School governing graduate scholarship and degrees; see pages 329 and 16, respectively.

Required Courses (Eighteen credits)

Credits

PSL 7500 — Developmental Physiology	3
NUR 7270 — Nursing, Parenting & Families: Synthesis of Scientific Fdns.	5
NUR 7280 — Nursing, Parenting & Families: Eval. of Advanced Practice	5
NUR 7290 — Nursing, Parenting & Families: Validation of Advanced Practice	5

Total: 18

GRADUATE CERTIFICATE IN TRANSCULTURAL NURSING

This certificate is designed to provide students with knowledge and skills for working with individuals, families and groups of various cultures, and with cultural institutions exhibiting diverse values, beliefs and lifeways. The courses are especially designed to contrast and compare different cultures throughout the world and offers students the opportunity to understand how culture influences health care. Classroom and field experiences enable students to become competent practitioners, consultants, cultural care facilitators, and teachers in transcultural nursing.

Admission: applicants must meet the admission standards of the graduate school, see page 16. Eligibility for this program is extended to students enrolled in the M.S.N. or Ph.D. programs at Wayne State University and to graduates of an accredited M.S.N. program.

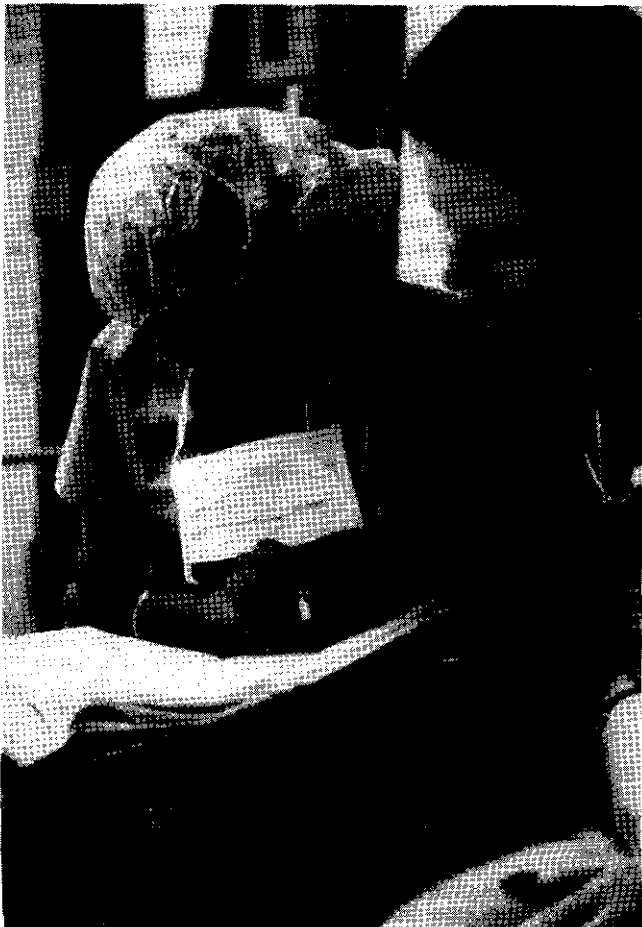
CERTIFICATE REQUIREMENTS: The certificate program consists of a minimum of twelve credits which must be earned within three years. No transfer credit will be accepted for the certificate. A minimum honor point average of 3.0 must be achieved. All course work must be completed in accordance with the academic regulations of the Graduate School and the School of Nursing; see pages 16 and 329 respectively.

Required Courses (Twelve Credits)

Credits

NUR 7060 — Transcultural Health and Life Cycles	3
NUR 7070 — Transcultural Nursing: Theory and Research	3
NUR 7080 — Field Practice in Transcultural Nursing	3
Graduate Level NUR course approved by adviser	3

Total: 12



DOCTOR OF PHILOSOPHY

Admission Requirements

1. **Admission** to the Wayne State University Graduate School (for requirements, see page 16).

2. **Nursing Degree:** A bachelor's or master's degree in nursing or the equivalent from a National League for Nursing (NLN) accredited institution. Summer option applicants must have a master's degree in nursing.

3. **Honor Point Average:** Applicants who have a master's degree must have a 3.3 (on a 4.0 scale) graduate h.p.a., based on at least twelve credits of graduate level course work; applicants who have a bachelor's degree must have a minimum 3.5 h.p.a. in upper division undergraduate course work (the last sixty credits).

4. **Graduate Record Examination:** Applicants must have a total score (verbal plus quantitative) of at least 1000, with a minimal verbal score of 400 and a minimal quantitative score of 400. GRE scores must be from examinations taken within the past five years as of April first of the admission year.

5. **Experience:** One year of professional nursing experience is recommended.

6. **References:** Applicants must submit three references (on forms provided), preferably from nurse faculty, nurse researchers, and/or other professional colleagues (preferably at the doctorally-prepared level) who can evaluate the applicant's clinical competence, scholarship and aptitude for research.

7. **Statement Of Professional Goals** including, but not limited to, motivation for doctoral study, career goals, and focus of doctoral research.

8. **Scholarship:** Applicants must submit two examples of their scholarly writings (published or unpublished). Examples should be selected to demonstrate the conceptual as well as technical aspects of the applicant's writing ability.

9. **Interviews:** Applicants are encouraged to meet with individual faculty and to attend Information Meetings, which are held monthly.

Priority Admission Deadline: The priority admission deadline for the doctoral program in nursing is December 1 of the application year. Applications received after the priority deadline will be considered if space is available.

Although an applicant meets all minimum requirements, admission may be not be granted because of (1) unavailable program space, and/or (2) inadequate College resources relevant to the applicant's specific interests.

Admission decisions are based upon all materials submitted and reflect careful consideration of the applicant's professional goals, research interests, and the resources of the College of Nursing. Applicants are notified of admission decisions early in March.

Readmission: Students who withdraw from the program in good standing or are inactive for one or more years should contact the Office for Academic Affairs, College of Nursing, one semester prior to the semester in which they wish to register.

Degree Requirements

Candidates for the Doctor of Philosophy in Nursing must complete a minimum of ninety graduate credits beyond the baccalaureate degree. All course work must be completed in accordance with the academic procedures of the College and the Graduate School governing graduate scholarship and degrees; see pages 329 and 16, respectively. Students are expected to complete a predissertation research requirement prior to the writing of the qualifying examination.

The faculty of the College of Nursing has developed three curricular paths for students to accomplish the requirements for the Ph.D. in nursing. These paths offer options to applicants based on their present educational level and professional career goal: two paths for

students entering the program post-B.S.N., and one for those entering post-M.S.N. A summer option is available for students who have a master's degree in nursing. Full-time students in the summer option can complete course work, excluding dissertation, over four summers. Full-time and part-time study options are available.

Path I: for post-B.S.N. students, leading to the Ph.D. Degree

Focus: Research and Nursing Knowledge

Major Courses (28 credits):

	Credits
NUR 7100 — Theoretical Foundations of Nursing Practice	3
NUR 7110 — Responses and Experiences in Health and Illness	3
NUR 7190 — Nursing Care of Groups and Families	3
NUR 8010 — Nursing Theory Development	3
NUR 8020 — Nursing Theory: Formulation and Testing	3
NUR 8100 — Issues, Methods and Policies in Nursing (elect twice)	4
NUR 8200 — Topical Seminar in Nursing (elect three times)	9

Philosophy Course (4 credits):

PHI 5230 — Philosophy of Science	4
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Research and Statistics Courses (20 credits):

NUR 7010 — Research in Nursing	3
NUR 7998 — Master's Research Project	3
NUR 8050 — Quantitative Research Methods in Nursing	3
NUR 8060 — Qualitative Research Methods in Nursing	3
PSY 7150 — Quantitative Methods in Psychology I	4
PSY 7160 — Quantitative Methods in Psychology II	4

Cognate Courses	8
Dissertation	30

Total minimum credits: 90

Path II: for post-B.S.N. students, leading to the M.S.N. and Ph.D. Degrees

Focus: Research, Nursing Knowledge, and Clinical Specialization

Major Courses (46-55 credits)

Clinical courses in area of specialization	27-36
NUR 8010 — Nursing Theory Development	3
NUR 8020 — Nursing Theory: Formulation and Testing	3
NUR 8100 — Issues, Methods and Policies in Nursing (elect twice)	4
NUR 8200 — Topical Seminar in Nursing (elect three times)	9

Philosophy Course (4 credits):

PHI 5230 — Philosophy of Science	4
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Research and Statistics Courses (20 credits):

NUR 7010 — Research in Nursing	3
NUR 7998 — Master's Research Project	3
NUR 8050 — Quantitative Research Methods in Nursing	3
NUR 8060 — Qualitative Research Methods in Nursing	3
PSY 7150 — Quantitative Methods in Psychology I	4
PSY 7160 — Quantitative Methods in Psychology II	4

Cognate Courses [6 of these credits are required to fulfill master's degree requirements]	8
Dissertation	30

Total minimum credits: 108-117

Path III: for post-M.S.N. students, leading to the Ph.D. Degree

Focus: Research and Nursing Knowledge

Major Courses (31 credits):

Clinical courses in area of specialization (may be transferred)	12
NUR 8010 — Nursing Theory Development	3
NUR 8020 — Nursing Theory: Formulation and Testing	3
NUR 8100 — Issues, Methods and Policies in Nursing (elect twice)	4
NUR 8200 — Topical Seminar in Nursing (elect three times)	9

Philosophy Course (4 credits):

PHI 5230 — Philosophy of Science	4
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Research and Statistics Courses (17-20 credits):

NUR 7010 — Research in Nursing (transfer credit)	3
NUR 7998 — Master's Research Project ¹	3
NUR 8050 — Quantitative Research Methods in Nursing	3
NUR 8060 — Qualitative Research Methods in Nursing	3
PSY 7150 — Quantitative Methods in Psychology I	4
PSY 7160 — Quantitative Methods in Psychology II	4
Cognate Courses	8
Dissertation	30

Total minimum credits: 90-93

Time Limitation: Students have a seven year time limit to complete all requirements for the Ph.D. degree. The seven-year period begins with the end of the semester during which the student was admitted to doctoral study and was enrolled in course work which satisfies requirements for the Ph.D. degree.

Plan of Work: Early in his/her program the doctoral applicant, with the assistance of his/her academic adviser, plans a sequence of studies. The *Plan of Work*, approved by the academic adviser and the Graduate Officer, College of Nursing, should be filed before the student has completed forty graduate credits (including transfer credits). Petition for Transfer of Credits should be attached to the *Plan of Work*. It is the responsibility of the student to file any changes in the *Plan of Work*.

Postdoctoral Study

The purpose of postdoctoral study is to develop scientists capable of sustaining independent research careers focused on generating knowledge within the theoretical perspective of nursing science. Opportunities are available for postdoctoral study on an individual basis in relation to the specific interest of the applicant, and to the availability of expert faculty mentorship. Currently, postdoctoral fellowships supported by funds from the National Institutes of Health are available in the area of Self-Care Research training. Interested students should contact the Office of Academic Affairs in the College of Nursing.

1. May not be required if student has completed Master's-level research study, with scholarly paper including: research domain, collection and analysis of data with interpretation of findings.

ACADEMIC REGULATIONS

For complete information regarding academic rules and regulations of the University, students should consult the General Information section of this bulletin, beginning on page 5. The following additions and amendments pertain to the College of Nursing.

Registration

Each student is required at the beginning of each semester of attendance to register according to the procedure and schedule published in the official University *Schedule of Classes*. Registration must be completed before the student may attend classes. For registration dates, the student should consult the *Schedule of Classes*. A minimum of eight credits in graduate courses constitutes a full-time load for graduate students. The student is required to obtain the signature of his/her major adviser for all changes of elections. Additionally, some courses require approval of the Dean, which may be obtained in the Office of Student Affairs.

Professional Licensure and Liability Insurance

Graduate students must be registered to practice nursing in Michigan and have professional liability and malpractice insurance before registering for courses involving field practice. The minimum amount of liability insurance is \$1,000,000,000/\$3,000,000,000. Each student is to present his/her professional liability and malpractice insurance policy to the Office of Student Affairs no later than July 15th of each year of clinical course work.

Health Requirements

A completed College of Nursing Health Clearance Form must be on file in the Office of Student Affairs no later than July 15th prior to the first clinical course. All students must have an admission physical examination and history and must comply with requirements for a Basic Cardiac Life Support - Level C (BCLS-Level C) course, mumps, Tuberculin Skin (TB) test or chest x-ray, proof of Rubella, Rubeola, and Chicken Pox immunity, and the complete series of inoculations against Hepatitis B virus. Some majors require Advanced Cardiac Life Support Certification (ACLS).

Master's Degree Scholarship

The graduate grading system is intended to reflect high standards of scholarship. The policies for academic progression for graduate students are listed below.

1. A student must earn an overall honor point average of 3.0 or better to be awarded the M.S.N. degree.
2. A student must earn an honor point average of 3.0 or better for advancement from master's applicant status to master's candidate status.
3. A student achieving less than a 3.0 h.p.a. at any point in the program must achieve an h.p.a. of 3.0 or better within the next nine credits. If there is evidence that the goal of a 3.0 h.p.a. is not achievable, the student will be excluded from the program.
4. A student may petition to repeat a graduate course once in which a grade lower than 3.0 is received. No more than two courses may be repeated.
5. A student will be excluded from the program if more than six credits of course work below 2.67 have been earned, whether or not the courses are repeated and better grades are subsequently received.
6. A student will be excluded if a grade below 2.67 is earned in two nursing courses, whether or not the courses are repeated and better grades are subsequently earned.
7. A student will be excluded from the program if a failing grade below 2.0 is earned in a nursing course.

8. A student with qualified admission status must achieve an honor point average of 3.0 or better in M.S.N. course work within the first twelve credits in order to be eligible for regular status. Failure to meet this requirement will result in exclusion from the program.

9. A student may be excluded from the College of Nursing for unsafe and/or unethical conduct in the program without having been previously warned.

10. Students have a six-year time limit to complete all requirements for the master's degree. The six-year period begins with the end of the semester during which the student has taken work which applies toward meeting the requirements of the degree.

Doctoral Degree Scholarship

1. A minimum overall honor point average of at least 3.0 is required for a student to be awarded a Ph.D. degree.

2. Students who earn below a 3.0 in more than two 8000-level courses cannot continue in the doctoral program, whether or not the courses are repeated and better grades are subsequently received.

3. A student may not continue in the doctoral program if more than six credits of course work are below 2.67.

4. A student may petition to repeat a graduate course once in which a grade lower than 3.0 has been earned. No more than two courses may be repeated.

Organizations

The College of Nursing Council is composed of elected representatives of students and faculty. Its purpose is to reflect the interests of the student members to the University and the larger community.

Doctoral Student Forum, addresses the progress, needs and concerns of doctoral nursing students.

Sigma Theta Tau, International Honor Society of Nursing, installed Lambda Chapter at Wayne State University in 1953. Its purposes include recognition of superior scholastic achievement and leadership potential. Candidates for membership are elected annually from baccalaureate and graduate programs.

Chi Eta Phi Sorority, Inc., is a national professional nurses' organization with a focus on African American nursing issues.

The Alumni Association of the College of Nursing is composed of graduates, faculty and former students of the College. This group is part of the general University Alumni Association, but has its own organization. Its purpose is to keep members in close touch with College activities and with professional developments, and to work for the welfare of the College of Nursing.

Student Rights and Responsibilities

Continuance in the College is contingent upon compliance with official rules, regulations, requirements, and procedures of the University and the College of Nursing. *The student is responsible for reading the contents of this bulletin pertinent to the College of Nursing and otherwise becoming informed of and fulfilling all course and degree requirements in proper sequence with satisfactory scholarship.* In case of doubt regarding any matter affecting his or her standing as a student, the student should consult with an adviser. The faculty reserves the right to amend or revise the policies and requirements set forth in the College of Nursing section of this bulletin.

Student Rights and Responsibilities for the University: see page 26.

FINANCIAL ASSISTANCE

The University Office of Scholarships and Financial Aid, 3 West, Helen Newberry Joy Student Services Building (see page 30), administers scholarships, grants, loans and emergency funds available to all University students, and funds provided especially for College of Nursing students. Early application is encouraged.

The College of Nursing offers both scholarship and loan funds. Application materials and deadline dates can be obtained from the Office of Student Affairs, College of Nursing, 10 Cohn. The deadline for application for College of Nursing scholarships is July 1.

College of Nursing Alumni Endowed Scholarship: Any full-time student who is enrolled in a College of Nursing degree program and demonstrated outstanding scholastic achievement, qualities of leadership, and financial need is eligible for this award of \$1000.

College of Nursing Alumni Graduate Scholarship: Any graduate student who is an alumnus of Wayne State University and is enrolled in a College of Nursing degree program is eligible for this award of \$1000.

College of Nursing Alumni Doctoral Scholarship: Any Wayne State University alumnus who is enrolled in the College of Nursing Ph.D. program is eligible for this award of \$1000.

Nurse Scholars Society Scholarship: Any graduate (M.S.N. or Ph.D.) student who intends to enroll full-time in the College of Nursing for at least one year and demonstrates outstanding scholastic achievement (at least 3.8 h.p.a.) and financial need is eligible for this award of \$5000.

Marcia D. Bain Memorial Scholarship: Any graduate student (M.S.N. or Ph.D.) who has a defined interest in psychiatric nursing and demonstrated outstanding scholastic achievement (at least 3.5 h.p.a.) is eligible for this \$1000 award.

College of Nursing Alumni Community Service Award: Any student enrolled in a College of Nursing degree program who demonstrates evidence of community involvement and active contributions to the urban community, and scholastic achievement of 3.0 h.p.a. or above, is eligible for this award of \$1000.

WSHF Student Financial Assistance Award: Any student enrolled in a College of Nursing degree program who demonstrates scholastic achievement, leadership qualities, and financial need is eligible for this award of \$1000.

Gloria Ann Colquhoun Memorial Scholarship: Any full-time master's student enrolled in the College of Nursing who demonstrates financial need, outstanding scholastic achievement, and leadership abilities is eligible for this award of \$1000.

Helen Newberry Joy Scholarship: Any student enrolled in a degree program in the College of Nursing who is in good academic standing and demonstrates financial need is eligible for this award of \$2000.

Steiger Memorial Scholarship: Any full-time or part-time nursing student in a degree program in the College of Nursing who demonstrates financial need is eligible for this award of \$1000.

Professional Nurse Traineeships

Federal funds *may* be available for students in the M.S.N. program who enroll full-time for two consecutive terms. In addition to tuition, the award may include a stipend and book costs. Applications are available in the Office of Student Affairs, College of Nursing.

Graduate-Professional Scholarships

Each year the Graduate School sponsors a competition for Graduate-Professional Scholarships for full academic year tuition awards (Fall and Winter terms). Scholarships are available to qualified applicants pursuing master's or Ph.D. degrees or graduate certificates. Awards are based on merit and are available to both full-time and part-time students, and funds up to twelve graduate credits per term. Most awards provide tuition at Michigan resident rates only; a small number are awarded for the full non-resident rate. Additional infor-

mation and application forms are available from the Scholarships and Fellowships Office of the Graduate School. Application deadline is March 1.

Thomas C. Rumble University Graduate Fellowship

The prestigious Thomas C. Rumble Fellowships are awarded annually for the full academic year (Fall and Winter Terms). Full-time graduate students pursuing a Ph.D. degree are eligible to apply. The award includes: a stipend, tuition of up to twelve graduate credits per term; subsidized medical insurance coverage for twelve months; and a housing allowance for the same twelve-month period. Additional information and applications are available from the Scholarship and Financial Aid Office of the Graduate School. Application deadline is February 1.

Other Sources of Financial Support

Graduate fellowships, teaching assistantships, and research assistantships may be available. For information contact the Office of Student Affairs, College of Nursing.

The National Research Service Awards Program has special nurse fellowships for pre- or post-doctoral students. Qualified students are urged to apply. Contact the University Office for Research and Sponsored Programs (577-2294) for details.

Employment Opportunities for Students

Part-time employment opportunities are available both on and off campus for students. Information about these and other opportunities may be obtained from the University Placement Services, 1001 Faculty/Administration Building.



ADMINISTRATION and FACULTY

Dean: Barbara Redman
Associate Dean, Academic Affairs: Marjorie A. Isenberg
Associate Dean, Research: Ada Jacox
Assistant Dean, Adult Health and Administration:
Stephen Cavanagh
Assistant Dean, Family, Community, and Mental Health:
Chandice Covington
Administrative Assistant Dean for Student Affairs: Vickie Radoya
Assistant to the Dean: Mercedes Wolfe
Administrative Manager: Betty Bontsas

Professors

Marjorie Isenberg, Ada Jacox, Darlene Mood, Marilyn Oberst, Marilyn Oermann, Barbara Redman, Virginia Rice

Associate Professors

Nancy Artinian, Stephen Cavanagh, Chandice Covington, Mary Denyes, Judith Floyd, Effie Hanchett, Ingvarda Hanson, Paulette Hoyer (research), Mary Jirovec, Karen Labuhn, Carolyn Lindgren, Laurel Northouse, Barbara Pieper, Jeannette Poindexter, Fredericka Shea

Assistant Professors

Frances Board (clinical), May Dobal, Marie Draper Dykes, Judith Foulad-bakhsh, Hertha Gast (clinical), Ann Horgas, Kimberly Horns, Judith McComish, Kathleen Moore, Nancy O'Connor, Nancy Troy (clinical), Ching-Eng Wang, Olivia Washington, Feleta Wilson, Frances Wimbush (clinical)

Clinical Instructors

Ann Collins, Margaret Falahee, Anne Marzalek, Susan Szczesny

Senior Lecturer

Mary Delaney

Lecturers

Joann Ashare, Esther Bennett, Joan Bickes, Madeline Diedo, Mary Rose Forsyth, Janet Harden, Dianne Hayward, Kathryn Keves-Foster, Sharon Langlotz, Cynthia Marks, Margie Miller, Barbara Moore, Sukhta Pradatsundarasar, Linda Sikora, Sue Webb, Christine Weber, Barbara Williams

GRADUATE COURSES (NUR)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 507.

6050 Nursing Information Systems. Cr. 3

Prereq: computer literacy. Development of proficiency in use of nursing data and information systems for nursing information, clinical management and research. Ethical and moral implications of computerized information systems and proposed future directions for practice. (Y)

6510 Nursing Economics and Health Care Policy. Cr. 3

Examination of the major health policy and economic issues affecting nursing health care delivery and the role of the nurse. Analysis of health care policy and assessment of the cost of nursing practice. (F,W)

6740 Theoretical Perspectives in Rehabilitation Nursing. Cr. 3

Prereq: B.S.N. or equiv. Developing conceptual framework for providing services to rehabilitation clients. Concepts, theories, current issues of rehabilitation nursing and science. Essential values for practitioners and researchers; role of nurse in rehabilitation setting. (I)

7000 Statistical Methods in Nursing Research. Cr. 4

Prereq: NUR 3400 or equiv. Student computer account required. Introductory statistics course combining lecture, tutorial, and laboratory; includes descriptive, correlational and basic inferential statistics, data processing, and relationship to research. Material fee as indicated in the Schedule of Classes. (F,W)

7010 Research in Nursing. Cr. 3

Prereq: NUR 3400 or equiv. Process of research in nursing. Qualitative and quantitative modes of inquiry studied for their contribution to the development of nursing knowledge. Student competence in the development of research proposals designed for investigation of nursing phenomena. (F,W)

7060 (NUR 7060) Transcultural Health and Life Cycle. (ANT 7250) Cr. 3

Prereq: NUR 7100. Advanced comparative knowledge of transcultural health care values, beliefs, and socialization practices of people from Western and non-Western cultures. Comparative theories and research methods of differences and similarities among different cultures are presented and discussed. Critical issues and problems of child and adult enculturation and socialization relevant to culturally sensitive and competent health care practices. (W)

7070 Transcultural Nursing: Theory, Research and Practice. Cr. 2-3

Prereq: graduate standing. Nature, focus, theory and goals of transcultural nursing. Comparative theories used to identify and analyze health and nursing care beliefs, values and practices of different cultures. Cultural care theory emphasized; nursing decisions and actions with individuals, groups, cultures and institutions to improve care. (S)

7080 Field Practice in Transcultural Nursing. Cr. 2-5

Prereq: NUR 7070. Study and provision of the cultural nursing needs of people from diverse cultures using transcultural nursing principles and care practices under faculty mentorship. (F)

7100 Theoretical Foundations of Nursing Practice. Cr. 3

Prereq: admission to graduate major in nursing. Analysis of conceptual nursing systems, with focus on issues related to theoretical evolution of nursing and development of conceptual models for nursing practice. Open to all nursing majors. (T)

7110 Responses and Experiences in Health and Illness. Cr. 3

Prereq: NUR 7100. Examination of models, theories and research which explain individual responses and experiences in health and illness. Integration of selected health/illness models/theories into nursing framework to direct practice. (F,W)

7120 Advanced Nursing Assessment of Adults. Cr. 6-10

Prereq: consent of instructor, NUR 2010 or equiv.; coreq: 7100, PTH 6500. Advanced health and clinical assessment of individuals within family systems. Recognition of the importance of the continuum of care and the cycle of the illness. Course includes clinical practicum. First clinical course in series of four. (168 clinical hours.) Material fee as indicated in the Schedule of Classes. (F)

7130 Adult Acute Care Nursing I. Cr. 6

Prereq: NUR 7120, PTH 6500 with grades of B or better; coreq: NUR 7110, IHS 7000. Development of clinical expertise required to co-manage the care of persons on chronic illness trajectories and hospitalized for acute exacerbations of their illness. Emphasis on advanced clinical decision making and clinical nursing management including research based interventions. (168 clinical hours.) (W)

7140 Adult Acute Care Nursing II. Cr. 6-10

Prereq: NUR 7130, IHS 7000 with grades of B or better. Continued development of clinical nursing expertise required to co-manage the care of persons on chronic illness trajectories and hospitalized for acute exacerbations of their illness. Students study specific patient populations and provide wholistic care including chronic illness management. (168 clinical hours.) (F)

7150 Clinical Judgment in Nursing I. Cr. 6

Prereq: consent of instructor, NUR 2010; coreq: 7100, PTH 6500. Analysis of nursing explanatory decisions in primary care of adults; advanced nursing assessment of adults; concepts of health and illness. Development of conceptual framework for practice. Clinical practicum in management of episodic illness, twelve hours per week. (F)

7160 Clinical Judgment in Nursing II. Cr. 6

Prereq: NUR 7150, PTH 6500 with grades of B or better; coreq: NUR 7110, IHS 7000. Analysis of managerial decisions in primary care of adults. Application of conceptual framework to nursing practice. Emphasis on management of episodic health problems. Includes clinical practicum, twelve hours per week. (W)

7170 Adult Primary Care I. Cr. 6

Prereq: NUR 7160, IHS 7000 with grades of B or better. Analysis of primary nursing care in health promotion, health maintenance and chronic disease management. Development of collaborative practice. Includes clinical practicum with preceptor, twelve hours per week. (F)

7180 Adult Primary Care II. Cr. 6

Prereq: NUR 7170 with grade of B or better. Synthesis of primary care nursing role. Evaluation of collaborative practice and chronic health problem management. Includes clinical practicum with preceptor, twelve hours per week. (W)

7190 Nursing Care of Groups and Families. Cr. 3

Prereq: NUR 7100. Families and groups as clients; concepts from family, group and nursing theories and research findings used to enhance conceptual framework for nursing practice. (F,W)

7270 Nursing, Parenting, and Families: Synthesis of Scientific Foundations for Practice. Cr. 5

Prereq: NUR 2010, 3400, 7100; PSY 7400; PSL 7500. Advanced practice nursing with women, neonates, children, and their families. Development and use of beginning model of advanced practice nursing, role development, assessments, diagnosis, health promotion. Also requires specialty lectures and 12 hours per week of clinical practicum in one of these areas: women's health, high risk neonatal care, or child health. Material fee as indicated in the Schedule of Classes. (F)

7280 Nursing, Parenting, and Families: Evaluation of Advanced Practice. Cr. 5

Prereq: NUR 2010, 3400, 7100, 7190, 7270, PSY 7400, PSL 7500, or consent of instructor. Evaluation of advanced practice nursing with women, neonates, children and their families. Advanced practice nursing model, role development, prevention of disease and disability, management of acute and chronic illness within diverse cultural, social, familial contexts. Also requires specialty lectures and 12 hours per week of clinical practicum in one of these areas: women's health, high risk neonatal care, or child health. (W)

7290 Nursing, Parenting, and Families: Validation of Advanced Practice. Cr. 5

Prereq: NUR 3000, 3400, 7100, 7110, 7190, 7270, 7280, PSY 7400, PSL 7500. Validation of advanced practice model with women, neonates, children, and their families. Health, development and care of vulnerable populations within broad social context. Also requires specialty lectures and 12 hours of clinical practicum in one of these areas: women's health, high risk neonatal care, or child health. (F)

7350 Adult Critical Care Nursing I. Cr. 6

Prereq: NUR 7120, PTH 6500 with grades of B or better; coreq: NUR 7110, IHS 7000. Development of clinical expertise required to co-manage the care of persons with life threatening illnesses and injuries. Emphasis on advanced clinical decision making, ethical decision making, and clinical management from an advanced nursing practice perspective. Second clinical course in series of four. (168 clinical hours) (W)

7360 Adult Critical Care Nursing II. Cr. 6

Prereq: NUR 7350, IHS 7000 with grades of B or better. Continuation of the development of clinical expertise required to co-manage the care of adult patients with life threatening illness and injury. Emphasis on advanced practice with ill adults from pre-hospitalization through high-tech home care. Third course in series of four. (168 clinical hours) (F)

7370 Advanced Practice Nursing of Adults. Cr. 6

Prereq: NUR 7140 or 7360 with grade of B or better. Synthesis of advanced practice roles with systems management. Emphasis on facilitating integration of multiple roles of practitioner, manager, consultant, educator, collaborator, and scholar. Last course in series of four clinical courses. (168 clinical hours) (W)

7400 Gerontological Nursing: Physical and Functional Aspects of Aging. Cr. 3-6

Prereq: one graduate clinical course in nursing. Analysis of managerial and collaborative role of gerontological nurse specialist with focus on physical aspects of aging and physical problems encountered by elderly clients. Interdisciplinary approach to promoting adaptive responses. GNP nursing students complete 12 hours of clinical per week; CHN nursing students complete 4 hours of clinical per week; IOG certificate students and non-nursing students complete 1 hour of independent study. (B:W)

7410 Gerontological Nursing: Psychosocial Aspects of Aging. Cr. 3-6

Analysis of the managerial and collaborative role of the gerontological nurse in meeting the psychosocial needs of elderly clients. Issues such as grief and loss, cognitive alteration, depression, and alcohol-

ism. Interface with social systems supporting an elder's care including the family, political, and health care networks. GNP nursing students complete 12 clinical hours per week. CHN nursing students complete 4 clinical hours per week. IOG certificate students and non-nursing students complete 1 hour of independent study. (B:W)

7510 Advanced Community Health Nursing I: Urban Assessment. Cr. 4

Prereq. or coreq: NUR 7100; admission to community health nursing major. Theoretical and research-based foundation for assessment of aggregates, populations, and communities in urban settings. Identification of patterns of health and illness; epidemiological and data collection procedures. (B:W)

7540 Advanced Community Health Nursing II: Urban Health Planning and Intervention. Cr. 4

Prereq: NUR 7510, 7100. Urban health issues; strategies for change at the macro level; interventions for targeted geographic communities, aggregations, or populations at risk; intervention models, current research, ethical issues. (B:F)

7560 Advanced Community Health Nursing III: Urban Health Evaluation. Cr. 4

Prereq: NUR 7510, 7540. Evaluation strategies; synthesis of concepts and research; program evaluation designs; focus groups, consumer satisfaction surveys, patient outcomes research, cost-effectiveness and policy analyses. (B:W)

7570 Urban Health. Cr. 3

Prereq. or coreq: NUR 7100. Examination of specific health issues of urban populations at local, national and international levels. Interface of theory, policy and research related to urban health. (B:F)

7600 Biopsychosocial Models of Mental Health and Illness. Cr. 4

Prereq: NUR 7100, PSY 5050; prereq. or coreq: PSY 5070. Theory and research in psychiatric-mental health care; role of advanced nurse-practitioner. Material fee as indicated in the Schedule of Classes. (W)

7620 Group and Environmental Interventions in Advanced Psychiatric Nursing. Cr. 6

Prereq: NUR 7600, 7650. Advanced theoretical knowledge and clinical expertise relative to group and environmental approaches for individuals and families with mental health needs. Weekly clinical practice components; development of expertise in group and milieu treatment strategies. (W)

7630 Individual and Family Intervention in Advanced Psychiatric Nursing. Cr. 6

Prereq: NUR 7600 or 7650. Theoretical knowledge and clinical expertise relative to a variety of treatment approaches with individuals and families who have mental health needs. Weekly clinical practice in a mental health setting where students develop expertise in implementing and evaluating various treatment strategies with individuals and families managing cases and participating on interdisciplinary teams. Material fee as indicated in the Schedule of Classes. (F)

7640 Systems of Care in Psychiatric Nursing. Cr. 4

Trends and directions in psychiatric mental health nursing; political and financial factors and effect on caregiving systems; development of competencies in addressing unmet needs in community mental health and in correcting deficiencies within a mental health system. (F)

7650 Advanced Psychiatric Nursing Assessment and Crisis Intervention. Cr. 5

Prereq: NUR 3000, PSY 5050, PSY 5070; prereq. or coreq: NUR 7600, NUR 7100. Comprehensive biopsychosocial assessments; intervention in psychiatric crisis; disposition plans for clients across the life span. Weekly clinical component; development of expertise in assessment, diagnosis, and crisis intervention in mental health care. (W)

7710 Theoretical Perspectives of Teaching in Nursing. Cr. 3

Theories of learning and teaching, critical thinking, value development, and psychomotor skill development as basis for teaching in nursing. Teaching methods in nursing for classroom and clinical practice. (B:F)

7720 Educational Program Development and Evaluation in Nursing. Cr. 3

Development of educational program in nursing. Test construction, clinical and performance evaluation, and grading. (B:W)

7730 Field Practice in Clinical Teaching. Cr. 3

Prereq: written consent of graduate officer, NUR 7710, 7720. Application experience in educational setting appropriate to student's needs and goals. (B:F)

7750 Administrative Process in Nursing. Cr. 3

Leadership, management, and organizational theories for effective administration of patient care services within health care systems. (F)

7760 Human Resource Management. Cr. 3

Prereq: NUR 7750. Theories of personnel management; emphasis on development and coordination of interdisciplinary professional and non-professional health-care teams. (W)

7770 Field Practice in Nursing Administration. Cr. 2-6

Prereq: NUR 7760. Application and analysis of leadership management and organizational theories in a field setting appropriate to student needs and goals. (Y)

7890 Special Topics in Nursing. Cr. 1-8

Prereq: written consent of graduate officer. Exploration and analysis of topics significant to the development of nursing science and professional practice. (F,W)

7990 Directed Study in Nursing. Cr. 1-8

Prereq: written consent of adviser and graduate officer; consent of instructor. Individually designed courses of study in nursing. (T)

7998 Master's Research Project. Cr. 1-3

Prereq: NUR 7010, consent of adviser and instructor, written consent of graduate officer. Scientific investigation of nursing phenomena using all steps of the research process; includes written report. (T)

8010 Nursing Theory Development. Cr. 3

Prereq: PHI 5230 or equiv. Critical analysis of theory-building strategies relevant to development of nursing knowledge. (W,S)

8020 Nursing Theory: Formulation and Testing. Cr. 3

Prereq: NUR 8010 with grade of A or B. Use of theory building strategies in formulation and testing of middle range nursing theories. Determination of usefulness of middle range theory to advancement of nursing science based on critical review of research literature. Emphasis on theory research linkage in advancing nursing science. (F,S)

8050 Quantitative Research Methods in Nursing. Cr. 3

Prereq: NUR 7010; two semesters of graduate statistics sequence for Ph.D. in nursing program. Open only to doctoral students in Ph.D. nursing program. Advanced research methods course for students in the doctoral program in nursing; focuses on development and evaluation of quantitative research methods and issues relevant to the understanding, explanation and prediction of nursing phenomena. (F,S)

8060 Qualitative Research Methods in Nursing. Cr. 3

Prereq: NUR 7010 or equiv. Qualitative paradigmatic research methods; purposes, characteristics and appropriate ways to use, analyze and evaluate methods as specified by criteria; documentation by relevant literature. (Y)

8100 Issues, Methods and Policies in Nursing. Cr. 2

Prereq: doctoral student; or consent of instructor. Critical examination of issues and policies central to the profession. Critical analysis of methodologies essential to the development of the discipline. (T)

8200 Topical Seminar in Nursing. Cr. 3

Prereq: NUR 8010; doctoral student. Diverse theoretical and research methods employed to critically examine phenomena and domains of inquiry central to the discipline of nursing. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8

Prereq: NUR 7010, consent of instructor, written consent of graduate officer. (T)

9990 Directed Study. Cr. 1-8

Prereq: written consent of instructor and Graduate Officer; consent of adviser. Open only to doctoral students. Individually designed courses in nursing for doctoral students whose needs and interests are not met in scheduled classes. (T)

9998 Doctoral Research Project. Cr. 1-4

Prereq: consent of adviser and instructor; written consent of Graduate Officer. Open only to doctoral students. Pre-dissertation research involving scientific investigation of nursing phenomenon. Written reports. (T)

9999 Doctoral Dissertation Research and Direction.

Cr. 1-16 (Max. 30)

Prereq: consent of adviser, written consent of graduate officer. Offered for S and U grades only. (T)

**College of Pharmacy
and Allied Health Professions**

DEAN: George C. Fuller

Foreword

The College of Pharmacy and Allied Health Professions is a unit of the University formed by the administrative affiliation of the College of Pharmacy and the Division of Allied Health Professions of the School of Medicine. The academic programs of the two units maintain autonomous admission requirements, curricula, degree requirements and academic procedures.

The College offers a variety of graduate-professional and graduate programs designed to provide advanced-level professional training and/or basic research and scholarly activity in the various fields. Detailed information on each program may be found in the departmental sections beginning on page 337.

Location: The College is housed in Shapero Hall, 1400 Chrysler. It is in the heart of the principal metropolitan area of Michigan, as well as in the vicinity of the Detroit Medical Center, the Wayne State University School of Medicine and Shiffman Medical Library. This location provides notable clinical and research settings in which students may participate as part of their professional development.

Graduate Programs

The College offers the following graduate certificate program, and graduate and graduate-professional degrees in the various disciplines of Pharmacy and Allied Health Professions. Admission and degree requirements for each of the programs can be found in the immediately subsequent departmental sections of this bulletin.

DOCTOR OF PHARMACY with a major in Clinical Pharmacy

MASTER OF SCIENCE with majors in:

Health Systems Pharmacy Management

Occupational and Environmental Health Sciences

with specialization in

Industrial Hygiene

Industrial Toxicology

Occupational Medicine

Pharmaceutical Sciences with specialization in

Medicinal Chemistry

Pharmaceutics

Pharmacology/Toxicology

MASTER OF SCIENCE in Anesthesia

MASTER OF SCIENCE in Clinical Laboratory Science

with Specialization in

Clinical Laboratory Instrumentation

Education/Management

Hematology

MASTER OF SCIENCE in Occupational Therapy

MASTER OF SCIENCE in Physician Assistant Studies

MASTER IN PHYSICAL THERAPY

DOCTOR OF PHILOSOPHY with a major in

Pharmaceutical Sciences with specialization in

Medicinal Chemistry

Pharmaceutics

Pharmacology/Toxicology

COLLEGE DIRECTORY

DEAN: George C. Fuller 105 Shapero Hall; 577-1574

ASSOCIATE ACADEMIC DEAN:

Hanley Abramson 119 Shapero Hall; 577-1711

ASSOCIATE DEAN FOR RESEARCH & GRADUATE STUDIES

Steven F. Siconolfi 121 Shapero Hall; 577-5875

ASSISTANT DEAN:

Wynefred H. Schumann 143 Shapero Hall; 577-1719

ADMINISTRATIVE ASSISTANT DEAN:

Gerald W. Aldridge 103 Shapero Hall; 577-1708

PROGRAM COORDINATOR:

Susan I. Christie 127 Shapero Hall; 577-1574

BUSINESS MANAGER:

Mary Donahue 101 Shapero Hall; 577-1576

GRADUATE OFFICER: 121 Shapero Hall; 577-0820

CONTINUING EDUCATION PROGRAMS:

Paul J. Munzenberger 337 Shapero Hall; 577-5384

MINORITY RECRUITMENT AND RETENTION:

T. Delores Clark 145 Shapero Hall; 577-4814

REGISTRAR:

Larry J. Zimmerman 139 Shapero Hall; 577-1716

STUDENT AFFAIRS:

Wynefred H. Schumann 143 Shapero Hall; 577-1719

FACULTY OF PHARMACY

PHARMACEUTICAL SCIENCES:

George B. Corcoran 528 Shapero Hall; 577-1737

PHARMACY PRACTICE:

Richard L. Slaughter 328 Shapero Hall; 577-0824

Susan C. Fagan

FACULTY OF ALLIED HEALTH PROFESSIONS

ANESTHESIA:

Prudentia A. Worth 2V-4, Detroit Receiving Hosp.; 745-3610

CLINICAL LABORATORY SCIENCE . . . 233 Shapero Hall; 577-1384

MORTUARY SCIENCE:

Mary Louise Fritts-Williams 102 Mortuary Science; 577-2050

OCCUPATIONAL AND ENVIRONMENTAL HEALTH:

David J.P. Bassett 628 Shapero Hall; 577-1551

OCCUPATIONAL THERAPY:

Susan Esdaile 309 Shapero Hall; 577-1435

PHYSICAL THERAPY:

Louis R. Amundsen 439 Shapero Hall; 577-1432

PHYSICIAN ASSISTANT STUDIES:

Henry C. Wormser 438 Shapero Hall; 577-1368

RADIATION THERAPY TECHNOLOGY:

Diane Chadwell 117 Shapero Hall Annex; 577-1137

Mailing address for all offices: College of Pharmacy and Allied Health Professions, Wayne State University, Detroit, Michigan 48202

Package Delivery: College of Pharmacy and Allied Health Professions, Wayne State University, 1400 Chrysler, Detroit MI 48207

FACULTY OF PHARMACY

The Faculty of Pharmacy is the component of the College of Pharmacy and Allied Health Professions offering a program of professional pharmaceutical education at the undergraduate, graduate, and graduate-professional levels. The Faculty of Pharmacy strives toward the achievement of five general goals:

1. To provide for the training, education and professional development of pharmacy students and pharmacists.
2. To foster interdisciplinary, community, University and professional interaction in education, research and community development needs.
3. To foster, conduct and promote applied research and problem-oriented basic research as a vital element of pharmaceutical services.
4. To provide for scholarly development, and the dissemination of research findings and scholarly thought.
5. To encourage and support the development of appropriate pharmacist role models for various practice settings.

Pharmacy is a dynamic and essential component of the health care delivery system. Responding to the changing needs of society presents an exciting challenge to which the Faculty of Pharmacy has repeatedly responded. To this end, statements, provisions, or regulations contained herein are neither offers nor parts of a contract and the Faculty of Pharmacy reserves the right to change, at any time, any such statements, provisions or regulations.

Financial Aid

General sources of financial aid for graduate students are listed in the section on Graduate Financial Aid, beginning on page 30 of this bulletin. In addition, there are a limited number of teaching and research assistantships available to qualified students. Inquiries should be directed to the chairperson of the student's department. See also the individual departmental sections, below, for additional details. The following are open to pharmacy students:

Exceptional Financial Need Pharmacy Scholarship: An award of tuition plus a stipend, open to a student demonstrating exceptional financial need as defined by the Federal Government. Contact the University Office of Scholarships and Financial Aid for details.

John Helfman Pharmacy Scholarship: An award of variable amount open to any undergraduate or graduate pharmacy student who has demonstrated outstanding scholastic achievement and financial need. Contact the Student Affairs Office, 143 Shapero Hall, for details.

Accreditation

The Wayne State University College of Pharmacy and Allied Health Professions is a member of the American Association of Colleges of Pharmacy and is accredited by the American Council on Pharmaceutical Education. The degree of Bachelor of Science in Pharmacy conferred by the College is recognized by all state boards of pharmacy.

PHARMACEUTICAL SCIENCES

Office: 528 Shapero Hall; 577-1737

Chairperson: George B. Corcoran

Associate Chairperson: Fusao Hirata

Professors

Hanley N. Abramson, Harold E. Bailey (Emeritus), Martin Barr (Emeritus), George B. Corcoran, Raymond J. Dauphinais (Emeritus), Melvin F.W. Dunker (Emeritus), George C. Fuller, Richard A. Gibbs, Fusao Hirata, Robert T. Louis-Ferdinand, Janardan B. Nagwekar (Emeritus), Craig K. Svensson, Henry C. Wormser

Adjunct Professors

David J.P. Bassett, Joel G. Pounds, Robert A. Levine

Associate Professors

Randall L. Commissaris, Richard A. Gibbs, William J. Lindblad, Richard K. Mulvey (Emeritus), David K. Pitts, Patrick M. Woster

Adjunct Associate Professors

Merlin E. Ekstrom, Peter D. Frade, Eun Woo Lee, Howard J. Normile, J. Christopher States, Alice M. Young

Assistant Professor

Rho-Yu Shen

Adjunct Assistant Professors

Bonitta G. Taffe, Michael J. McCabe, Jr., Steven E. Rose

Graduate Degrees

MASTER OF SCIENCE with a major in *Pharmaceutical Sciences* and specializations in *Medicinal Chemistry, Pharmaceutics, and Pharmacology/Toxicology*

DOCTOR OF PHILOSOPHY with a major in *Pharmaceutical Sciences* and specializations in *Medicinal Chemistry, Pharmaceutics, and Pharmacology/Toxicology*

The pharmaceutical sciences encompass the traditional disciplines of medicinal or pharmaceutical chemistry, pharmaceutics and pharmacology/toxicology. While an undergraduate pharmacy degree is desirable, applicants with a strong background in the behavioral, biological and/or physical sciences will be considered for graduate work in this department. Because of the complementary nature and interrelationships among these disciplines, the emphasis is on an interdisciplinary approach, hence the single major with specializations rather than separate majors. This leads to greater flexibility in designing individualized programs geared to the applicant's preparation and interests.

The specialty in medicinal chemistry is primarily concerned with the development of new compounds which may be of value in the diagnosis and treatment of disease. Included are applications of organic chemistry, natural product chemistry, biochemistry, pharmacology and the relationships between chemical structure, physical properties and biological activity.

Within pharmaceutics, the areas of biopharmaceutics and pharmacokinetics are concerned with the kinetics of absorption, distribution, metabolism and excretion of drugs and model compounds. Physical pharmacy deals with physical chemical principles and their application to the pharmaceutical sciences. Also of interest in pharmaceutics is the application of biopharmaceutics, pharmacokinetics and physical pharmacy to pharmaceutical product development.

Pharmacology/toxicology deals with the principles and mechanisms of drug action on biological systems and the toxicological aspects of drugs and other substances.

Master of Science with a Major in Pharmaceutical Sciences

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. For the master's degree program, with a major in pharmaceutical sciences, the following criteria must also be satisfied:

The General portion of the Graduate Record Examination is required of all applicants.

Applicants whose native language is other than English must demonstrate proficiency in English prior to beginning the program (see page 18).

In addition to the regular university application, the applicant must also submit the following:

1. A general statement (300-400 words, typewritten) including a resume, reasons for selecting the program, career objectives and possible research interests.

2. Three letters of recommendation.

If an applicant's undergraduate preparation is considered deficient for advanced work in the pharmaceutical sciences, additional work may be required at the undergraduate level. All prerequisite credits must be earned prior to or concurrent with the first graduate credits.

Application materials may be obtained by contacting the Chairperson, Graduate Program Committee, Department of Pharmaceutical Sciences, College of Pharmacy and Allied Health Professions, Wayne State University, Detroit, Michigan 48202.

DEGREE REQUIREMENTS: The Master of Science with a major in Pharmaceutical Sciences is offered only as a Plan A master's program requiring thirty credits, including an eight-credit thesis. All course work must be completed in accordance with the academic procedures of the Graduate School governing graduate scholarship and degrees; see the section of this bulletin beginning on page 16.

Courses required will vary with the student's previous preparation and the area of specialization. These will be determined by the student's graduate adviser, with review and approval by the college graduate officer by means of the *Plan of Work*.

The thesis and at least half of the remaining credits must be in the major. At least eight credits in the major, in addition to the thesis, must be in courses open only to graduate students (courses numbered 7000 and above).

To qualify for the degree, all courses specified on the *Plan of Work* must be satisfactorily completed with a cumulative honor point average of at least 3.0. In addition, a final oral examination covering course work and the thesis is required of all candidates.

After successful completion of the oral examination, an original and two unbound copies of the approved thesis must be delivered to the Graduate School Office (4300 Faculty/Administration Building) for binding. A copy of the binding receipt must be provided to the college graduate officer before the degree can be certified.

Selection of Adviser: A faculty member designated by the chairperson of the Graduate Program Committee will serve as temporary adviser to the applicant during the first semester. During this semester, the applicant is encouraged to meet with all graduate faculty in the specialty, discuss their research interests, choose an adviser and obtain his/her consent to direct the student's research. This adviser will then sign the student's program requests, *Plan of Work* and other necessary forms.

Candidacy: Applicants apply to the college graduate officer (121 Shaper Hall) to become degree candidates by filing a *Plan of Work*, approved by their adviser, prior to the completion of twelve graduate credits in the program. To qualify, applicants must exhibit satisfactory scholarship (graduate honor point average of 3.0 or above), have completed any prerequisite and/or corequisite courses specified at the time of admission and have regular admission status. Applicants

who have not been advanced to candidacy by the time twelve graduate credits have been completed may be denied further registration in the program.

Academic Progress: At the conclusion of the Fall and Winter semesters, progress of every student in the program will be reviewed by the departmental Graduate Program Committee. Each student is evaluated in terms of performance in course work, research progress, fulfillment of University requirements for filing a *Plan of Work*, thesis of dissertation outline, etc., and overall professional development. The evaluation at the conclusion of the winter semester includes a written assessment by the faculty adviser of the student's strengths and weaknesses, as well as an indication of how any deficiencies will be addressed.

A student will be placed on probation for any of the following reasons;

1. Qualified admission status at the time of matriculation;
2. Receipt of a grade lower than 'B' in any course;
3. Notification from the adviser that the student is not making adequate progress in his/her research.

The student will be informed in writing, at the time of being placed on probation, of the requirements for removal from probationary status.

A student may be excluded from the program for the following reasons:

1. Failure to comply with requirements set by the departmental committee;
2. Receipt of two or more grades below 'B' in any single semester;
3. Unauthorized leave of absence.

Leave of absence: A leave of absence is defined as an absence from the graduate program for one or more semesters and is only permitted for extenuating personal or medical reasons. Students who are granted a leave of absence may be required to do remedial work, depending on the length of absence from the program.

Students who have not registered for two or more consecutive semesters will be placed on inactive status and must obtain the permission of the department Graduate Program Committee and the college graduate officer before registering again.

Doctor of Philosophy with a Major in Pharmaceutical Sciences

Admission: In addition to the requirements of the Graduate School (see page 16), the applicant should present a bachelor's or master's degree with a major in one of the behavioral, biological, pharmaceutical or physical sciences.

The General portion of the Graduate Record Examination is required of all applicants.

Applicants whose native language is other than English must demonstrate proficiency in English prior to beginning the program (see page 18).

In addition to the regular University application, the applicant must also submit the following.

1. A general statement (300-400 words, typewritten) including a resume, reasons for selecting the program, career objectives and possible research interests.
2. Three letters of recommendation.

Application materials may be obtained by contacting the Chairperson, Graduate Program Committee, Department of Pharmaceutical Sciences, College of Pharmacy and Allied Health Professions, Wayne State University, Detroit, Michigan 48202.

DEGREE REQUIREMENTS: Candidates for the doctoral degree must complete ninety credits beyond the baccalaureate degree, in compliance with the academic procedures of the Graduate School; see page 27. The only exception to those regulations is the waiver of the foreign language requirement for doctoral students in the pharmaceutical sciences.

Selection of Adviser: See above, under Master's Degree Program.

Candidacy: see the requirements of the Graduate School, page 28.

Academic Progress: See above, under Master of Science Program.

Leave of Absence: See above, under Master's Degree Program.

Student Manual

The student manual, provided by this department, also contains policy statements that may pertain to admission, candidacy, and degree requirements. Students should be sure to consult this manual for the current statements on these policies.

Financial Aid

General sources of financial aid for graduate students are listed in the section on Graduate Financial Aid, beginning on page 30 of this bulletin. In addition, there are a limited number of teaching and research assistantships available to qualified students. Inquiries should be directed to the Chairperson, Graduate Program Committee, Department of Pharmaceutical Sciences. The following scholarship is open to pharmaceutical sciences students:

John Helfman Pharmacy Scholarship: An award of variable amount open to any undergraduate or graduate pharmacy student who has demonstrated outstanding scholastic achievement and financial need. Contact the Student Affairs Office, 143 Shapero Hall, for details.

GRADUATE COURSES (PSC)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 507.

6000 Fundamentals of Drug Design. Cr. 2

Prereq: last professional year, graduate, or graduate professional standing; consent of instructor. Discussion of practical applications of theoretical consideration in the design of new drug molecules. Topics include quantitative structure-activity relationships, metabolic antagonism, enzyme inhibition, and pro-drugs. (Y)

6100 Survey of Pharmacology I. Cr. 3

Prereq: BIO 3400, CHM 2260, MAT 2010; graduate standing or consent of instructor. Survey of pharmacology for entering graduate students in the pharmaceutical sciences. Emphasis on new drug development. (F)

6600 (PPR 6600) Biostatistics. Cr. 3

Prereq: last professional year, graduate, or graduate professional standing. Student computer account required. Use and interpretation of statistical tools in the pharmaceutical and clinical literature. (F)

6720 Techniques in Animal Experimentation. Cr. 1

Prereq: consent of instructor. Ethical, legal, and experimental considerations of animal experimentation. Training in the humane care of animals; techniques used in pharmaceutical research. (Y)

6800 Introduction to Research. Cr. 2

Prereq: last professional year, graduate, or graduate professional standing. Introduction to research in the pharmaceutical sciences for students contemplating or beginning graduate study. (Y)

6890 Toxicology and Adverse Drug Reactions. Cr. 3

Prereq: last professional year, graduate, or graduate professional standing. Study of toxicology and adverse drug reactions including metabolism, hypersensitivity, carcinogenicity, drug-drug interactions, and other factors hazardous to human health. Material fee as indicated in the Schedule of Classes. (Y)

7010 Advanced Principles of Drug Action I. Cr. 4

Prereq: PSC 3110, IHS 3100 or equiv.; coreq: PSC 3210, IHS 3200 or equiv. Fundamental principles of drug action, emphasis on molecular and biochemical aspects. Role of animal models in assessing drug effects; interaction of drugs with cellular macromolecules; qualitative and quantitative assessment of drug effect. (B:W)

7020 Advanced Principles of Drug Action II. Cr. 4

Prereq: PSC 3110, 3210, IHS 3100, IHS 3200, or equiv. Continuation of PSC 7010. Drug disposition; pharmacogenetics; mechanisms of dependence, tolerance and withdrawal; mechanisms of drug-induced toxicity. (B:F)

7040 Fundamentals of Pharmacokinetics. Cr. 3

Prereq: consent of instructor. No credit after PPR 4230. Survey of basic principles of pharmacokinetics with emphasis on factors influencing dosage regimen design. (Y)

7100 Pharmacodynamics I. Cr. 3

Prereq: B.S. in pharmacy, biology or chemistry; consent of instructor; coreq: PSC 4100 for students lacking pharmacology background. Introduction to pharmacodynamics; conferences, demonstration and review of research from pharmacology literature. (F)

7120 Advanced Pharmacology I. Cr. 2

Prereq: consent of instructor. Study of the theories of drug action; cellular pharmacology. (I)

7600 Recreational Drug Use and Drug Abuse: Advanced. Cr. 3-4

Prereq: consent of instructor. Pharmacology and toxicology, both clinical and animal, associated with recreationally-used agents; treatment of acute and chronic problems associated with these agents; concept of chronic drug administration and abuse as disease state. (Y)

7700 Advanced Medicinal Chemistry. Cr. 3

Prereq: consent of instructor. No credit after PSC 4300. Analysis of relationship of physical-chemical principles and drug action. In-depth discussions of structure-activity relationships among drugs affecting the central and autonomic nervous systems as well as the cardiovascular and renal systems. (Y)

7800 Research Techniques in Medicinal Chemistry. Cr. 1-4 (Max. 6, M.S.; max. 12, Ph.D.)

Prereq: consent of instructor. Laboratory work employing modern techniques available in medicinal chemistry; application of basic principles to graduate study and research. (T)

7810 Research Techniques in Pharmaceutics. Cr. 1-4 (Max. 6, M.S.; max. 12, Ph.D.)

Prereq: consent of instructor. Laboratory work employing modern techniques available in pharmaceutics: application of basic principles to graduate study and research. (T)

7820 Research Techniques in Pharmacology. Cr. 1-4 (Max. 6, M.S.; max. 12, Ph.D.)

Prereq: consent of instructor. Laboratory work employing some of the modern techniques available in pharmacology, including the application of basic principles to graduate study and research. (T)

7850 Seminar in Medicinal Chemistry. Cr. 1-2 (Max. 3)

Prereq: consent of adviser. Reports and discussions by students and members of the staff concerning current developments in the field of medicinal chemistry. (T)

7860 Seminar in Pharmaceutics. Cr. 1-2 (Max. 3)

Prereq: consent of adviser. Reports and discussions by students and members of the staff concerning current developments in the field of pharmaceutics. (T)

7870 Seminar in Pharmacology. Cr. 1-2 (Max. 3)

Prereq: consent of adviser. Reports and discussions by students and staff members concerning recent advances in pharmacology. (T)

7999 Master's Essay Direction. Cr. 2 (2 Req., Max. 2)

Prereq: consent of adviser. (T)

8040 Pharmacokinetics and Biopharmaceutics. Cr. 2-4

Prereq: consent of instructor. Advanced treatment of the kinetics of drug absorption, distribution, metabolism and excretion; the utilization of these considerations in pharmaceutical formulation, design of dosage forms and drug structure-activity relationships. (Y)

8650 Special Topics in Medicinal Chemistry. Cr. 2 (Max. 6, M.S.; max. 12, Ph.D.)

Prereq: consent of instructor. Recent developments in medicinal chemistry. Topics under investigation and of current interest offered in different semesters. (T)

8660 Special Topics in Pharmaceutics. Cr. 2 (Max. 6, M.S.; max. 12, Ph.D.)

Prereq: consent of instructor. Recent developments in pharmaceutics. Topics under investigation and of current interest offered in different semesters. (T)

8670 Special Topics in Pharmacology. Cr. 2 (Max. 6, M.S.; max. 12, Ph.D.)

Prereq: consent of instructor. Recent developments in pharmacology. Topics under investigation and of current interest offered in different semesters. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req., max. 8)

Prereq: consent of adviser. (T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16 (30 req.; max. 30)

Prereq: consent of doctoral adviser. Offered for S and U grades only. (T)

PHARMACY PRACTICE

Office: 328 Shapero Hall; 577-0824

Chairperson: Richard L. Slaughter

Associate Chairperson: Susan C. Fagan

Professors

Michael J. Rybak, Richard L. Slaughter, Jesse C. Vivian

Adjunct Professors

Richard L. Lucarotti, Douglas A. Miller, Larry K. Shoup, Barbara J. Zarowitz

Associate Professors

David J. Edwards, Susan C. Fagan, Linda A. Jaber, Paul J. Munzenberger, Wynefred H. Schumann, Maureen A. Smythe, James G. Stevenson, James E. Tisdale

Adjunct Associate Professors

J.V. Anandan, Paul W. Bush, Kenneth H. Fish, Michael Powell, Gregory S. Umstead, Bruce E. Vinson

Assistant Professors

Diane Cappelletty, Pramodini B. Kale, Christine Karam, Patty Keys, Nikki Milan, Martha J. Miller, Lynette Moser, Denise Rhoney, Renu Singh, Gerallynn B. Smith, Jacqueline Wilson

Adjunct Assistant Professors

David S. Bach, Elaine M. Bailey, Albert Bajjoka, Iman Bajjoka, Julie R. Berman, Len Billingsley, Clarence Chant, Daniel M. Colaluca, Philip Cole, William A. Cornelis, Clifford Crabtree, John Devlin, William Drake, Gerald L. Emmer, Suzette Habowski, Susan Hart, Richard H. Jennings, Beverly P. Kershaw, Ronald H. Lukasiewicz, John Mitchell, Merlin V. Nelson, Cynthia L. Quince, Randy F. Schad, Mary Jane Sudekum, Edward Szandrik, Mark Touchette, Paul C. Walker, David B. Wright, Chris Zimmerman

Graduate Degrees

DOCTOR OF PHARMACY with a major in Clinical Pharmacy

MASTER OF SCIENCE with a major in Health Systems Pharmacy Management

The College offers to qualified applicants a graduate professional program and a graduate program leading to the Doctor of Pharmacy (Pharm.D.) and Master of Science degrees, respectively. The Doctor of Pharmacy program develops a highly qualified expert in pharmacotherapy who is prepared to provide professional leadership in the practice of pharmacy. The Master of Science with a major in health systems pharmacy management offers students an opportunity to develop the skills necessary to successfully manage, supervise and improve pharmaceutical services in hospitals and other organized health care settings.

Doctor of Pharmacy with a Major in Clinical Pharmacy

This program requires twenty-one months (five semesters) for completion. Two semesters of intensive didactic work are followed by twelve one-month clinical clerkship rotations.

To remain current with the American Council on Pharmaceutical Education (ACPE) accreditation standards, the department is anticipating changing to an entry-level Doctor of Pharmacy degree in 2001. For specific curricular changes, students should consult the departmental student manual.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. For the Doctor of Pharmacy program, the following criteria must also be satisfied.

To qualify for admission, the applicant must have a Bachelor of Science degree in Pharmacy, or anticipation of earning such a degree within one year's time, from a college of pharmacy which is accredited by the American Council on Pharmaceutical Education (ACPE). Applicants with degrees from foreign schools will be considered if, in the judgement of the Doctor of Pharmacy Admission Committee, the preparation of the student is essentially equivalent to that provided by ACPE-accredited programs.

Applicants whose native language is other than English must demonstrate proficiency in English prior to beginning the program (see page 18).

The applicant must demonstrate the academic and professional maturity, competency and promise required by the program. If an applicant's honor point average is below 2.6, successful completion of special examinations may be required. Deficiencies which an applicant may have in the nature or quality of his/her academic preparation will require successful completion of prerequisite or corequisite courses as prescribed for the applicant as a condition of admission.

Application: In addition to the usual university application materials, a departmental application, a 300-400 word statement of personal objectives and three personal evaluations must be submitted. After favorable preliminary review, the applicant must appear for a personal interview with the admission committee.

Applicants should request an admissions packet from the Chairperson, Admissions Committee, Doctor of Pharmacy Program, Department of Pharmacy Practice, College of Pharmacy and Allied Health Professions, Wayne State University, Detroit, Michigan 48202.

Completed applications must be received by January 15 to be assured of a decision on admissibility by the beginning of the fall semester. Admission is granted only for the fall semester.

A \$250.00 non-refundable acceptance fee applicable toward the first semester's tuition is required when an offer of admission is made.

Degree Requirements

Candidates must complete a minimum of thirty-two credits subsequent to undergraduate study in pharmacy with the equivalent of one academic year of full-time study in residence at Wayne State University. All course work must be completed in accordance with the academic procedures of the Graduate School governing graduate scholarship and degrees; see the section of this bulletin beginning on page 16. The combined undergraduate and graduate professional program must include the following courses or their equivalent:

PPR 6600	Biostatistics
PPR 6610	D. P. & T. 1: Cardiology
PPR 6620	D. P. & T. 2: Infectious Disease
PPR 6630	D. P. & T. 3: Hematology/Oncology
PPR 6640	D. P. & T. 4: Psychiatry/Neurology
PPR 6650	D. P. & T. 5: Gastroenterology/Endocrinology
PPR 6660	D. P. & T. 6: Nephrology/Fluid and Electrolytes
PPR 6670	D. P. & T. 7: Rheumatology/Pediatrics/Patient Assessment
PPR 6680	D.P. & T. 8: Immunology/Pulmonary/Toxicology
PPR 7600	Introduction to Clinical Research
PPR 7670	Applied Pharmacokinetics: Advanced
PPR 7840	Seminar in Clinical Pharmacy

The following one-month clinical clerkship rotations are required:

PPR 7010	Clinical Pharmacy Clerkship: Adult Internal Medicine
PPR 7020	Clinical Pharmacy Clerkship: Ambulatory/Family Practice
PPR 7040	Clinical Pharmacy Clerkship: Pediatrics
PPR 7120	Clinical Pharmacy Clerkship: Cardiology
PPR 7130	Clinical Pharmacy Clerkship: Infectious Disease
PPR 7230	Clinical Pharmacy Clerkship: Adult Intensive Care I
PPR 8010	Clinical Pharmacy Clerkship: Adult Internal Medicine II
PPR 8230	Clinical Pharmacy Clerkship: Adult Intensive Care II

An additional four one-month elective clinical clerkship rotations may be chosen from the following list. Required rotations may also be taken as an elective. Students may not take more than two nonpa-

tient care rotations, and no rotation can be repeated more than once. Only one research rotation is permitted.

PPR 7030	Clinical Pharmacy Clerkship: Drug Information
PPR 7050	Clinical Pharmacy Clerkship: Psychiatry
PPR 7060	Clinical Pharmacy Clerkship: Clinical Pharmacokinetics
PPR 7070	Clinical Pharmacy Clerkship: Surgery
PPR 7080	Clinical Pharmacy Clerkship: Pediatric Hematology - Oncology
PPR 7110	Clinical Pharmacy Clerkship: Geriatrics
PPR 7140	Clinical Pharmacy Clerkship: Oncology
PPR 7150	Clinical Pharmacy Clerkship: Parenteral/Enteral Nutrition
PPR 7170	Clinical Pharmacy Clerkship: Pharmacy Practice Management
PPR 7210	Clinical Pharmacy Clerkship: Clinical Research
PPR 7220	Clinical Pharmacy Clerkship: Pediatric Intensive Care
PPR 7240	Clinical Pharmacy Clerkship: Burn Intensive Care
PPR 7250	Clinical Pharmacy Clerkship: Emergency Medicine
PPR 7260	Clinical Pharmacy Clerkship: Neurology
PPR 7270	Clinical Pharmacy Clerkship: Nephrology
PPR 7300	Clinical Pharmacy Clerkship: Infectious Diseases in Immunocompromised Patients
PPR 7310	Clinical Pharmacy Clerkship: Toxicology
PPR 7320	Clinical Pharmacy Clerkship: Home Health Care
PPR 7330	Clinical Pharmacy Clerkship: ID-Epidemiology
PPR 7340	Clinical Pharmacy Clerkship: Geriatric Psychiatry
PPR 7480	Clinical Pharmacy Clerkship: Special Pharmacy Practice Experience

Academic Progress: Continuance in the Doctor of Pharmacy program depends upon satisfactory progress as determined by the Doctor of Pharmacy Steering Committee. Students who have not registered for two or more consecutive semesters will be placed on inactive status and must obtain the permission of the Doctor of Pharmacy Steering Committee before registering again.

Student Manual

The student manual, provided by this department, also contains policy statements that may pertain to admission, candidacy, and degree requirements. Students should be sure to consult this manual for the current statements on these policies.

Financial Aid

General sources of financial aid for graduate students are listed in the section on Graduate Financial Aid, beginning on page 30 of this bulletin. The following scholarships are open to pharmacy practice students:

Burroughs Wellcome Company Doctor of Pharmacy Scholarship: An award of \$500 open to any first year student enrolled in the Doctor of Pharmacy program who demonstrates financial need and outstanding financial achievement. Application deadline is February 21. Contact the Student Affairs Office, 143 Shapero Hall, for details.

John Helfman Pharmacy Scholarship: An award of variable amount open to any undergraduate or graduate pharmacy student who has demonstrated outstanding scholastic achievement and financial need. Contact the Student Affairs Office, 143 Shapero Hall, for details.

Master of Science with a Major in Health Systems Pharmacy Management

This program may be pursued on either a full-time basis or a part-time basis. A combined residency/master's program is also available (see below).

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. For the master's degree program, with a major in health systems pharmacy management, the following criteria must also be satisfied:

Applicants must have an undergraduate pharmacy degree from a college of pharmacy accredited by the American Council on Pharmaceutical Education or equivalent.

Applicants whose native language is other than English must demonstrate proficiency in English prior to beginning the program (see page 18).

Three letters of recommendation and a personal interview are required of all applicants.

Admission is granted only for the fall semester. In order to assure a decision on admissibility, completed applications should be received no later than May 1.

Students applying for the combined residency/master's program should begin the application process simultaneously with application to the hospital and/or ASHP Residency Matching Program. The application deadline for the combined residency/master's program is January 15.

Application materials may be obtained by contacting James G. Stevenson, Health Systems Pharmacy Management Program Director, Department of Pharmacy Practice, College of Pharmacy and Allied Health Professions, Wayne State University, Detroit, Michigan 48202.

Every applicant is carefully evaluated in order to select students having the academic and professional maturity and competency essential to successfully meet program requirements. Admission decisions are the responsibility of the Master's Program Admissions Committee.

DEGREE REQUIREMENTS: The program consists of a minimum of thirty-two credits taken under one of the following plans. All course work must be completed in accordance with the academic procedures of the Graduate School governing graduate scholarship and degrees; see the section of this bulletin beginning on page 16.

Plan A: requires a minimum of twenty-four credits in course work plus a thesis (eight credits).

Plan B: requires a minimum of twenty-eight credits in course work plus an essay (four credits).

The thesis or essay and at least half of the credits of course work must be in the major. At least eight credits in the major, in addition to the thesis or essay, must be in courses open only to graduate students (numbered 7000 and above).

Core Curriculum

Each candidate will complete the core curriculum listed below, an essay or a thesis and sufficient electives to total thirty-two credits. Electives will vary with the student's previous preparation and interests. These will be determined mutually by the students and the program director, with review and approval by the college graduate officer by means of the *Plan of Work*.

B A 7040 Management and the Organization
PPR 6600 Biostatistics
PPR 7500 Special Topics in Health Systems Pharmacy Management
PPR 7510 Fiscal Management of Pharmacy Resources in Health Systems
PPR 7700 Organization of Pharmaceutical Services in Health Systems I
PPR 7710 Organization of Pharmaceutical Services in Health Systems II
PPR 7999 or PPR 8999
— Master's Essay Direction
— Master's Thesis Research and Direction

Selected Electives

(Other graduate-level electives may be selected with the approval of the program director and the college graduate officer)

C M 7240 Epidemiology
ECO 5550 Economics of Health Care
MGT 7640 Management of Human Resources
MGT 7680 Executive Decision Making
PPR 6100 Legal Environment in Pharmacy
PPR 7520 Management of Computer Resources in Health Systems
P S 7360 Health Care Management and Service Delivery
P S 7380 Financial Administration of Health Services
P S 7430 Health Care Policy in the United States

To qualify for the degree, all courses specified on the *Plan of Work* must be satisfactorily completed with a cumulative honor point average of at least 3.0. In addition, a final oral examination covering course work and the thesis or essay is required of all candidates. For Plan A candidates, after successful completion of the oral examination, an original and two unbound copies of the approved thesis must be delivered to the Graduate School Office (4300 Faculty/Administration Building) for binding. A copy of the binding receipt must be provided to the college graduate officer before the degree can be certified.

For Plan B candidates, after successful completion of the oral examination, three bound copies of the essay must be provided by the candidate, one to the program director and two to the college graduate officer, prior to certification of the degree.

Selection of Adviser: The program director will serve the student's official academic adviser for the duration of the program. At the appropriate time, the candidate will select a co-adviser who will function as the research adviser for the essay or thesis.

Candidacy: Applicants apply to the college graduate officer (121 Shapero Hall) to become degree candidates by filing a *Plan of Work*, approved by the program director, prior to the completion of twelve graduate credits in the program. To qualify, applicants must exhibit satisfactory scholarship (graduate honor point average of 3.0 or above), have completed any prerequisite and/or corequisite courses specified at the time of admission and have regular admission status. Applicants who have not been advanced to candidacy by the time twelve graduate credits have been completed may be denied further registration in the program.

Academic Progress: Continuance in the master's program depends upon satisfactory progress as determined by the program director and the college graduate officer. Students who have not registered for two or more consecutive semesters will be placed on inactive status and must obtain the permission of the program director and the college graduate officer before registering again.

Combined Residency Master's Program

This option allows a pharmacy resident to simultaneously complete an American Society of Health-Systems Pharmacists (ASHP) accredited residency and earn the master of science degree over a twenty-four month period. Residency program sites in the Detroit metropolitan area include: Children's Hospital of Michigan, Detroit Receiving Hospital and University Health Center, Harper-Grace Hospital, Sinai Hospital, Providence Hospital, William Beaumont Hospital. For further information regarding the combined residency/master's program contact: James G. Stevenson, Health Systems Pharmacy Management Program Director, Department of Pharmacy Practice, College of Pharmacy and Allied Health Professions, Wayne State University, Detroit, Michigan 48202.

GRADUATE COURSES (PPR)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 507.

5000 (W) Drug Literature Evaluation. Cr. 2

Prereq: PHA 4250. Principles and methods of evaluating the medical literature with an emphasis on that relating to the practice of pharmacy. Writing Intensive course in third professional year; in-class and out-of-class writing assignments required. (W)

5190 Pre-Pharm.D. Externship/Clerkship. Cr. 1-15

Prereq: admission to Pharm.D. program. Special pharmacy externship/clerkship experience conducted at selected approved sites and offered solely to students who have been admitted to the Doctor of Pharmacy Program. Credit assigned is based on departmental review of program objectives and time commitment. (I)

5280 Ethics and Professional Responsibility. Cr. 2

Prereq: PPR 3120, 4210, 3210, 3220 and third professional year status. Offered for S and U grades only. General ethical principles and how these principles relate to legal duties and rights to guide professional pharmacy practice and conduct. (Y)

5290 Pharmacy Practice and the Health Care System. Cr. 3

Prereq: PPR 4210. Offered for S and U grades only. Review of the history, development and present status of the health care system in the United States. Discussion of trends and projected future development of the system; discussion of the roles and strategies for effective pharmacy practice within the system. (W)

5300 Critical Analysis of Drug Related Problems. Cr. 2

Prereq: fifth year standing. Development of ability to analyze and solve pharmacotherapeutic problems using a student-centered, problem-based learning model. (Y)

6070 Principles of Pharmacoeconomics. Cr. 3

Prereq: consent of instructor. Principles and tools used in economic evaluation of medications and technologies used in pharmacoeconomic research. Material fee as indicated in the Schedule of Classes. (F)

6100 Legal Environment in Pharmacy. Cr. 3

Prereq: PPR 3120, 5280, 4210, 5290, graduating senior or graduate student status. Formulation, interpretation, performance and discharge of contracts and liabilities for breach; various tort liabilities, including pharmacy malpractice; insurance issues; regulation of business professional and trade practices in pharmacy; employment laws. (I)

6120 Home Health Care. Cr. 3

Prereq: PHA 4250, PPR 4110, PPR 4210; or graduate or graduate professional standing. Review of the availability and applications of

surgical appliances and other health-care devices used in patient care. Material fee as indicated in the Schedule of Classes. (F)

6600 Biostatistics. (PSC 6600) Cr. 3

Prereq: last professional year, graduate, or graduate professional standing. Student computer account required. Use and interpretation of statistical tools in the pharmaceutical and clinical literature. (F)

6610 Disease Processes and Therapeutics I: Cardiology. Cr. 2

Prereq: admission to Pharm.D. program. Pathophysiology of disease states, clinical pharmacology and therapeutic application of drugs: cardiology. Material fee as indicated in the Schedule of Classes. (Y)

6620 Disease Processes and Therapeutics II: Infectious Diseases. Cr. 2

Prereq: admission to Pharm.D. program. Pathophysiology of disease states, clinical pharmacology and therapeutic application of drugs: infectious diseases. Material fee as indicated in the Schedule of Classes. (Y)

6630 Diseases Processes and Therapeutics III: Hematology/Oncology. Cr. 2

Prereq: admission to Pharm.D. program. Pathophysiology of disease states, clinical pharmacology and therapeutic application of drugs: hematology and oncology. Material fee as indicated in the Schedule of Classes. (Y)

6640 Disease Processes and Therapeutics IV: Psychiatry/Neurology. Cr. 2

Prereq: admission to Pharm.D. program. Pathophysiology of disease states, clinical pharmacology and therapeutic application of drugs: psychiatry and neurology. Material fee as indicated in the Schedule of Classes. (Y)

6650 Disease Processes and Therapeutics V: Gastroenterology/Endocrinology. Cr. 2

Prereq: admission to Pharm.D. program. Pathophysiology of disease states, clinical pharmacology and therapeutic application of drugs: gastroenterology and endocrinology. Material fee as indicated in the Schedule of Classes. (Y)

6660 Disease Processes and Therapeutics VI: Nephrology/Fluid and Electrolytes. Cr. 1-3

Prereq: admission to Pharm.D. program. Pathophysiology of disease states, clinical pharmacology and therapeutic application of drugs: nephrology and fluid electrolytes. Material fee as indicated in the Schedule of Classes. (Y)

6670 Disease Processes and Therapeutics VII: Rheumatology, Pediatrics and Patient Assessment. Cr. 2

Prereq: admission to Pharm.D. program. Pathophysiology of disease states, clinical pharmacology and therapeutic application of drugs: rheumatology, pediatrics, patient assessment. Material fee as indicated in the Schedule of Classes. (Y)

6680 Disease Processes and Therapeutics VIII: Immunology/Pulmonary/Toxicology. Cr. 2

Prereq: admission to Pharm. D. program. Pathophysiology of disease states, clinical pharmacology and therapeutic application of drugs: immunology, pulmonary, and toxicology. Material fee as indicated in the Schedule of Classes. (F)

6860 Principles of Pediatric Pharmacy. Cr. 3

Prereq: last professional year, graduate, or graduate professional standing. Common pediatric problems and diseases including poisonings, cystic fibrosis, sickle-cell anemia, placental transfer of drugs and teratology. (Y)

6870 Geriatric Pharmacy Practice. Cr. 2

Prereq: last professional year standing, graduate or graduate professional standing. Topics presented are those concerned with the aging process as it relates to the more common disease states with focus on drug therapy. The role of the pharmacist in the care of the elderly is also emphasized. Material fee as indicated in the Schedule of Classes. (Y)

7010 Clinical Pharmacy Clerkship: Adult Internal Medicine I. Cr. 2-4 (Max. 4)

Prereq: admission to Pharm.D. program. Offered for S and U grades only. Major disease entities; emphasizes drug therapies and methodology of choice. Participation in patient rounds, medication profile and adverse drug reaction systems, admission and discharge drug histories, and in-service clinical education: internal medicine. (T)

7020 Clinical Pharmacy Clerkship: Ambulatory/Family Practice. Cr. 2-4 (Max. 4)

Prereq: admission to Pharm.D. program. Offered for S and U grades only. Major disease entities; emphasis on drug therapies and methodology of choice. Participation in patient rounds, medication profile and adverse drug reaction systems, admission and discharge drug histories and in-service clinical education: ambulatory and family practice. (T)

7030 Clinical Pharmacy Clerkship: Drug Information. Cr. 2-4 (Max. 4)

Prereq: admission to Pharm.D. program. Offered for S and U grades only. Instruction and participation in the provision of drug information services in health-care institutions. (T)

7040 Clinical Pharmacy Clerkship: Pediatrics. Cr. 2-4 (Max. 4)

Prereq: admission to Pharm.D. program. Offered for S and U grades only. Major disease entities; emphasizes drug therapies and methodology of choice. Participation in patient rounds, medication profile and adverse drug reaction systems, admission and discharge drug histories and in-service clinical education: pediatrics. (T)

7050 Clinical Pharmacy Clerkship: Psychiatry. Cr. 2-4 (Max. 4)

Prereq: admission to Pharm.D. program. Offered for S and U grades only. Major disease entities; emphasis on drug therapies and methodology of choice. Participation in patient rounds, medication profile and adverse drug reaction systems, admission and discharge drug histories and in-service clinical education: psychiatry. (T)

7060 Clinical Pharmacy Clerkship: Clinical Pharmacokinetics. Cr. 2-4 (Max. 4)

Prereq: admission to Pharm.D. program. Offered for S and U grades only. Instruction and participation in the provision of pharmacokinetic services in health-care institutions. (T)

7070 Clinical Pharmacy Clerkship: Surgery. Cr. 2-4 (Max. 4)

Prereq: admission to Pharm.D. program. Offered for S and U grades only. Major disease entities; emphasis on drug therapies and methodology of choice. Participation in patient rounds, medication profile and adverse drug reaction systems, admission and discharge drug histories and in-service clinical education: surgery. (T)

7080 Clinical Pharmacy: Pediatric Hematology - Oncology. Cr. 2-4 (Max. 4)

Prereq: admission to Pharm. D. program. Offered for S and U grades only. Major disease entities; emphasis on drug therapies and modalities of choice, participation in patient rounds, medication profile and adverse drug reaction systems, admission and discharge drug histories; in-service clinical education: pediatric hematology - oncology. (T)

7110 Clinical Pharmacy Clerkship: Geriatrics. Cr. 2-4 (Max. 4)

Prereq: admission to Pharm.D. program. Offered for S and U grades only. Major disease entities; emphasizes drug therapies and methodology of choice. Participation in patient rounds, medication profile and adverse drug reaction systems, admission and discharge drug histories and in-service clinical education: geriatrics. (T)

7120 Clinical Pharmacy Clerkship: Cardiology. Cr. 2-4 (Max. 4)

Prereq: admission to Pharm.D. program. Offered for S and U grades only. Major disease entities; emphasis on drug therapies and methodology of choice. Participation in patient rounds, medication profile and adverse drug reaction systems, admission and discharge drug histories and in-service clinical education: cardiology. (F,W)

7130 Clinical Pharmacy Clerkship: Infectious Disease. Cr. 2-4 (Max. 4)

Prereq: admission to Pharm.D. program. Offered for S and U grades only. Major disease entities; emphasis on drug therapies and methodology of choice. Participation in patient rounds, medication profile and adverse drug reaction systems, admission and discharge drug histories and in-service clinical education: infectious disease. (T)

7140 Clinical Pharmacy Clerkship: Oncology. Cr. 2-4 (Max. 4)

Prereq: admission to Pharm.D. program. Offered for S and U grades only. Major disease entities; emphasis on drug therapies and methodology of choice. Participation in patient rounds, medication profiles and adverse drug reaction systems, admission and discharge drug histories and in-service clinical education: oncology. (T)

7170 Clinical Pharmacy Clerkship: Pharmacy Practice Management. Cr. 2-4 (Max. 4)

Prereq: admission to Pharm.D. program. Offered for S and U grades only. Development of a knowledge base in pharmacy practice management via the application of communications, resource management, problem solving, and interprofessional skills in an organized health care setting. (T)

7210 Clinical Pharmacy Clerkship: Clinical Research. Cr. 2

Prereq: admission to Pharm.D. program. Offered for S and U grades only. Intensive participation in clinical research activity. (T)

7230 Clinical Pharmacy Clerkship: Adult Intensive Care I. Cr. 2-4 (Max. 4)

Prereq: admission to Pharm.D. program. Offered for S and U grades only. Major disease entities; emphasis on drug therapies and modalities of choice, participation in patient rounds, medication profiles and adverse drug reaction systems, and in-service clinical education in adult intensive care. (T)

7240 Clinical Pharmacy Clerkship: Burn Intensive Care. Cr. 2-4 (Max. 4)

Prereq: admission to Pharm.D. program. Offered for S and U grades only. Major disease entities; emphasis on drug therapies and modalities of choice. Participation in patient rounds, medication profile and adverse drug reaction systems, admission and discharge drug histories, and in-service clinical education: Burn ICU. (T)

7250 Clinical Pharmacy Clerkship: Emergency Medicine. Cr. 2-4 (Max. 4)

Prereq: admission to Pharm.D. program. Offered for S and U grades only. Major disease entities, emphasis on drug therapies and methodologies of choice, participation in patient rounds, medication profile and adverse drug reaction systems, admission and discharge drug histories and in-service clinical education: emergency medicine. (T)

7260 Clinical Pharmacy Clerkship: Neurology. Cr. 2-4 (Max. 4)

Prereq: admission to Pharm.D. program. Offered for S and U grades only. Major disease entities, emphasis on drug therapies and methodologies of choice, participation in patient rounds, medication profile and adverse drug reaction systems, admission and discharge drug histories and in-service clinical education: neurology. (T)

7270 Clinical Pharmacy Clerkship: Nephrology. Cr. 2-4 (Max. 4)

Prereq: admission to Pharm. D. program. Offered for S and U grades only. Major disease entities, emphasis on drug therapies and methodologies of choice, participation in patient rounds, medication profile and adverse drug reaction systems, admission and discharge drug histories, and in-service clinical education: nephrology. (T)

7300 Clinical Pharmacy Clerkship: Infectious Diseases in Immunocompromised Patients. Cr. 2-4 (Max. 4)

Prereq: admission to Pharm.D. program. Offered for S and U grades only. Major disease entities; emphasis on drug therapies and modalities of choice, participation in patient rounds, medication profiles and adverse drug reaction systems, and in-service clinical education; infectious diseases in immunocompromised patients. (T)

- 7310 Clinical Pharmacy Clerkship: Toxicology. Cr. 2-4 (Max. 4)**
Prereq: admission to Pharm.D. program. Offered for S and U grades only. Major disease and exposure entities; emphasis on drug therapies and modalities of choice, participation in patient rounds, medication profiles and adverse drug reaction systems, and in-service clinical education; toxicology. (T)
- 7330 Infectious Diseases: Epidemiology. Cr. 2-4**
Prereq: admission to Pharm.D. program; PPR 7130. Offered for S and U grades only. Experience in intensive culture and sensitivity monitoring program in community-based teaching hospital. (T)
- 7340 Geriatric Psychiatry. Cr. 2-4**
Prereq: admission to Pharm.D. program. Offered for S and U grades only. Inpatient experience; pharmacotherapy of patients in geropsychiatric unit at Harper Hospital. (T)
- 7350 Management of Anticoagulation Therapy. Cr. 2**
Offered for S and U grades only. One-month experiential learning course based at a community hospital. Student is involved in comprehensive management of anticoagulation therapy. (T)
- 7480 Clinical Pharmacy Clerkship: Special Pharmacy Practice Experience. Cr. 2-4 (Max. 4)**
Prereq: admission to Pharm.D. program and approval of Pharm.D. program committee. Offered for S and U grades only. Intensive practicum experience to develop knowledge base in specific area of pharmacy practice at selected approved sites with experiential programs. (T)
- 7500 Special Topics in Health Systems Pharmacy Management. Cr. 2**
Prereq: consent of instructor. Practice management problems pertinent to current health systems pharmacy. Problem-centered, participant involved case studies and methodology for the health systems pharmacy graduate student. (F)
- 7510 Fiscal Management of Pharmacy Resources in Health Systems. Cr. 3**
Prereq: consent of instructor. Lecture and case studies on managing the fiscal resources of the health system pharmacy; reimbursement for pharmacy services. (W)
- 7520 Management of Computer Resources in Health Systems. Cr. 2**
Prereq: consent of instructor. Lecture and case studies on managing computer resources for health systems pharmacy. (W)
- 7600 Introduction to Clinical Research. Cr. 2**
Prereq: PPR 6600. Introduction to experimental design, research protocol development, grant preparation, data analysis, and report writing in clinical pharmacy research. (W)
- 7670 Applied Pharmacokinetics: Advanced. Cr. 4**
Prereq: consent of instructor; graduate standing. Application of pharmacokinetic principles to drug therapy, to improve the use of drugs in the treatment of disease and to critically interpret the clinical literature. Material fee as indicated in the Schedule of Classes. (W)
- 7700 Organization of Pharmaceutical Services in Health Systems I. Cr. 2**
Prereq: consent of instructor. Development of pharmaceutical services in our nation's hospitals and related health systems; the clinical pharmacist's role in developing medication safety policies and procedures, drug distribution and control systems, preventing medication errors and adverse drug reactions. (F)
- 7710 Organization of Pharmaceutical Services in Health Systems II. Cr. 2**
Prereq: PPR 7700 and consent of instructor. Determining the pharmaceutical service needs of health systems; developing special services such as drug information; special formulation; utilization of electronic data processing; personnel training and management. (W)
- 7810 Intravenous Therapeutics: Advanced. Cr. 2**
Prereq: consent of instructor. No credit after PHA 5810, PHA 6810 or PPR 5810. Physiology of fluid balance, fluid balance abnormalities, acid-base balance, treatment of fluid abnormalities, maintenance requirements, electrolyte replacement, and diseases commonly associated with fluid imbalance. Material fee as indicated in the Schedule of Classes. (F,W)
- 7840 Seminar in Clinical Pharmacy. Cr. 1-3**
Prereq: admission to Pharm.D. program. Reports and discussions by students and members of the staff concerning current developments in clinical pharmacy. Material fee as indicated in the Schedule of Classes. (F,W)
- 7880 Seminar in Health Systems Pharmacy Management. Cr. 1-2 (Max. 3)**
Prereq: consent of adviser. Reports and discussions by students and members of the staff concerning current developments in the field of health systems pharmacy. (Y)
- 7990 Directed Study in Pharmacy Practice. Cr. 1-3 (Max. 5)**
Prereq: written consent of adviser and graduate officer. Open only to Pharm.D. and M.S. students in hospital pharmacy. Minor projects in pharmacy for students whose interests and needs are not adequately met in other scheduled classes or in the doctoral research project. (T)
- 7999 Master's Essay Direction. Cr. 1-4 (Max. 4)**
Prereq: consent of adviser. (T)
- 8010 Clinical Pharmacy Clerkship: Adult Internal Medicine II. Cr. 2-4 (Max. 4)**
Prereq: admission to Pharm.D. program; prereq. or coreq: PPR 7010. Offered for S and U grades only. Advanced focus on major disease entities; emphasis on drug therapies and methodology of choice, participation in patient rounds, medication profile and ADRs, admission and discharge drug histories, and in-service clinical education in adult internal medicine. (T)
- 8230 Clinical Pharmacy Clerkship: Adult Intensive Care II. Cr. 2-4 (Max. 4)**
Prereq: admission to Pharm.D. program; prereq. or coreq: PPR 7230. Offered for S and U grades only. Advanced focus on major disease entities; emphasis on drug therapies and methodology of choice, participation in patient rounds, medication profiles and ADRs, admission and discharge drug histories, and in-service clinical education in adult intensive care. (T)
- 8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.; max. 8)**
Prereq: consent of adviser. (T)

FACULTY OF ALLIED HEALTH PROFESSIONS

The Faculty of Allied Health Professions is the component of the College of Pharmacy and Allied Health Professions offering programs at the undergraduate and/or graduate levels in a variety of allied health disciplines. Graduate programs are available in anesthesia (nurse), clinical laboratory science, occupational and environmental health sciences, occupational therapy, physical therapy, and physician assistant studies. The Faculty of Allied Health Professions strives toward the achievement of three broad educational goals:

1. To provide effective programs of instruction at both the undergraduate and the graduate levels.
2. To promote research programs of excellence in both basic and applied fields.
3. To achieve optimum interaction of the University and the community in common educational, research and community development interests.

The Allied Health Professions are dynamic and essential components of the health care delivery system. Responding to the changing needs of society presents an exciting challenge to which the Faculty of Allied Health Professions has repeatedly responded. To this end, statements, provisions, or regulations contained herein are neither offers nor parts of a contract and the Faculty of Allied Health Professions reserves the right to change, at any time, any such statement, provision or regulation.

Financial Aid

General sources of financial aid for graduate students are listed in the section on Graduate Financial Aid, beginning on page 30 of this bulletin. See also the individual departmental sections, below, for additional details.



ANESTHESIA

Office: Room 2V-4, Detroit Receiving Hospital; 745-3610

Chairperson: Prudentia A. Worth

Educational Coordinator: Valdor Haglund

Assistant Professors

Valdor Haglund, Celestine Harrigan, Prudentia Worth

Instructors

Kathleen Cook, Karen Crawforth, Phil Mangahas, Mary Walczyk

Adjunct Associate Professor

Roy Aston

Adjunct Assistant Professor

Samuel Perov

Adjunct Instructors

Mary Case, Donna Auger-Devoc, Barbara Grover, Philip Kyko, Wanda Lowery, Kim Mason, Jan Ollila, William Olson, John Perkowski, Anne Ranella, Joanne Rush, Orlando Sison

Graduate Degree

MASTER OF SCIENCE in Anesthesia

Anesthesia is a dynamic health profession which deals primarily with methods and procedures for rendering a patient insensible to pain and emotional stress during surgical, obstetrical and some diagnostic and medical procedures. The practice of anesthesia by a nurse is an expanded role which implements both nursing and medical functions. Anesthesia education builds upon a previously established nursing base, incorporating a rigorous scientific foundation, including general and regional anesthesia and the art of anesthesia practice. The functions of nurse anesthetists include, but are not limited to: pre- and post-operative assessment, planning and managing total anesthesia care to all patients regardless of level of acuity, serving as a team member for trauma airway management, and cardiopulmonary resuscitation. The nurse anesthetist provides high quality anesthesia care in collaboration with an anesthesiologist or other fully-privileged physician or dentist.

Accreditation: The program is fully accredited by the Council on Accreditation of Nurse Anesthesia Educational Programs and the Commission on Recognition of Post-secondary Accreditation (CORPA).

Master of Science in Anesthesia

The Department of Anesthesia, based at Detroit Receiving Hospital and University Health Center, offers two educational tracks leading to a Master of Science in Anesthesia. Information brochures and application packets are available from the Department of Anesthesia. Enrollment occurs annually in the fall. To be eligible for interview, a completed application must be on file with the department no later than August 31. Academic achievement and a personal interview with the program admission panel are equally weighed in deciding on admission to the program.

Track I: This curriculum is for the baccalaureate-prepared nurse in science or nursing who upon completion of the anesthesia curriculum becomes eligible to take a national certification examination to become a Certified Registered Nurse Anesthetist (CRNA). The program is twenty-four months full-time. The didactic curriculum is integrated throughout the twenty-four months with clinical experiences involving several clinical facilities. The Detroit Medical Center hospitals, as well as the Veteran's Administration and other major hospitals participate as clinical affiliation sites.

Track II: This curriculum is designed for the practicing CRNA with a baccalaureate degree who wishes to expand his/her skills in teaching

and administration. Track II students have a maximum of four years to complete the program including a terminal research project.

Admission to this program is contingent upon admission to the Graduate School (see page 16) and the following professional program requirements: submission of general exam GRE scores, current Registered Nurse licensure, academic records demonstrating an undergraduate h.p.a. of 3.0 or above, and a biographical essay. Applicants must possess a Bachelor of Science in Nursing, or in an appropriate science, with eight credits in chemistry (inorganic, organic biochemistry), and four credits in biology including microbiology. This degree must be less than ten years old.

Applicants whose native language is other than English must demonstrate proficiency in English prior to beginning the program (see page 18).

Track I Candidates: Additional Admission Requirements

Applicants must:

1. Have an honor point average of 3.0 or above, and a science h.p.a. of 3.0 or above.
2. Have completed the following graduate level prerequisite courses, or their equivalents, prior to enrollment in anesthesia. Two of the prerequisites must be taken prior to the department interview and completed with 3.0 average or above.
 PSL 5550 Physiologic Anatomy
 EER 7630 Fundamentals of Statistics
 C M 6010 Biostatistics I
 C M 7210 Research Methods
 EER 7640 Fundamentals of Qualitative Research
 NUR 7010 Research in Nursing
3. Have current certification in Advanced Cardiac Life Support.
4. Have a minimum of one year of experience (two years preferred) in a critical care nursing area. In order of preference, recommended areas are: SICU, MICU, combined SICU-MICU and CCU (or combination). Obstetrics, Post Anesthesia Recovery, Operating Room and Emergency Room experiences receive partial recognition.
5. Provide a physical examination report prior to enrollment.
6. Provide references from the dean or director of the applicant's school of nursing, present employer or supervisor and a practicing colleague who is familiar with the applicant's work as a registered nurse.
7. Submit copy of military discharge if applicable.
8. Be available for a personal interview.

Track II Candidates: Additional Admission Requirements

Applicants must:

1. Have current certification and recertification as a nurse anesthetist.
2. Have completed suitable course work in anatomy, physiology and pharmacology for anesthesia.
3. Submit letters of reference from the applicant's current chief nurse anesthetist, chief anesthesiologist and one other professional colleague.
4. Provide transcripts of both nursing and nurse anesthesia programs.
5. Be available for a personal interview.

DEGREE REQUIREMENTS: Candidates for the Master of Science in Anesthesia must complete the course requirements for Track I (sixty credits) or Track II (thirty-two credits) as listed below. All course work must be completed in accordance with the academic procedures of the Graduate School governing graduate scholarship and degrees; see the section of this bulletin beginning on page 16. The professional program requirements exceed the academic requirements and are described in the Departmental program guidelines for students.

Track I: Course Requirements

AN 7020	.....	Clinical Anesthesia Practicum I
AN 7030	.....	Clinical Anesthesia Practicum II
AN 7040	.....	Clinical Anesthesia Practicum III
AN 7050	.....	Clinical Anesthesia Practicum IV
AN 7060	.....	Clinical Anesthesia Practicum V
AN 7100	.....	Pharmacology I
AN 7110	.....	Pharmacology II
AN 7120	.....	Advanced Pharmacology of Anesthesia
AN 7150	.....	Principles of Anesthesia I
AN 7160	.....	Principles of Anesthesia II
AN 7170	.....	Principles of Anesthesia III
AN 7240	.....	Pathophysiology for the Anesthetist
AN 7500	.....	Chemistry and Physics of Anesthesia
AN 7600	.....	Regional Anesthesia
AN 7620	.....	Respiratory Care
AN 7690	.....	Advanced Clinical Anesthesia Practice and Research I
AN 7700	.....	Advanced Clinical Anesthesia Practice and Research II
AN 7730	.....	Process of Teaching
AN 7780	.....	Professional Dimensions of Anesthesia Practice
AN 7880	.....	Anesthesia Seminar
AN 7890	.....	Terminal Project
PSL 7010	.....	Basic Graduate Physiology Lecture I
PSL 7030	.....	Basic Graduate Physiology Lecture II

Track II: Course Requirements

Track II candidates may vary course selections with consent of their adviser.

AN 7600	.....	Regional Anesthesia
AN 7730	.....	Process of Teaching
AN 7880	.....	Anesthesia Seminar
AN 7890	.....	Terminal Project
EER 7630	.....	Fundamentals of Statistics
PSL 5550	.....	Physiologic Anatomy
PSL 7010	.....	Basic Graduate Physiology Lecture I
PSL 7030	.....	Basic Graduate Physiology Lecture II
NUR 7010	.....	Research in Nursing
NUR 7710	.....	Theoretical Perspectives of Teaching in Nursing
NUR 7720	.....	Educational Program Development & Evaluation in Nursing

To qualify for the degree, all specified courses must be satisfactorily completed with a cumulative honor point average of at least 3.0.

Advisers: Track I students have a uniform *Plan of Work* and the faculty serve as advisers throughout the program and terminal project. Track II students have an adviser assigned to them by the department chairperson. This adviser approves the *Plan of Work* and other necessary forms.

Candidacy: Track I applicants will be advanced to candidacy upon completion of the first semester's courses with a cumulative honor point average of 3.0 or above and no grade below a 'B.' Classes are only offered annually, thus repeating a class following a grade of 'C' is not feasible. The professional program's requirements on grades for each class are listed in the Department of Anesthesia guidelines and reviewed with students during orientation.

Track II applicants apply to the college graduate officer (121 Shaper Hall) to become degree candidates by filing a *Plan of Work*, approved by their adviser, prior to the completion of twelve graduate credits in the program. To qualify, applicants must exhibit satisfactory scholarship (graduate honor point average of 3.0 or above), have completed any prerequisite and/or corequisite courses specified at the time of admission and have regular admission status. Applicants who have not been advanced to candidacy by the time twelve graduate credits have been completed may be denied further registration in the program.

Academic Progress: Continuance in the master's program depends upon satisfactory progress as determined by the adviser and the college graduate officer. Students who have not registered for two or more consecutive semesters will be placed on inactive status and must obtain the permission of the Department Chairperson and the college graduate officer before registering again.

Student Manual

The student manual, provided by this department, also contains policy statements that may pertain to admission, candidacy, and degree requirements. Students should be sure to consult this manual for the current statements on these policies.

GRADUATE COURSES (AN)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509 .

7020 Clinical Anesthesia Practicum I. Cr. 2

Prereq: Registered Nurse, admission to professional curriculum. Introduction to clinical anesthesia application. (W)

7030 Clinical Anesthesia Practicum II. Cr. 2

Prereq: AN 7020. Continuation of AN 7020. (S)

7040 Clinical Anesthesia Practicum III. Cr. 3

Prereq: AN 7030. Continuation of AN 7030. (F)

7050 Clinical Anesthesia Practicum IV. Cr. 3

Prereq: AN 7040. Continuation of AN 7040. (W)

7060 Clinical Anesthesia Practicum V. Cr. 2

Prereq: AN 7050. Continuation of AN 7050. (S)

7100 Pharmacology I. Cr. 3

Prereq: Registered Nurse, admission to professional curriculum. Introduction to anesthetic pharmacology; focus on pharmacotherapeutics of drugs used in modern anesthesia practice. Discussion of primary anesthesia agents. Material fee as indicated in the Schedule of Classes. (F)

7110 Pharmacology II. Cr. 3

Prereq: Registered Nurse, AN 7100. Analysis of theories of pharmacology. Material fee as indicated in the Schedule of Classes. (W)

7120 Advanced Pharmacology of Anesthesia. Cr. 2

Prereq: R.N., admission to professional curriculum. General qualitative and quantitative aspects of pharmacology. Interaction and kinetics of pharmacologic agents and their relationship to anesthetic practice. Material fee as indicated in the Schedule of Classes. (F)

7150 Principles of Anesthesia I. Cr. 5

Prereq: Registered Nurse, admission to professional curriculum. Principles and usage of all anesthesia equipment including electronic instrumentation. Theoretical exploration of various techniques of anesthesia. Material fee as indicated in the Schedule of Classes. (F)

7160 Principles of Anesthesia II. Cr. 3

Prereq: Registered Nurse, AN 7150. Advanced knowledge in application and use of modern anesthesia monitoring technology. Material fee as indicated in the Schedule of Classes. (W)

7170 Principles of Anesthesia III. Cr. 2

Prereq: AN 7150, 7160, Registered Nurse, admission to professional curriculum. Continuation of AN 7160. Material fee as indicated in the Schedule of Classes. (S)

7240 Pathophysiology for the Anesthetist. Cr. 2

Prereq: Registered Nurse, AN 7210. Analysis of disease processes; correlation of pathophysiology with pharmacological principles of anesthesia care. Material fee as indicated in the Schedule of Classes. (S)

7500 Chemistry and Physics of Anesthesia. Cr. 2

Prereq: Registered Nurse, admission to professional curriculum. Analysis and principles of chemistry and physics as applied to anesthesia. Material fee as indicated in the Schedule of Classes. (F)

7600 Regional Anesthesia. Cr. 2

Prereq: Registered Nurse; written consent of adviser; admission to the professional curriculum. Directed study project required of graduate students. Review of the anatomy and physiology of the spinal cord and peripheral nerves and the pharmacology of local anesthetic agents. Techniques of administration and management of selected regional anesthetics. Material fee as indicated in the Schedule of Classes. (S)

7620 Respiratory Care. Cr. 2

Prereq: Registered Nurse; AN 7200 or equiv.; admission to professional program. Advanced evaluation of cardiopulmonary/respiratory complication. Clinical anesthesia care. (S)

7690 Advanced Clinical Anesthesia Practice and Research I. Cr. 2

Prereq: Registered Nurse, AN 7040, admission to professional curriculum. Advanced clinical anesthesia practice which involves transferring theoretical concepts into practical experiences for the individualized patient. Material fee as indicated in the Schedule of Classes. (F)

7700 Advanced Clinical Anesthesia Practice and Research II. Cr. 1

Prereq: AN 7690, admission to professional curriculum. Material fee as indicated in the Schedule of Classes. (W)

7730 Process of Teaching. Cr. 2-3

Prereq: CRNA, Registered Nurse, consent of adviser. Instruction in and clinical application of nurse anesthesia process. Material fee as indicated in the Schedule of Classes. (S)

7780 Professional Dimensions of Anesthesia Practice. Cr. 2

Prereq: consent of adviser. Analysis of role of professional anesthesia associations, anesthesia accreditation agencies, hospital and governmental regulatory agencies relating to nurse anesthesia practice. Material fee as indicated in the Schedule of Classes. (W)

7880 Anesthesia Seminar. Cr. 1 (Max. 4)

Prereq: CRNA; consent of adviser. Current developments in concepts and theories of nurse anesthesia. (T)

7890 Terminal Project. Cr. 2-3

Prereq: CRNA; consent of adviser. Culmination of graduate course work in anesthesia. Material fee as indicated in the Schedule of Classes. (T)

CLINICAL LABORATORY SCIENCE

Office: 233 Shapero Hall; 577-1384
Acting Administrative Director: Gerald W. Aldridge
Technical Director: Carol Watkins

Associate Professor

Dorothy M. Skinner (Emeritus)

Assistant Professors

Janet Brown-Castillo, Bouchra Harake, M. Ann Wallace

Graduate Degree

MASTER OF SCIENCE in Clinical Laboratory Science
with specializations in clinical laboratory instrumentation,
education/management, and hematology

Master of Science in Clinical Laboratory Science

By means of a core curriculum, all graduate students in clinical laboratory science are provided with a background in management skills. Additional course work and research pertaining to the specialty area and electives complete the program. The management specialty provides the student with the experience and knowledge necessary for developing administrative acumen and managerial skills.

In addition to the specialties, individual programs may be designed in other areas of clinical laboratory science. Students are encouraged to select electives that will accommodate their specific needs and interests. Students are invited to contact the department for current curricula.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. In addition, applicants must satisfy the following criteria (qualified admissions are not granted in clinical laboratory science):

1. have credentials must be approved by the department, and
2. have at least one year of practice experience prior to starting the graduate program.

Applicants whose native language is other than English must demonstrate proficiency in English prior to beginning the program (see page 18).

Application: In addition to the regular university application, a departmental application and two evaluations are required. Application materials may be obtained by contacting the Department of Clinical Laboratory Science, College of Pharmacy and Allied Health Professions, Wayne State University, Detroit, Michigan 48202. Applications are accepted throughout the year. Accepted students may begin in any semester.

DEGREE REQUIREMENTS for the Master of Science in Clinical Laboratory Science vary depending upon the area of specialization. The minimum requirement for the master's degree is thirty-four credits, and includes an essay or terminal project (three credits). Each candidate must complete a core curriculum, those courses required for the specialization, and sufficient electives to total the minimum required. All course work must be completed in accordance with the academic regulations of the Faculty of Allied Health Professions and the Graduate School governing scholarship and degrees; see the section of this bulletin beginning on page 16.

Electives will vary according to the student's previous preparation and interests. These will be determined mutually by the student and the adviser, with review and approval by the college graduate officer by means of the *Plan of Work*.

The essay and at least half of the remaining credits must be in the major. At least eight credits in the major, in addition to the thesis or essay, must be in courses open only to graduate students (numbered 7000 and above).

To qualify for the degree, all courses specified on the *Plan of Work* must be satisfactorily completed with a cumulative honor point average of at least 3.0.

Adviser: The Technical Director is the academic adviser for all students in the program.

Candidacy: Applicants apply to the College Graduate Officer (121 Shapero Hall) to become degree candidates by filing a *Plan of Work*, approved by their adviser, prior to the completion of twelve graduate-credits in the program. To qualify, applicants must exhibit satisfactory scholarship (graduate honor point average of 3.0 or above), have completed any prerequisite and/or corequisite courses specified at the time of admission, and have regular admission status. Applicants who have not been advanced to candidacy by the time twelve graduate credits have been completed may be denied further registration in the program.

Academic Progress: Continuance in the master's program depends upon satisfactory progress as determined by the adviser and the College Graduate Officer. (NOTE: Only one grade of 'C' is permitted. A second 'C' is cause for automatic dismissal from the program.) Students who have not registered for two or more consecutive semesters will be placed on inactive status and must obtain the permission of the adviser and the College Graduate Officer before registering again.

Student Manual

The student manual, provided by this department, also contains policy statements that may pertain to admission, candidacy, and degree requirements. Students should be sure to consult this manual for the current statements on these policies.

Financial Aid

Sources of financial aid for graduate students are enumerated in the section on Graduate Financial Aid beginning on page 30 of this bulletin. In addition, a teaching assistantship may be available to a qualified student. Inquiries should be directed to the technical director.

GRADUATE COURSES (CLS)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

5070 Clinical Pathology Correlation. Cr. 1-2

Prereq: senior standing in clinical laboratory science or consent of instructor. Correlation of laboratory data and clinical history through the analysis of case studies. (W,S)

5150 Medical Informatics. Cr. 2

Prereq: junior standing or above. Information system models in an interdisciplinary healthcare environment. Survey of hardware and software platforms; patient information data repositories; medical imaging; applications to clinical pathways, utilization review, financial analysis, managed care. Material fee as indicated in the Schedule of Classes. (W,S)

5550 Applied Genetics Technology. Cr. 4

Prereq: junior in CLS/HST Program. Review of molecular biology applicable to current testing systems. Laboratory techniques to elucidate molecular structure and disease states; DNA hybridization, agarose gel electrophoresis; southern and western blot techniques; DNA sequencing. Material fee as indicated in the Schedule of Classes. (W)

7020 Pathophysiology of Hemostasis. (PSL 7830) Cr. 1

Review of the normal mechanism of hemostasis; the mechanism and management of bleeding and coagulation disorders. (F)

7070 Graduate Instrumentation. Cr. 3

In-depth analysis and application of theories of operation, maintenance and troubleshooting of analytical clinical laboratory instrumentation. Tours of laboratory instrumentation. Material fee as indicated in the Schedule of Classes. (S)

7090 Instruction in Teaching Techniques. (OT 7510) Cr. 2

Discussion and planning exercises in allied health education. Topics include: preparing objectives, educational strategies, evaluation and curricula in allied health programs. (F)

7110 Current Problems and Regulations in Hospital Laboratory Functions. Cr. 2

Study of the organizational, fiscal, staffing and disciplinary problems facing the clinical laboratory manager; legislative and regulatory bodies affecting laboratory operations. (W)

7300 (OT 7300) Professional Literature. Cr. 3

Prereq: consent of adviser. Analysis and appraisal of current occupational therapy and related professional literature. Overall approach to research reporting. (F)

7870 Special Topics in Clinical Laboratory Instrumentation. Cr. 3

Prereq: CLS 7070 and 7880. Topics to be covered include: method evaluation of commercial clinical laboratory correlation of results; troubleshooting; quality control; computer applications. (Y)

7880 Clinical Chemistry. Cr. 4

Prereq: graduate clinical laboratory science student; or CLS 3080, 3180, BMB 5010 or CHM 6600. Chemistry, significance, and applications of current techniques in clinical chemistry. Immunochemistry and radiochemistry in clinical laboratory. Term paper, seminars required. Material fee as indicated in the Schedule of Classes. (W)

7890 Study in Clinical Laboratory Science Instruction. Cr. 1-2

Participation and involvement in teaching an undergraduate clinical laboratory science course. (T)

7991 Directed Study. Cr. 1-8

Prereq: consent of adviser and graduate officer. Two course formats are available: (1) a seminar consisting of discussion and student presentations of particular topics in clinical laboratory science; (2) independent study, under faculty guidance, in an area of clinical laboratory science. To fulfill core course requirements, each student must elect this course twice: once as a seminar, and once as an independent study. (T)

7999 Master's Essay Direction. Cr. 1-3

Student must present, in both written and oral forms, an original contribution to clinical laboratory science that will improve the practice of the chosen area of concentration. Scientific research and development of methods for improved education and management in the clinical setting are encouraged. (T)

8990 Terminal Project. Cr. 1-3

The student must make an original contribution to clinical laboratory science, enlarging or improving the areas of administration, education, or immunohematology. Written and oral project. (T)



OCCUPATIONAL and ENVIRONMENTAL HEALTH SCIENCES

Office: 628 Shapero Hall; 577-1551

Chairperson: David J.P. Bassett

Professors

David J.P. Bassett, Deepak K. Bhalla, Patricia A. Brogan, Andrew L. Reeves (Emeritus), Peter O. Warner

Associate Professor

Edward J. Kerfoot

Assistant Professor

Bonita G. Taffe

Adjunct Faculty

James E. Blessman, Richard D. Cummings, Raymond Y. Demers, Daniel P. Glazier, Michael J. Goldstein, Leonard L. Jensen, Bradley Joseph, Gene X. Kortsha, Sarunas S. Mingela, Robert J. Morris, Steve D. Paul, David Penney, Harold W. Rossmore, Gerald L. Sattelmeier, Howard J. Sawyer, Maryjean Schenk, Cathy L. Simpson, Jon R. Swanson, Mark J. Uptal, Roger L. Wabeke, William D. Watt

Cooperating Faculty

Merlin E. Ekstrom, Robert T. Louis-Ferdinand

Graduate Degree

MASTER OF SCIENCE with a major in Occupational and Environmental Health Sciences and specializations in industrial hygiene, industrial toxicology, and occupational medicine

Occupational and environmental health sciences is a discipline grounded in the basic sciences but with a distinctly practical purpose. Protection of the health of the working person and the assessment and abatement of hazards from air, water and solid waste pollution are interesting areas of scientific research and socially valuable forms of applied technology. As new industrial processes continue to be introduced at an ever-increasing pace and as the medical profession progresses by shifting its emphasis from cure to prevention, the specialist in occupational and environmental health sciences can look forward to a role of increasing importance in contemporary society. Applicants come from such diverse backgrounds as agriculture, biology, chemistry, engineering, clinical laboratory science, medicine, pharmacy, physics, pre-medicine and radiation therapy technology. Part-time evening study is offered in the occupational and environmental health sciences program.

Master of Science

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Applicants must have a bachelor's degree from an accredited college or university. Undergraduate course work must include the following prerequisites:

1. One term of mathematics at the level of pre-calculus (minimum) or calculus (preferred).
2. Two terms of physics or equivalent.
3. Two terms of biological science or equivalent.
4. Two terms of general chemistry.
5. One term of organic chemistry.

6. One term of quantitative analysis.

A minimum grade of 'C' is required in each of the prerequisite courses.

For applicants to the occupational medicine specialization, an M.D. degree will be acceptable in lieu of the prerequisites listed above.

An applicant lacking only one of the above prerequisites may be admitted as a pre-master's non-degree student (see page 16 for additional information). Upon satisfactory completion of the prerequisite, the student may request a 'Change of Status' from the College Graduate Officer, 121 Shapero Hall, seeking either regular or qualified admission to the program.

Any applicant lacking two or more of the above prerequisites is not eligible for admission. Prerequisites may be completed at other institutions, including community colleges, or at Wayne State as a Post-Bachelor student (see page 17 for additional information). Application for Post-Bachelor status is made at the Office of University Admissions, 3 West, Joy Student Services Building, Wayne State University, Detroit MI 48202-9960.

Regular admission requires a minimum upper division (junior and senior years) honor point average of 2.6. Qualified admission may be granted to those with an upper division honor point average between 2.25 and 2.6 if there is strong performance in the prerequisite courses.

The General portion of the Graduate Record Examination (GRE) is required of all applicants except in unusual cases where an applicant has substantial prior experience in medicine, occupational health, or industrial hygiene at a senior level of responsibility. Applicants will be expected to achieve a score of at least 1000 on the combined verbal and analytical sections of the general tests of the GRE.

Applicants whose native language is other than English must demonstrate proficiency in English prior to beginning the program (see page 18).

Admission is granted only for the fall semester. In order to assure a decision on admissibility, completed applications should be received no later than June 15.

Application materials may be obtained by contacting the Department of Occupational and Environmental Health Sciences, College of Pharmacy and Allied Health Professions, Wayne State University, Detroit, Michigan 48202.

DEGREE REQUIREMENTS: The program consists of a minimum of thirty-two credits for industrial hygiene or industrial toxicology, and thirty-six credits for occupational medicine, taken under one of the following plans:

Plan A requires a minimum of twenty-four credits in course work plus a thesis (eight credits) and is available to those specializing in either industrial hygiene or industrial toxicology.

Plan B requires twenty-eight to thirty credits in course work plus an essay (two to four credits) and is available to those specializing in either industrial hygiene or industrial toxicology.

Plan C requires a minimum of thirty-two credits in course work in industrial hygiene or thirty-six credits in occupational medicine. (Plan C is not available in industrial toxicology.)

Each candidate will complete the core curriculum listed below, as well as those courses required for the specialization and sufficient electives to total the required number of credits. Electives will vary with the student's previous preparation and interests. These will be determined mutually by the student and the adviser, with review and approval by the college graduate officer through endorsement of the *Plan of Work*. All course work must be completed in accordance with the academic procedures of the Graduate School governing graduate scholarship and degrees; see the section of this bulletin beginning on page 16.

Students may pursue a dual specialization in both industrial hygiene and toxicology. Dual specialization requires the completion of the core curriculum as well as the additional requirements for each specialization, and sufficient electives to satisfy the minimum requirement of thirty-two credits.

To qualify for the degree, all courses specified on the *Plan of Work* must be satisfactorily completed with a cumulative honor point average of at least 3.0. The thesis or essay and at least half of the remaining credits must be earned in the major subject. FINAL COMPREHENSIVE EXAMINATIONS, BOTH WRITTEN AND ORAL, ARE REQUIRED OF ALL CANDIDATES AND SHOULD BE TAKEN ONLY AFTER SUCCESSFUL COMPLETION OF ALL CORE COURSES. If Plan A or Plan B is followed, the final oral examination includes a defense of the thesis or essay.

For Plan A candidates, after successful completion of the oral examination, an original and two unbound copies of the approved thesis must be delivered to the Graduate School Office (4300 Faculty/Administration Building) for binding. A copy of the binding receipt must be provided to the college graduate officer before the degree can be certified.

For Plan B candidates, after successful completion of the oral examination, three copies of the essay must be provided by the candidate, one to the adviser and two to the College Graduate Officer, prior to certification of the degree.

Core Curriculum

OEH 7010 Principles of Industrial Hygiene and Toxicology
 OEH 7090 Seminar—Frontiers in Industrial Hygiene
 OEH 7300 Industrial Toxicology

Additional Requirements for Industrial Hygiene

OEH 7120 Principles of Industrial Noise Control
 OEH 7510 Air Sampling and Analysis
 OEH 7600 Principles of Industrial Ventilation
 OEH 7610 Statistics and Risk Management in OEHS
 OEH 7720 Industrial Hygiene Control Methods
 OEH 7999 (for Plan B) Master's Essay

Additional Requirements for Industrial Toxicology

OEH 7310 Toxicology of Inorganic Compounds
 OEH 7330 Toxicology of Organic Compounds
 OEH 7420 Environmental Pollution
 OEH 7510 Air Sampling and Analysis
 OEH 7610 Statistics and Risk Management in OEHS
 OEH 7870 Periodical Literature in Occupational and Environmental Health
 OEH 7999 or OEH 8999
 — Master's Essay
 — Master's Thesis Research and Direction

Additional Requirements for Occupational Medicine

C M 6010 Biostatistics I
 C M 7100 Intro. to Organization & Administration of Community Health Services I
 C M 7240 Epidemiology
 C M 7320 The Social Basis of Health Care
 OEH 7720 Industrial Hygiene Control Methods
 OEH 7860 Occupational Medicine

Recommended Electives

for Industrial Hygiene and/or Industrial Toxicology

(Required courses from the other specialty or other graduate level electives may be selected with the approval of the adviser and the college graduate officer.)

OEH 7080 Industrial Hygiene Practice
 OEH 7110 Occupational Ergonomics
 OEH 7270 Radiation Safety: Principles and Practice
 OEH 7520 Optical Microscopy for Industrial Hygienists
 OEH 7650 Chemistry of Industrial Processes
 OEH 7820 Regulatory Affairs in Occupational and Environmental Health
 OEH 7840 Occupational Health Management
 OEH 7990 Directed Study

Recommended Electives for Occupational Medicine

(Other graduate-level electives may be selected with the approval of the adviser and college graduate officer. Note that at least one-half of the total credits on the *Plan of Work* must be in the OEH major.)

OEH 7110 Occupational Ergonomics
 CEH 7270 Radiation Safety: Principles and Practice
 AUD 7420 Industrial and Community Problems in Audiology

Advisers: The chairperson of the admission committee will serve as temporary adviser to the applicant during the first semester. During this semester, the applicant is encouraged to meet with all graduate faculty in the area and choose an adviser. If the applicant desires to follow Plan A or Plan B, the adviser will direct the student's research for the thesis or essay. The adviser will also sign the student's *Plan of Work* and any other necessary forms.

Candidacy: Applicants apply to the College graduate officer (121 Shapero Hall) to become degree candidates by filing a *Plan of Work*, approved by their adviser, prior to the completion of twelve graduate credits in the program. To qualify, applicants must exhibit satisfactory scholarship (graduate honor point average of 3.0 or above), have completed any prerequisite and/or corequisite courses specified at the time of admission, and have regular admission status. Applicants who have not been advanced to candidacy by the time twelve graduate credits have been completed may be denied further registration in the program.

Academic Progress: Continuance in the master's program depends upon satisfactory progress as determined by the adviser, the department chairperson and the college graduate officer. Students who have not registered for two or more consecutive semesters will be placed on inactive status and must obtain the permission of the adviser, the department chairperson and the college graduate officer before registering again.

Student Manual

The student manual, provided by this department, also contains policy statements that may pertain to admission, candidacy, and degree requirements. Students should be sure to consult this manual for the current statements on these policies.

Financial Aid

Sources of financial aid for graduate students are enumerated in the section on Graduate Financial Aid beginning on page 30 of this bulletin. In addition, there are a limited number of teaching assistantships available to qualified students. Inquiries should be directed to the Department Chairperson. The following is also available:

Occupational and Environmental Health Scholarship: An award of variable amount open to minority students in the occupational and environmental health program. Applications are accepted throughout the year. Contact the Department for details.

GRADUATE COURSES (OEH)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

6290 Introduction to Occupational and Environmental Diseases. Cr. 2

Prereq: BIO 1510 and 1520 or equivs. Open only to seniors and graduate students. Introduction to the epidemiology of industrial and occupational diseases. Normal cell tissue physiology in the context of pathophysiological changes associated with common occupational/environmental exposures. (S)

7010 Principles of Industrial Hygiene and Toxicology. Cr. 3

Fundamentals of industrial hygiene, recognition of toxic agents, evaluation procedures and engineering control methods. Material fee as indicated in the Schedule of Classes. (F)

7060 Occupational and Environmental Health Sciences. Cr. 4

Occupational and environmental exposures and their recognition, evaluation procedures and engineering controls. Topics include air and water pollution, solid waste treatment, disease vectors and indoor air pollution. Material fee as indicated in the Schedule of Classes. (F)

7080 Industrial Hygiene Practice. Cr. 2

Prereq: OEH 7010. Four two-hour field visits per term, guided by an industrial hygienist, to observe monitoring and control practices in the field. Students prepare written reports. (S)

7090 Seminar - Frontiers in Industrial Hygiene. Cr. 1

Informative presentations by leaders in the field of industrial hygiene, toxicology, occupational medicine, pollution control and general environmental health. (W)

7110 Occupational Ergonomics. Cr. 2

Ergonomic perspective of skeletal and muscular biofunctions as they are related to industrial, office or general employment situations. (Y)

7120 Principles of Industrial Noise Control. Cr. 3

Prereq: OEH 7010. Fundamentals of sound propagation and measurement; use of sound level meters, frequency analyzers, and audiometric devices; methods of abating sound levels. Material fee as indicated in the Schedule of Classes. (W)

7270 Radiation Safety: Principles and Practice. Cr. 3

Basic principles and practices of radioactivity; interactions of radiation with matter. Dosimetry, instrumentation, internal and external radiation protection. Principles and practice of radiation safety in the work environment. Material fee as indicated in the Schedule of Classes. (S)

7280 Occupational Safety. Cr. 2

Prereq: admission to the Graduate School. Basic job safety analysis skills: machine guarding, fire protection, material handling, ergonomics. (B)

7300 Industrial Toxicology. Cr. 3

Prereq: OEH 7010. Adverse effects of hazardous wastes on living tissue. Occupational and environmental poisonings to various organ systems; mutagenesis and carcinogenesis. Laboratory studies of modes of exposure of experimental animals to toxic agents and measurements of their effects. (Y)

7310 Toxicology of Inorganic Compounds. Cr. 2

Prereq: OEH 7300. Survey of metals and their compounds, industrial gases, and mineral dusts from the viewpoint of their toxicity. (B)

7330 Toxicology of Organic Compounds. Cr. 2

Prereq: OEH 7300. Survey of organic chemicals by chemical class from the viewpoint of their toxicity. Aliphatic and aromatic hydrocarbons, compounds with oxygen, sulfur, nitrogen, phosphorus, and with halogens. (B)

7350 Toxicology for Hazardous Waste Management. Cr. 3

Prereq: MAT 1800, BIO 1510, CHM 1080; or equiv. Information for specialists in hazardous waste management regarding toxicology of materials encountered in the field. (Y)

7420 Environmental Pollution. (CHE 5550) (HWM 7420) Cr. 3

Prereq: OEH 7010. Effects of atmospheric pollution on health, property, vegetation; a detailed consideration of the contaminants respon-

sible for these effects; chemical and physical methods for measuring air pollution; elements of community sampling and stack sampling; methods of abating air pollution at the source. (B)

7510 Air Sampling and Analysis. (CHE 5520) (HWM 5520) Cr. 3

Prereq: OEH 7010. Classical methods of obtaining samples of the air; recent developments in portable direct reading devices; theory underlying the use of impingers, impactors, electrostatic and thermal precipitators, filtration media, and other sampling devices. Material fee as indicated in the Schedule of Classes. (F)

7520 Optical Microscopy for Industrial Hygienists. Cr. 2

Expanded study of use of microscope for dust counting and sizing and for identification of industrial hygiene hazards; use of petrographic, stereo, and phase-contrast microscope. Material fee as indicated in the Schedule of Classes. (W)

7600 Principles of Industrial Ventilation. Cr. 3

Prereq: OEH 7010. Principles of air movement; their application to design of industrial ventilation systems; air measuring devices, duct and hood design, dust collector performance, fan selection; typical industrial problems, including foundry operations, paint spraying. Material fee as indicated in the Schedule of Classes. (F)

7610 Statistics and Risk Management in Occupational and Environmental Health Sciences. Cr. 3

Prereq: OEH 7010. Application of statistical methods to industrial hygiene and toxicological data. Data summaries applied to exercises in problem solving using risk assessment/management techniques. (F)

7650 Chemistry of Industrial Processes. (CHE 5320) (HWM 5320) Cr. 3

Prereq: OEH 6010. Basic industrial chemistry needed to evaluate the human health-related impact of industrial processes. Types of fuels, expected by-products, and chemical hazards as a basis for industrial environment research. (W)

7720 Industrial Hygiene Control Methods. Cr. 2

Prereq: OEH 7010. Control of the industrial environment to prevent occupational illness; use of respiratory protection, substitution procedures, protective clothing, shielding and isolation to control factors in the environment; laboratory and field visits. Material fee as indicated in the Schedule of Classes. (W)

7820 Regulatory Affairs in Occupational and Environmental Health. Cr. 2

History, scope, and application of federal and state laws and regulations concerning occupational safety and health, toxic substances in the environment, and related areas. Methods of compliance, penalties for non-compliance, and agencies of enforcement. (Y)

7840 Occupational Health Management. Cr. 2

Management aspects of occupational health: design, planning, and execution of an occupational health program, utilizing technical knowledge acquired from program courses. Preparation of a written program in area of industrial hygiene, toxicology, or general occupational health is required. (W)

7860 (C M 7860) Occupational Medicine. Cr. 4

Prereq: admission to the Graduate School. Clinical knowledge about prevention, recognition, diagnosis and treatment of occupational and environmental disorders. Etiology, pathophysiology, natural history and health outcomes of important categories of occupational/environmental diseases. Worker/work environment interrelationships. (B)

7870 Periodical Literature in Occupational and Environmental Health. Cr. 1

Journals, annals, and other data bases available to the specialist to follow progress of the field. Students receive assignments and present reports. (S)

**7880 (C M 7880) Business, Labor, Regulation and Medicine.)
Cr. 3**

Prereq: admission to the Graduate School. Topics related to business, labor, occupational safety and health regulations, and the legal milieu in which modern occupational medicine operates. (B)

7990 Directed Study. Cr. 1-4

Prereq: consent of instructor and graduate officer prior to registration. Directed projects for students whose interests and needs are not adequately met in other scheduled classes. (T)

7999 Master's Essay. Cr. 1-4

Prereq: consent of adviser. (I)

**8999 Master's Thesis Research and Direction.
Cr. 1-8 (Max. 8)**

Prereq: consent of adviser. (I)



OCCUPATIONAL THERAPY

Office: 311 Shapero Hall; 577-1435

Chairperson: Susan Esdaile

Graduate Program Coordinator: Nancy J. Powell

Director of Research: Mark Laborsky

Professors

Susan Esdaile, Martha E. Schnebly (Emerita)

Associate Professors

Mark Laborsky, Suesetta McCree (Emerita), Nancy Powell

Assistant Professors

Karmen Brown, Miriam Freeling (Emerita), Cathy Lysack

Lecturer

Doreen Head

Adjunct Professor

Elizabeth Yerxa

Adjunct Assistant Professor

Janet P. Andrews

Part-Time Instructors

Donna Case, Bernadette Jeroslawski, Regina Parnell, Susan Sipovan

Graduate Degree

MASTER OF SCIENCE in Occupational Therapy

The Master of Science degree program in this Department is a post-professional program for certified occupational therapists. The program offers advanced education related to two major elements of occupational therapy. The first is current frames of reference that guide occupational therapy — for example, behavioral, biomechanical, cognitive, developmental, the model of human occupation, neurodevelopment, psychoanalytical and rehabilitative. Other frames of reference may be added as professionally relevant. The second element is related to the roles of occupational therapists in practice. Academic and field work experiences are available related to these roles — for example, administrator, advocate, consultant, educator, evaluator, leader, manager, service provider, and researcher.

The program emphasizes an individualized approach to students' progression through the curriculum. This approach allows students to choose from a variety of graduate course offerings as electives to focus on an area of study. The Institutes of Gerontology and Developmental Disabilities offer graduate certificate programs which can be taken concurrently with the master of science degree program.

Master of Science in Occupational Therapy

Students are expected to complete the program in one-and-one-half to two years full-time, or in three to four years part-time. Part-time study is an option for the working practitioner and is facilitated by the availability of all occupational therapy graduate courses (and many of the courses in other departments) in the late afternoon or evening; some classes are offered on weekends. However, during the semester in which the student elects the Professional Field Experience, full-time study may be required.

Admission: For admission to this program applicants must satisfy the following criteria:

1. Fulfill requirements for regular admission to the Graduate School; see page 16 (qualified admissions are only considered in exceptional cases and require a full faculty review).

2. Be certified by the National Board of Certification in Occupational Therapy (NBCOT). (An international applicant must be duly qualified as an occupational therapist in the country where educated.)
3. Participate in a personal interview, if requested by an adviser in the Department.
4. Complete a Departmental application for graduate admission.
5. Submit three letters of reference.
6. Have professional experience in the field of occupational therapy prior to entering the graduate program.

Applicants whose native language is other than English must demonstrate proficiency in English prior to beginning the program (see page 18).

Application: In addition to the regular university application forms, a completed departmental application is required, as well as three names for references. Application materials may be obtained by contacting the Department of Occupational Therapy, College of Pharmacy and Allied Health Professions, Wayne State University, Detroit, Michigan 48202. Applications are accepted at any time and students may begin the program during any semester.

DEGREE REQUIREMENTS: The program consists of a minimum of thirty-two credits, taken under one of the following plans:

Plan A requires a minimum of twenty-four credits in course work plus a thesis (eight credits).

Plan B requires a minimum of thirty credits in course work plus an essay (two credits).

Plan C requires a minimum of twenty-seven credits in course work plus a project (five credits).

To qualify for the degree, all courses specified on the *Plan of Work* (see below, under Candidacy) must be satisfactorily completed with a cumulative honor point average of at least 3.0. The thesis, essay or project and at least half of the remaining required credits must be earned in the major subject. At least eight credits in the major, in addition to the thesis, essay or project, must be in courses numbered 7000 and above. A final oral examination covering course work and the thesis is required of those candidates pursuing Plan A. After successful completion of the oral examination, an original and two unbound copies of the approved thesis must be delivered to the Office of the Graduate School, 4300 Faculty/Administration Building, for binding. A copy of the binding receipt must be presented to the College Graduate Officer before the degree can be certified.

A grade of 'C' in any graduate course is unacceptable. To remain in the program, a student must repeat the course in which the 'C' was earned and raise the grade to a 'B' or above. This process is permitted only once during a student's tenure in the occupational therapy graduate program.

All course work must be completed in accordance with the regulations of the Graduate School governing graduate scholarship and degrees; for requirements, see the section of this bulletin beginning on page 16.

Each candidate must complete the core curriculum listed below and sufficient professional and general electives to total thirty-two credits. Electives will vary with the student's area of specialization. These will be determined mutually by the student and the adviser, with review and approval by the college graduate officer's endorsement of the student's *Plan of Work*.

Core Curriculum

1EER 7630	Fundamentals of Statistics
1EER 7640	Fundamentals of Qualitative Research
OT 7300	Professional Literature
OT 7700	Terminal Seminar in Occupational Therapy
OT 7750	Professional Field Experience
OT 7991	Special Study

1. Or equivalent alternatives approved by the major adviser in the Department of Occupational Therapy.

One of the following

OT 7999	Master's Essay Direction
OT 8990	Master's Project Direction
OT 8999	Master's Thesis Research and Direction

Professional Electives:

OT 6620	Enabling Technology
OT 6800	Culture and Disability
OT 7400	Seminar in Current Problems and Trends in Occupational Therapy
OT 7500	Specialist Roles in Occupational Therapy
OT 7990	Directed Study

(Other graduate level general electives in other departments are selected with the approval of the adviser and the College graduate officer.)

Graduate Program Direction: Each applicant will be admitted by the Graduate Admission Committee. The matriculated student will be immediately assigned to an adviser. The adviser, together with the student, will form an Advisory Committee to meet with the student periodically to assist the student in planning a course of study. The adviser will sign the student's *Plan of Work* and may serve as major adviser on the student's thesis, project, or essay

Candidacy: Applicants apply to the College Graduate Officer (121 Shapero Hall) to become degree candidates by filing a *Plan of Work*, approved by the adviser, prior to the completion of twelve graduate credits in the program. To qualify, applicants must exhibit satisfactory scholarship (graduate honor point average of 3.0 or above), have completed any prerequisite and/or corequisite courses specified at the time of admission, and have regular admission status. Applicants who have not been advanced to candidacy by the time twelve graduate credits have been completed may be denied further registration in the program.

Academic Progress: The student is expected to progress in the program with no breaks except during spring/summer terms when there may be no appropriate courses offered. If a student finds it necessary to take a fall or winter term off, permission must be obtained from the Adviser and Advisory Committee. Continuance in the Master's Program depends upon satisfactory progress as determined by the adviser, the Advisory Committee, the Department Graduate Coordinator, and the College Graduate Officer.

Students who have taken authorized leave for two consecutive terms will be placed on inactive status. To be reactivated, students must petition in writing the adviser, the Advisory Committee, the Department Graduate Program Coordinator, and the College Graduate Officer. Students who have taken unauthorized leave for two terms will be dropped from the program.

Certificates: Candidates may concurrently earn Graduate Certificates from the Institute of Gerontology (see page 38) or the Developmental Disabilities Institute (see page 37).

Student Manual

The student manual, provided by this department, also contains policy statements that may pertain to admission, candidacy, and degree requirements. Students should be sure to consult this manual for the current statements on these policies.

Financial Aid

Sources of financial aid for graduate students are enumerated in the section on Graduate Financial Aid beginning on page 30 of this bulletin. In addition, a teaching assistantship may be available to a qualified student. Inquiries should be directed to the department chairperson.

GRADUATE COURSES (O T)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-

digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

6620 (ECE 6100) Enabling Technology. Cr. 4

Prereq: consent of instructor. Principles of application of enabling technology: across life stages, for differing ethnic and cultural backgrounds, for individuals with varying functional abilities. (Y)

6800 Culture and Disability. Cr. 2-3

Prereq: senior level graduate admission status. How cultural context affects interpretation of disability; ways of measuring disability. (Y)

7300 Professional Literature. (CLS 7300) Cr. 3

Prereq: consent of adviser. Analysis and appraisal of current occupational therapy and related professional literature. Overall approach to research reporting. (F)

7400 Seminar in Current Problems and Trends in Occupational Therapy. Cr. 2-3 (Max. 9)

Prereq: consent of adviser. Concepts and theories in specific areas of occupational therapy. Current developments, problems and research. Topics to be announced in Schedule of Classes. (I)

7500 Specialist Roles in Occupational Therapy. Cr. 2-3 (Max. 9)

Prereq: consent of adviser. Philosophy, procedures and skills of the occupational therapy specialist. (I)

7510 (CLS 7090) Instruction in Teaching Techniques. Cr. 2

Discussion and planning exercises in allied health education. Topics include: preparing objectives, educational strategies, evaluation and curricula in allied health programs. (F)

7700 Terminal Seminar in Occupational Therapy. Cr. 1

Prereq: O T 7300, EER 7630, EER 7640 or equiv. Refinement of research techniques in relation to effective development of study for master's thesis, essay or project. (W)

7750 Professional Field Experience. Cr. 1-4

Prereq: consent of adviser; prereq. or coreq: O T 7700. Offered for S and U grades only. Supervised placement in area of specialization. (T)

7990 Directed Study. Cr. 1-3 (Max. 5)

Prereq: consent of occupational therapy adviser. Opportunities for study and experience in areas of special interest in occupational therapy. Written report and oral presentation required. (T)

7991 Special Study. Cr. 1

Coreq: O T 7999, 8990 or 8999. (Y)

7999 Master's Essay Direction. Cr. 1-2 (2 req.)

Prereq: O T 7700 and consent of adviser. (T)

8990 Master's Project Direction. Cr. 1-5 (5 req.)

Prereq: O T 7700 and consent of adviser. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: O T 7700 and consent of adviser. (T)

PHYSICAL THERAPY

Office: 439 Shapero Hall; 577-1432

Chairperson: Louis R. Amundsen

Professor

Louis R. Amundsen

Associate Professors

Thomas J. Birk, Steven F. Siconolfi

Assistant Professors

Christine Carlson, Jacquelyn Drouin, Kim Dunleavy, Nancy McNevin, Ann Reeder, Susan Talley

Adjunct Assistant Professor

Mable Sharp

Graduate Degree

MASTER IN PHYSICAL THERAPY

Physical therapy is a health care profession whose primary purpose is the promotion of optimal human health and function through the application of scientific principles to prevent, identify, assess, correct, or alleviate acute or prolonged movement dysfunction. This discipline focuses primarily on those individuals whose potential or actual impairment is related to neuro-musculoskeletal, pulmonary, and cardiovascular symptoms.

Physical therapists engage in a broad spectrum of activities including direct patient care, consultation, administration, supervision, teaching, and community service. They practice in a variety of settings such as general and specialty hospitals, private offices, schools, agencies for the handicapped, rehabilitation centers, sports clinics, and home care agencies.

Master in Physical Therapy

Admission to this program is contingent upon completion of the Bachelor of Science in Allied Health Sciences with a concentration in physical therapy, or completion of the professional course component thereof, at Wayne State University, and admission to the Graduate School (for requirements, see page 16). Persons interested in the program should obtain information on admission to this Bachelor of Science program from the Department of Physical Therapy, College of Pharmacy and Allied Health Professions, Wayne State University, Detroit, MI 48202.

Required prerequisite professional courses for admission to the Master in Physical Therapy program are:

ANA 3030	.....	Anatomy
ANA 3040	.....	Human Neuroanatomy and Neurophysiology
IHS 3100	.....	Basic Mechanisms of Human Disease I
IHS 3200	.....	Basic Mechanisms of Human Disease II
IHS 3300	.....	Pharmacology for Allied Health Professions
PT 4020	.....	Introduction to Physical Therapy
PT 4120	.....	Human Growth and Development
PT 4220	.....	Basic Therapeutic Procedures
PT 4320	.....	Basic Evaluation Procedures
PT 4400	.....	Clinical Medicine I
PT 4430	.....	Clinical Medicine II
PT 4500	.....	Kinesiology I
PT 4650	.....	Kinesiology II
PT 5100	.....	Therapeutic Exercise
PT 5460	.....	Integrated Physiology
PT 5800	.....	Clinical Education I

Further information on the Bachelor of Science in Allied Health Sciences degree may be found in the Undergraduate Bulletin and is also available from the Department of Physical Therapy.

DEGREE REQUIREMENTS: The Master in Physical Therapy degree is offered as a Plan C option, requiring a minimum of fifty-four credits including all courses in the core curriculum listed below and at least two credits in electives selected in consultation with an adviser.

All course work must be completed in accordance with the academic procedures of the Graduate School governing graduate scholarship and degrees; see pages 16-17 of this bulletin beginning on page 16. In addition, the criteria for academic performance given in the *Physical Therapy Student Handbook* will be followed.

All core curriculum courses must be satisfactorily completed with a cumulative honor point average of at least 3.0. A grade of 'C' in any graduate course is unacceptable. To remain in the program, a student receiving a grade of 'C' in a course should repeat that course and successfully complete it with the grade of 'B' or above. A maximum of one 'C' grade will be allowed.

Core Curriculum

PT 7000	.....	Electrotherapy
PT 7100	.....	Management of Patients with Orthopedic Conditions I
PT 7120	.....	Management of Patients with Orthopedic Conditions II
PT 7130	.....	Special Topics in Orthopedic Physical Therapy
PT 7200	.....	Management of Neurological Disorders I
PT 7220	.....	Management of Neurological Disorders II
PT 7230	.....	Special Topics in Pediatric Physical Therapy
PT 7300	.....	Rehabilitation Procedures I
PT 7320	.....	Rehabilitation Procedures II
PT 7400	.....	Cardiopulmonary Rehabilitation
PT 7500	.....	Clinical Decision Making in Physical Therapy I
PT 7700	.....	Research in Physical Therapy I
PT 7720	.....	Research in Physical Therapy II
PT 7800	.....	Advanced Clinical Education I
PT 8000	.....	Lifestyle Perspectives
PT 8100	.....	Psycho-Social Aspects of Physical Therapy
PT 8200	.....	Management of Physical Therapy Practice
PT 8500	.....	Clinical Decision Making in Physical Therapy II
PT 8600	.....	Health Promotion and Problem Prevention
PT 8700	.....	Seminar in Physical Therapy
PT 8800	Advanced Clinical Education II

Elective

PT 7990	Directed Study
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Student Manual

The student manual, provided by this department, also contains policy statements that may pertain to admission, candidacy, and degree requirements. Students should be sure to consult this manual for the current statements on these policies.

GRADUATE COURSES (P T)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be

taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

5100 Therapeutic Exercise. Cr. 2

Prereq: P T 4430, 4650; coreq: 5460. Fundamental principles and techniques of therapeutic exercise; development of treatment protocols for specific patient problems including evaluation and progression treatment plans based on patient response. Material fee as indicated in the Schedule of Classes. (Y)

5460 Integrated Physiology. Cr. 2

Prereq: IHS 3200, ANA 3040, P T 4650, consent of instructor. Processes of selected physical functions that have special relevance to selected aspects of physical therapy; theoretical and practical aspects. Material fee as indicated in the Schedule of Classes. (S)

5800 Clinical Education I. Cr. 2

Prereq: consent of instructor; coreq: P T 4220, 5460, 5100. Offered for S and U grades only. Orientation to clinical education and practice, observational skills; correlation of basic principles and skills of patient care and treatment. Part-time, supervised experience in clinical environment. Activity reports required. (S)

7000 Electrotherapy and Physical Agents. Cr. 4

Prereq: P T 4220, 5460, ANA 3040, P T 5100, or consent of instructor. Theory and application of heat, cold, infrared and ultraviolet radiation, hydrotherapy, shortwave and microwave diathermy, ultrasound, electrical current, nerve conduction velocity, and electromyograph. (F)

7100 Management of Patients with Orthopedic Conditions I. Cr. 3

Prereq: P T 4220, 4320, 4500, 5100, IHS 3300, or consent of instructor. Theoretical aspects, principles and techniques of the management of patients with orthopedic problems and their application to the practice of physical therapy. Special exercise regimes, musculoskeletal evaluation techniques, orthopedic evaluation and treatment. Material fee as indicated in the Schedule of Classes. (F)

7120 Management of Patients with Orthopedic Conditions II. Cr. 2

Prereq: P T 7100 or consent of instructor. Theoretical aspects, principles and techniques for management of patients with orthopedic problems related to the spine; their applications to practice of physical therapy. Evaluation and treatment of the spine. Material fee as indicated in the Schedule of Classes. (W)

7130 Special Topics in Orthopedic Physical Therapy. Cr. 2-4

Prereq: P T 7120 or consent of instructor. Theoretical aspects, principles and techniques for special topics in orthopedic physical therapy. (Y)

7200 Management of Patients with Neurological Disorders I. Cr. 2

Prereq: P T 4220, ANA 3040, IHS 3300, P T 5100, or consent of instructor. Basic principles and techniques of assessing problems associated with neurological disorders including postural tone, sensation, superficial and developmental reflexes, quality of movement, perceptual-motor skills and functional mobility. Material fee as indicated in the Schedule of Classes. (Y)

7220 Management of Patients with Neurological Disorders II. Cr. 3

Prereq: P T 7200 or consent of instructor. Theory, principles and application of the neurophysiological approach to evaluation and treatment. Proprioceptive neuromuscular facilitation, neuro development treatment, sensory integration, and sensory-motor approaches. Material fee as indicated in the Schedule of Classes. (W)

7230 Special Topics in Pediatric Physical Therapy. Cr. 3

Prereq: P T 4120, 7200, 7220; coreq: 8000 or consent of instructor. Theoretical aspects, principles and techniques for special topics in pediatric physical therapy. Elective. (F)

7300 Rehabilitation Procedures I. Cr. 3

Prereq: P T 5100 or consent of instructor. Principles and techniques of prosthetic and orthotic function, component selection and application, use and training. Upper and lower extremity devices, and spinal devices, wheelchairs, ambulatory aids, assistive devices and environmental control systems. Material fee as indicated in the Schedule of Classes. (F)

7320 Rehabilitation Procedures II. Cr. 3

Prereq: P T 7000, 7100, 7200, 7300, IHS 3300, or consent of instructor. Continuation of P T 7300. Theoretical issues and treatment of patients with spinal cord injury, stroke, traumatic brain injury and chronic neuromuscular conditions, program planning and progression in multidisciplinary team setting. Material fee as indicated in the Schedule of Classes. (W)

7400 Cardiopulmonary Rehabilitation. Cr. 2

Prereq: IHS 3300, P T 5100, P T 5460. Review of physiology, and pathophysiology of disorders of the cardiac and pulmonary systems. Evaluation and treatment of cardiopulmonary disorders. Material fee as indicated in the Schedule of Classes. (W)

7500 Clinical Decision Making in Physical Therapy I. Cr. 1

Prereq: P T 7000; coreq: 7120, 7220, 7320, 7400. Integration of didactic and clinical skills in physical therapy. Focus on development of individualized student competencies in differential diagnosis and referral utilizing a problem-solving approach. (W)

7700 Research in Physical Therapy I. Cr. 2

Prereq: P T 5100, consent of instructor. Introduction to basic principles of research theory, design, and methodology for physical therapy. Biostatistics and analysis of scientific literature relevant to physical therapy. (F)

7720 Research in Physical Therapy II. Cr. 3

Prereq: P T 7700 or consent of instructor. Basic principles of research design as it relates to the theory and practice of physical therapy. Students will analyze relevant scientific literature, design, develop and implement a research project, and learn basic computer skills in utilizing a statistical analysis program. (W)

7800 Advanced Clinical Education I. Cr. 4

Prereq: P T 5800, consent of instructor. Offered for S and U grades only. Supervised experience in clinical environments. Case study and activity reports required. (S)

7990 Directed Study. Cr. 1-4

Prereq: P T 5100 or consent of instructor. Independent study: critical analysis or review of new or unique topics in health care; or physical therapy role, approach, methodology, techniques or scientific rationale for professional practice. Oral and written presentation required. Elective. (Y)

8000 Life Span Perspectives. Cr. 2

Prereq: P T 4120. Continuation of P T 4120 with further study in the therapeutic implications for intervention with specific pediatric and aging populations. Emphasis on problem-oriented approach to pathophysiological aspects of life span development. (F)

8100 Psycho-Social Aspects of Physical Therapy. Cr. 2

Prereq: P T 4020 and 5800. Physical therapist as a helping professional. Psychological, emotional, social and ethical implications; coping mechanisms and support systems of individuals experiencing stress, illness, disability or death. Self-analysis of personal attitudes and orientations. (F)

8200 Management of Physical Therapy Practice. Cr. 2

Prereq: P T 7500, consent of instructor. Overview of health care systems; financing and administration of physical therapy services within various health care systems. (F)

8500 Clinical Decision Making in Physical Therapy II. Cr. 2

Prereq: P T 7500. Integration of didactic and clinical knowledge in development of diagnostic prognostic skills in physical therapy; focus on refining competencies in peer referral across health care disciplines; development of strategies for clinical decision making. (Y)

8600 Health Promotion and Problem Prevention. Cr. 2

Prereq: P T 7400 and 7500. Methods of evaluation for determining safety and effectiveness of therapeutic interventions for high risk patients. Strategies for identifying populations needing health promotion programs, the application of these evaluations and programs. (Y)

8700 Seminar in Physical Therapy. Cr. 2

Prereq: P T 7720 and 7800, or consent of instructor; coreq: 8500. Exploration of contemporary and controversial topics in physical therapy and health care. Student presentations, discussions, and written assignments. (Y)

8800 Advanced Clinical Education II. Cr. 8

Prereq: satisfactory completion of all professional didactic and clinical courses; consent of instructor. Offered for S and U grades only. Continuation of P T 6800. Full-time supervised experiences in clinical environments. Activity reports required. (Y)



PHYSICIAN ASSISTANT STUDIES

Credits

Office: 428 Shapero Hall; 577-1368
 Chairperson: Henry C. Wormser
 Associate Chairperson: Howard J. Normile
 Admissions Coordinator: Carol Meier

Professor

Henry C. Wormser

Associate Professor

Howard J. Normile

Assistant Professor

Mohamed Siddique

Instructors

James Frick, Stephanie J. Gilkey, Jeb Sheidler

Part-Time Faculty

Deborah Adamchek, Rita Granda, John McGinnity

Adjunct Faculty

Susan Baker, Bernard Dash, David Dereczyk, Robert Louis-Ferdinand, Frank Ferres, Tracy Fish, Kathleen Flannigan, Susan Friedman, David Glines, Linda Greenwood, Howard Hollinger, Satish Khanzode, Willane Krell, Keith Larsen, Gail Mancini, Tim McElmurry, Marianne Naftzger-Langlois, Dale Sillix, Liborio Tranchida, Gerard Valdez, Jose Valdez

Graduate Degree

MASTER OF SCIENCE in Physician Assistant Studies

The physician assistant is academically and clinically prepared to provide health care services with the direction and responsible supervision of a doctor of medicine or osteopathy. Within the physician/physician assistant relationship, physician assistants make clinical decisions and provide a broad range of diagnostic, therapeutic, preventive and health maintenance services. The clinical role of physician assistants includes primary and specialty care in medical and surgical practice settings. Physician assistant practice is centered on patient care and may include educational, research and administrative activities.

Master of Science in Physician Assistant Studies

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Applicants must have a bachelor's degree from an accredited college or university. In addition, students must: (1) have a minimum cumulative undergraduate honor point average of 3.0; (2) complete the general test of the Graduate Record Examination; (3) submit two letters of recommendation, one from a work supervisor and preferably one from a physician assistant; (4) submit a 750-word narrative stating his/her personal and professional goals; and (5) have a minimum of 500 hours of contact in a health-service environment. (In addition, students whose native language is not English must have a minimum TOEFL score of 600.)

Prerequisite Study: In addition, the following prerequisites must have been successfully completed. Those marked with an asterisk must be completed within the six years prior to the date of application to this degree program:

Anatomy*	4
Advanced physiology* (300 level or above)	6
Microbiology* (with laboratory)	4
Nutrition	2
Chemistry* (course must be organic or biochemistry)	6
Developmental psychology	3
Basic statistics	3
Two English composition courses	6

Preliminary Interview: Admission to this program is competitive, and applicants satisfying the above minimum requirements may be required to appear for an interview.

Program Deadlines: All prerequisite requirements, excluding the personal interview, must be completed by the end of the fall semester prior to admission in the spring/summer semester. Applicants must submit two separate applications: (1) one to the Graduate School, and (2) one to the Department of Physician Assistant Studies. Applications for the Department will be available each May. *Application deadline for the Department is October 1.* Interested students may submit a written request for an application to: Department of Physician Assistant Studies, College of Pharmacy and Allied Health Professions, 428 Shapero Hall, Wayne State University, Detroit, Michigan 48202; or they may attend a General Information Session held at the College of Pharmacy and Allied Health Professions. Contact the department for dates and times of the General Information Sessions.

DEGREE REQUIREMENTS: The Master of Science in Physician Assistant Studies is offered under a Plan C option, requiring successful completion of forty-eight credits in course work over two years or six semesters. All course work must be completed in accordance with the academic procedures of the Graduate School governing graduate scholarship and degrees (see the section of this bulletin beginning on page 16), and in accordance with the Department of Physician Assistant Studies Student Policy and Information Manual. A grade of 'C' in any graduate course is unacceptable.

Spring/Summer Term — Year I:

PAS 7000	Anatomy for Physician Assistants
PAS 7010	Clinical Medicine I
PAS 7040	Patient Evaluation I
PAS 7070	Health Care Issues I

Fall Term — Year I:

PAS 6500	Pathophysiology
PAS 7020	Clinical Medicine II
PAS 7050	Patient Evaluation II
PAS 7080	Health Care Issues II
PAS 7100	Pharmacology I

Winter Term — Year I:

PAS 7030	Clinical Medicine III
PAS 7060	Patient Evaluation III
PAS 7090	Pharmacology II
PAS 7110	Pharmacology II

Spring/Summer Term — Year II:¹

PAS 8000	Internal Medicine Rotation (Practicum)
PAS 8010	Obstetrics and Gynecology Rotation (Practicum)
PAS 8020	Emergency Medicine Rotation (Practicum)

Fall Term — Year II:¹

PAS 8030	Pediatrics Rotation (Practicum)
PAS 8040	Psychiatry Rotation (Practicum)
PAS 8050	Surgery Rotation (Practicum)

Winter Term — Year II:¹

PAS 8060	Family Medicine Rotation (Practicum)
PAS 8070	Elective Rotation (Practicum)

1. Year II rotation sequence will vary for each student.

Student Manual

The student manual, provided by this department, also contains policy statements that may pertain to admission, candidacy, and degree requirements. Students should be sure to consult this manual for the current statements on these policies.

Financial Aid

Sources of financial aid for graduate students are enumerated in the section on Graduate Financial Aid beginning on page 30 of this bulletin. In addition, the Department suggests that students consult external sources such as the *National Health Service Corps Scholarship and Loan Repayment Programs*.

GRADUATE COURSES (PAS)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

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6500 Pathophysiology. Cr. 3

Prereq: admission to physician assistant studies program. Study of dynamics of the alteration in function in response to disease states of cells, tissues, organs and organ systems. (Y)

7000 Anatomy for Physician Assistants. Cr. 3

Prereq: admission to physician assistant studies program. Structural and functional anatomy of the human body relevant to physician assistant responsibilities. All major regions of body will be studied. Material fee as indicated in the Schedule of Classes. (Y)

7010 Clinical Medicine I. Cr. 2

Prereq: admission to physician assistant studies program. Introduction to etiology, manifestation, diagnosis, prevention and treatment of disease; includes: gastro-enterology, psychiatry, dermatology, heart and lungs, pediatrics, obstetrics and gynecology, cardiology, neurology, radiology, endocrinology, urology, orthopedics. Material fee as indicated in the Schedule of Classes. (Y)

7020 Clinical Medicine II. Cr. 2

Prereq: PAS 7010. Continuation of PAS 7010. Material fee as indicated in the Schedule of Classes. (Y)

7030 Clinical Medicine III. Cr. 2

Prereq: PAS 7020. Introduction to the etiology, manifestation, diagnosis, prevention, and treatment of disease. Systems covered include: gastroenterology, psychiatry, dermatology, heart and lungs, pediatrics, obstetrics and gynecology, cardiology, neurology, radiology, endocrinology, urology, and orthopedics. Material fee as indicated in the Schedule of Classes. (Y)

7040 Patient Evaluation I. Cr. 2

Prereq: admission to physician assistant studies program. Elicitation and recording of complete medical history; chief complaint history of present illness, past medical history, social history, family history. Students taught to perform complete and comprehensive physical examination. Material fee as indicated in the Schedule of Classes. (Y)

7050 Patient Evaluation II. Cr. 1

Prereq: PAS 7040. Continuation of PAS 7040. Material fee as indicated in the Schedule of Classes. (Y)

7060 Patient Evaluation III. Cr. 3

Prereq: PAS 7050. Continuation of PAS 7050. Material fee as indicated in the Schedule of Classes. (Y)

7070 Health Care Issues I. Cr. 1

Prereq: admission to physician assistant studies program. Principal components of health care system: social, political, and economic evolution and development. Material fee as indicated in the Schedule of Classes. (Y)

7080 Health Care Issues II. Cr. 1

Prereq: PAS 7070. Specialized techniques required in care of patients. Material fee as indicated in the Schedule of Classes. (Y)

7090 Health Care Issues III. Cr. 1

Prereq: PAS 7080. Fundamental principles of experimental and statistical analysis, emphasizing biomedical research. Material fee as indicated in the Schedule of Classes. (Y)

7100 Pharmacology I. Cr. 1

Prereq: admission to physician assistant studies program. Principles of pharmacologic action followed by review of major therapeutic agents in each clinical area. Major systems of the body as related to drugs and diseases. Material fee as indicated in the Schedule of Classes. (Y)

7110 Pharmacology II. Cr. 2

Prereq: PAS 7100. Continuation of PAS 7100, Material fee as indicated in the Schedule of Classes. (Y)

8000 Internal Medicine Rotation (Practicum). Cr. 4

Prereq: completion of first year didactic curriculum in PAS. Student is exposed to variety of medical situations; establishment of health states database for patient, performance of complete physical examination, ordering of appropriate diagnostic screening. Material fee as indicated in the Schedule of Classes. (Y)

8010 Obstetrics and Gynecology Rotation (Practicum). Cr. 2

Prereq: completion of first year didactic curriculum in PAS. Introduction to the problems of prenatal and postnatal care. Material fee as indicated in the Schedule of Classes. (Y)

8020 Emergency Medicine Rotation (Practicum). Cr. 2

Prereq: completion of first year didactic curriculum in PAS. System approach to management of surgical and medical emergencies. Initial assessment and triage of injured patients and management of common problems. Preparation for Advance Cardiac Life Support (ACLS) competencies. Material fee as indicated in the Schedule of Classes. (Y)

8030 Pediatrics Rotation (Practicum). Cr. 2

Prereq: completion of first year didactic curriculum in PAS. Study of the problems of newborns and children through adolescence. Material fee as indicated in the Schedule of Classes. (Y)

8040 Psychiatry Rotation (Practicum). Cr. 2

Prereq: completion of first year didactic curriculum in PAS. Development of concepts taught in the didactic curriculum with specific reference to mental illness. Manifestations of psychopathology, patient evaluation, psychiatric interviews and assessments of mental status of individual patients. Material fee as indicated in the Schedule of Classes. (Y)

8050 Surgery Rotation (Practicum). Cr. 4

Prereq: completion of first year didactic curriculum in PAS. Examination of patients anticipating surgical intervention, arrangement and

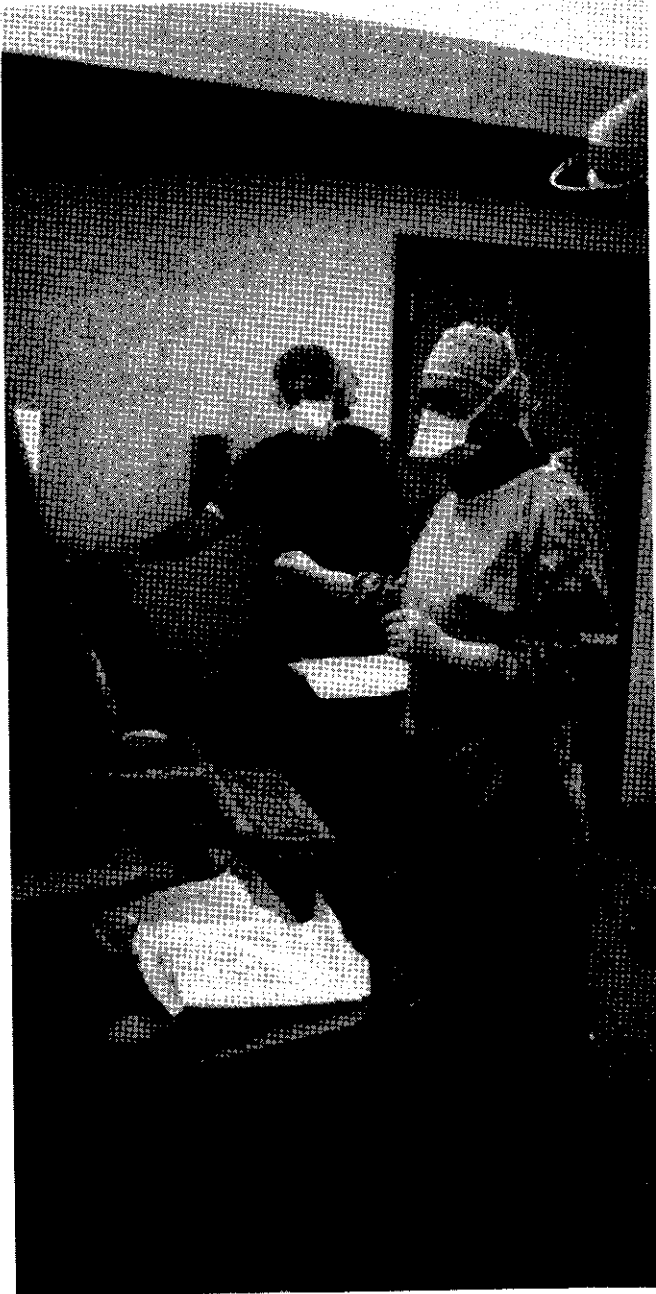
recommendation of further evaluations and participation in selected surgical procedures. Material fee as indicated in the Schedule of Classes. (Y)

8060 Family Medicine Rotation (Practicum). Cr. 6

Prereq; completion of first year didactic curriculum in PAS. Supervised clinical family medicine rotation to provide experience in outpatient evaluation of pediatric and adult patients. Material fee as indicated in the Schedule of Classes. (Y)

8070 Elective Rotation (Practicum). Cr. 2

Prereq; completion of first year didactic curriculum in PAS. Rotation specialized to the particular needs of individual physician assistant students in last phase of clinical training. Material fee as indicated in the Schedule of Classes. (Y)



College of Science

DEAN: John D. Petersen

Foreword

The College of Science provides instruction and supports research over a broad spectrum of scientific disciplines. The program of instruction serves the related purposes of acquainting students with the methods used in the search for scientific truth and of preparing students to apply scientific knowledge to the solution of practical problems. The active programs of research carried out in the various departments fulfill the University's obligation to increase fundamental scientific knowledge and to apply scientific knowledge to the improvement of the human condition. The research endeavor enriches the educational program by assuring the professional competence of those responsible for teaching, by making certain that students are taught the latest theories and techniques, and by imbuing the teaching process with the excitement of discovery.

Master's Degrees and Majors

MASTER OF ARTS with majors in

<i>Applied Mathematics¹</i>	<i>Mathematical Statistics</i>
<i>Biological Sciences</i>	<i>Nutrition and Food Science</i>
<i>Chemistry</i>	<i>Physics</i>
<i>Computer Science</i>	<i>Psychology</i>
<i>Mathematics</i>	<i>Speech-Language Pathology</i>

MASTER OF SCIENCE with majors in

<i>Audiology</i>	<i>Geology</i>
<i>Biological Sciences</i>	<i>Nutrition and Food Science</i>
<i>Chemistry</i>	<i>Physics</i>
<i>Computer Science</i>	

Doctoral Degrees and Majors

DOCTOR OF PHILOSOPHY with majors in

<i>Biological Sciences</i>	<i>Nutrition and Food Science</i>
<i>Chemistry</i>	<i>Physics</i>
<i>Computer Science</i>	<i>Psychology</i>
<i>Mathematics</i>	<i>Speech-Language Pathology²</i>

ACADEMIC REGULATIONS

ADMISSION REQUIREMENTS

Admission to any graduate degree program is contingent upon meeting the admission requirements of the Graduate School. For further information on these requirements, see page 16.

Preference is given to those students who have achieved superior undergraduate scholastic records and who evidence superior abilities.

All prerequisite credits must be earned prior to or concurrent with the first graduate credits. If undergraduate preparation for the major field is considered deficient, additional work may be required at the undergraduate level. Many programs have additional individual admission requirements. Students should consult the subsequent departmental sections in this bulletin for specific requirements in each field of study.

Graduate Record Examinations

The Graduate Record Examination (GRE) is used to assist advisers in evaluating educational preparation and to serve as a basis for planning future study. There is no uniform policy concerning GREs; some departments require GRE scores from all applicants for admission, while others require scores only from students in specified classifications. Students should consult the department in which they wish to major to determine which examinations must be taken.

Students required to take these examinations must apply at the Testing and Evaluation Office, 698 Student Center, either prior to or at the time of admission. Students who previously have taken the examination may have transcripts of these scores submitted. After the initial registration, no subsequent enrollment will be permitted nor will candidacy be authorized until examination requirements have been fulfilled.

'AGRADE' — Accelerated Graduate Enrollment

Several departments of the College — Biological Sciences, Chemistry, Computer Science, Geology, Mathematics, and Nutrition and Food Science — permit academically superior students to petition for admission into the College's 'AGRADE' program. 'AGRADE' procedures enable qualified seniors to enroll simultaneously in the undergraduate and graduate programs of the College and apply a maximum of fifteen credits towards both a bachelor's and master's degree in the major field. Students electing 'AGRADE' programs may expect to complete the bachelor's and master's degrees in five years of full-time study.

An 'AGRADE' applicant may petition the Graduate Committee of the major department for acceptance into the program no earlier than the semester in which ninety credits are completed. Applicants must have an overall h.p.a. at the 'Cum Laude' level (approximately 3.4) and not less than a 3.6 h.p.a. in the major courses already completed. If the student's petition is accepted, the student's faculty adviser shall develop a graduate *Plan of Work*, specifying the 'AGRADE' courses to be included in subsequent semesters.

For more details about the 'A GRADE' program, contact the Graduate Office of the College of Science (577-2690), and the chairperson of the major department.

DEGREE REQUIREMENTS

Graduate degrees are conferred not merely upon the completion of a prescribed number of courses nor necessarily after a given period of residence, but rather in recognition of each candidate's outstanding ability and high attainments as evidenced in all course work, research, scholarly writing, examinations and personal fitness for a chosen profession. All course work must be completed in accordance with the academic procedures of the Graduate School (see the section of this bulletin beginning on page 16) and College of Science regulations. In addition to the general Graduate School requirements for degrees and to the information provided below, other

1. Designation of the field is part of the degree title.

2. An admissions moratorium is in effect for this program.

requirements are specified by the individual graduate departments. Students should consult the programs and requirements of the departments in which they plan to major.

Candidacy

Candidacy is an advanced status recommended by student advisers and authorized by the Graduate School or Liberal Arts/Science Graduate Office upon evidence of superior scholarship, appropriate personal qualities and promise of professional competence. Students should note that admission as an applicant does not assure acceptance as a candidate for a degree, and that candidacy is a necessary but not sufficient requirement for graduation.

To be eligible for candidacy, students must file officially approved *Plans of Work*. The *Plan* should provide for effective concentration in a major field, with proper supporting courses in related fields. Ph.D. applicants should file their *Plan* with the Graduate School; master's applicants with the graduate officer of the College of Science. In preparing a *Plan*, students should evaluate with care their personal and professional objectives as well as all degree and departmental requirements. Normally, a student enrolled in a master's degree program is expected to file a *Plan of Work* by the time twelve graduate credits or their equivalent have been earned. Otherwise, subsequent registration is denied.

It is recommended that an approved *Plan* be filed by applicants for the Ph.D. degree when approximately forty credits beyond the baccalaureate degree have been earned. *In addition to filing the Plan, students must have satisfied foreign language requirements and must have passed the Final Qualifying Examination (written and oral) and must have submitted and received the Graduate Dean's approval on the Dissertation Outline before the doctoral committee will recommend candidacy.*

Commencement

Information concerning commencement, caps and gowns, invitations, tickets, time and place, assembling and other relevant items will be mailed to graduates by the Alumni Office prior to the event. Candidates for advanced degrees are requested and expected to attend the commencement at which the University confers upon them the honor of the degree earned.

Master's Degree Requirements

In most master's degree programs, the minimum requirement for the degree is thirty-two credits under either Plan A or Plan B or Plan C as cited below. At least twenty-four credits must be taken in residence. At least six credits of work in the major field, in addition to the essay or thesis, must be in courses open only to graduate students (courses numbered 7000 and above).

Plan A requires twenty-four credits of course work plus an eight credit thesis.

Plan B requires twenty-nine credits of course work plus a three credit essay.

Plan C requires thirty-two credits of course work. Essay or thesis not required. Authorized only in selected areas. Most departments require a final comprehensive examination. Students should consult adviser.

These requirements vary slightly by department; see listings under the individual departments for exact information. In accordance with the Time Limitation of the Graduate School, all requirements for the master's degree must be completed within a six-year period.

DOCTORAL DEGREE REQUIREMENTS

Preliminary Qualifying Examination

Responsibility for preliminary qualifying examinations is vested in the graduate faculty of each department; specifically, in its committee on doctoral study. Accordingly, committees may require this examination of all candidates or of any candidate prior to the final qualifying examination.

Final Qualifying Examination for Candidacy

The final qualifying examination is required of all applicants. Applicants may request their doctoral committee to authorize the final qualifying examination after an approved *Plan of Work* has been filed with the Graduate School. The examination will consist of both written and oral portions. When this examination has been passed, and when the Dean of the Graduate School has approved the Dissertation Outline, applicants will be advanced to the status of 'doctoral candidate.'

The written qualifying examination will cover the applicant's major and minor areas and may include such other related matters as the doctoral examining committee may prescribe. Within thirty days after the written examination has been passed, the oral qualifying examination will be conducted by the departmental qualifying examination committee. This examination will relate to the subject matter of the written examination, the applicant's major and minor areas and other pertinent matters.

If an examining committee does NOT certify that the applicant has passed either the written or oral examinations, it must make specific recommendations with reference to admitting the applicant to a second examination and specify any additional work that should be completed prior to such an examination. If a second examination is held, it must be scheduled within one calendar year and shall be considered final.

Student doctoral committees, including one member from outside of the student's department, are selected at the time the doctoral thesis outline and prospectus are prepared. At the final dissertation defense a Graduate Examiner outside of the student's department is appointed to the committee by the Graduate School.

Essays, Theses, and Dissertations

There is no prescribed form for the Master's essay. Essay guidelines, indicating standard style manuals for each department and title-page samples, are available in the Liberal Arts/Science Graduate Office, 2155 Faculty/Administration Building.

Master's degree candidates under the essay plan register for the course numbered 7999, Master's Essay Direction, in the department of their major; a total of three credits must be elected.

The original copy of the essay should be submitted to the Liberal Arts/Science Graduate Office after it is approved and signed by the adviser. This copy will be returned to the department.

The thesis or dissertation *must be an original work, either in or definitely related to the student's major area of specialization*. If proper standards of quality, objectivity, originality, and independence are maintained, candidates may use data which they have derived from their University research. Neither the results of the research nor the publication of findings can be restricted by any non-university agency nor can they be published prior to acceptance by the Graduate School, unless prior approval of such publication has been secured from both the adviser and the Graduate School. Advisers have primary responsibility for approval of the essay or thesis, but every member of a doctoral committee must read, approve and sign the dissertation.

Students may not begin work on a manuscript until they have submitted an approved *Plan of Work* and outline form. They may then register for the thesis or dissertation and pay regular fees in the same manner as for all other course work.

Master's candidates under the thesis plan register for the course numbered 8999 in the department of their major. This course is entitled *Master's Thesis Research and Direction* and must be elected for a total of eight credits. Ph.D. candidates register for thirty credits in the course numbered 9999 in their major field, *Doctoral Dissertation Research and Direction*. All credit used toward meeting dissertation requirements must be earned in this course.

The publication and dissemination of research findings will not be restricted by the University after the manuscript has been received and accepted by the Graduate Office.

Outline and Record Form

Before students begin working on theses or dissertations, they must file appropriate outline and record of approval forms. Master's candidates must prepare three copies which, after receiving departmental approval, will be forwarded to the Liberal Arts/Science Graduate Office. Doctoral candidates must prepare four copies which, after receiving departmental approval, will be forwarded to the Graduate School.

Financial Aid

For general sources of graduate financial aid, see the section on Graduate Financial Assistance, beginning on page 30. Specific information may be found in various departmental sections of the College of Science, below.

COLLEGE DIRECTORY

ADMINISTRATION

DEAN:

John D. Petersen 2155 Old Main; 577-2515

ASSOCIATE DEANS

Lowell E. Wenger 2155 Old Main; 577-2520

Alice M. Young 2155 Old Main; 577-2516

SERVICE AREAS

Bulletin and Scheduling 2155 Old Main; 577-2542

Liberal Arts/Science Graduate Office
2155 Faculty/Admin. Bldg.; 577-2690

Major/Curriculum Office 2155 Faculty/Admin. Bldg.; 577-3117

DEPARTMENTAL OFFICES

Audiology and Speech-Language

Pathology 581 Manoogian; 577-3339

Biological Sciences 114 Biological Sciences; 577-2873

Chemistry 123 Chemistry; 577-2595

Computer Science 431 State Hall; 577-2477

Geology 224.1 Old Main; 577-2506

Linguistics 51 W. Warren.; 577-8642

Mathematics 1150 Faculty/Admin. Bldg.; 577-2479

Nutrition and Food Science 3009 Science Hall; 577-2500

Physics and Astronomy 135 Physics; 577-2721

Psychology 71 West Warren Ave.; 577-2800

Mailing address for all offices: (Department Name), College of Science, Wayne State University, 4841 Cass, Detroit, Michigan 48202

AUDIOLOGY and SPEECH-LANGUAGE PATHOLOGY

Office: 581 Manoogian Hall; 577-3339; 577-1393

Interim Chairperson: Patricia Siple

Professors

William Leith (Emeritus), John M. Panagos

Associate Professors

Michael W. Church, Dale O. Robinson, Thomas H. Simpson

Assistant Professors

Jean Andruski, D'Jaris Coles

Instructors

Zenara Covington, Karen O'Leary, Gilmour M. Peters, Kristine V. Sbaschnig

Adjunct Faculty

Kenneth R. Bouchard, Jaynee A. Calder, Frances E. Eldis, Ellen Fairbrother, Sandra L. Hamlet, Barbara Jacobson, Gary P. Jacobson, Bev Jaynes, Alex Johnson, Michael Kimbarow, Kathleen Pistono, Sabina A. Schwan, Mark Simpson, Lizbeth Stevens, John Tonkovich

Degree Programs

MASTER OF SCIENCE with a major in audiology

MASTER OF ARTS with a major in Speech-Language Pathology

DOCTOR OF PHILOSOPHY with a major in Speech-Language Pathology¹

Graduate Degrees

Audiology is the study of the normal and impaired auditory system. Speech-language pathology focuses on impaired speech, language, fluency, and voice function of children and adults. The master's degree programs offer students intensive and diverse academic and clinical experiences. The State of Michigan Teaching Certificate may also be earned by students who wish to teach in the public school system.

The course of study for either program should be developed as early as possible with the student's major adviser, and candidacy must be established by filing an approved *Plan of Work* by the time twelve credits have been earned. SLP 7000 must be included in all *Plans of Work* and should be taken at the earliest opportunity.

Scholarship: All course work must be completed in accordance with the academic procedures of the College of Science and the Graduate School governing graduate scholarship and degrees; see pages 364-366 and 16-30, respectively.

Assistantships: Four graduate teaching assistantships are available in the Department. Students should consult the Chairperson of the Department for information.

Accreditation: The programs are accredited by the Council on Academic Accreditation of the American Speech-Language-Hearing Association.

¹An admissions moratorium is in effect for this program.

Master of Science with a major in Audiology

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Additionally, applicants are expected to meet the following requirements of the Department: Students applying for the Master of Science program must have a baccalaureate degree, preferably with an emphasis in either biological or social sciences. An honor point average of 3.0 or better is required for regular admission. Graduate Record Examination results are required. All applicants must submit three letters of recommendation and must provide a written Statement of Intent with their formal application. Deadline for receipt of application for Fall admission is February 1.

DEGREE REQUIREMENTS: This master's degree usually is offered as a Plan C master's program requiring forty-eight to fifty-three credits in course work; however, some students elect Plan A, which requires an eight-credit thesis. Details of the program and application forms are available from the Department.

Master of Arts with a major in Speech-Language Pathology

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. The Department requires that the applicant have a 3.0 honor point average. A minimum of 26-30 semester credits in the area of specialization is required. Graduate Record Examination results are also required.

It is essential that prospective graduate students in this area confer with an adviser in the area of Speech-Language Pathology concerning academic, clinical and professional programs to meet certification requirements as set forth by the American Speech-Language-Hearing Association. Every graduate student in this area must complete the following: SLP 6360, 6640, 7000, 7010, 7360, 7380, 7590, 7600, 7610, 7620, 7630, 7640, 7660, 7680, 8390 or faculty-approved substitutions or electives.

DEGREE REQUIREMENTS: The Master of Arts degree is offered by this Department under the following options:

Plan A: 54 - 60 credits, including an eight-credit thesis.

Plan B: 54 - 60 credits, including a three-credit essay.

Plan C: 55 credits in course work, plus written and/or oral comprehensive examinations in the major (total credits determined by major area of study).

Doctor of Philosophy

The Department has declared a temporary moratorium on the admission of new applicants to the doctoral program. For additional information regarding future enrollment, students should contact the Chairperson.

GRADUATE COURSES

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

AUDIOLOGY (AUD)

5400 Introduction to Audiology. Cr. 3

Introduction to physics of sound, anatomy of the hearing mechanism, audiometry, hearing aids, habilitation and rehabilitation of the hearing handicapped. (F)

5420 Introduction to Aural Rehabilitation. Cr. 3

Prereq: AUD 5400. Principles and practices of aural rehabilitation including hearing aids. (S)

6000 Electrophysiological Procedures. Cr. 4

Prereq: AUD 5400; graduate standing in audiology or speech-language pathology, or consent of instructor. Two distinct electrophysiological measures, auditory evoked potentials (AEPs) and acoustic immittance, are presented. Both procedures consist of several subtests used to assess the auditory system from the middle ear to the cortex, both in normal listeners and patients with auditory pathology. (W)

6300 Practicum in Audiology. Cr. 3

Prereq: AUD 5400, 5420. Supervised training and practice in pure tone threshold measurement and aural rehabilitation. Material fee as indicated in the Schedule of Classes. (T)

6400 Anatomy, Physiology and Psychoacoustics of Audition. Cr. 4

Prereq: graduate standing in audiology or speech-language pathology. General principles of organization and function of peripheral and central pathways subserving the sense of audition. Perceptual principles of hearing in domains of intensity, frequency, space and time. (F)

6410 Pure-tone and Speech Audiometry. Cr. 3

Prereq: graduate standing in audiology or speech-language pathology recommended. Fundamental principles and clinical applications of pure-tone and speech audiometry. Laboratory assignments required. (F)

6420 Special Audiologic Procedures. Cr. 2

Prereq: AUD 6410. Special applications of pure-tone and speech stimuli in the assessment of peripheral and central auditory problems. Use of physiological tests in the diagnostic process. (W)

6430 Hearing Aids. Cr. 4

Prereq: AUD 6410. Electroacoustic and clinical aspects of acoustic amplifiers for the hearing handicapped. (W)

7300 Clinical Internship. Cr. 3

Prereq: AUD 5400 or equiv. Offered for S and U grades only. Open only to audiology graduate students. Supervised observation, train-

ing and practice in audiological procedures. Placements in local audiology settings as assigned by clinical rotation coordinator. (T)

7400 Research Projects in Audiology. Cr. 3 (Max. 9)

Student computer account required. Methods and procedures for experimental study of auditory function in the normal and hard-of-hearing; independent research projects. (I)

7410 Psychoacoustics. Cr. 3

The behavioral response of organisms to sound. In-depth study of classical and contemporary topics in psychological acoustics. Laboratory included. (I)

7420 Industrial and Community Problems in Audiology. Cr. 3

Prereq: six graduate credits in audiology recommended. Hearing conservation programs in industry and in the community; discovery and prevention of hearing loss; auditory and non-auditory effects of noise on hearing; federal and state regulations. (W)

7430 Pediatric Audiology. Cr. 3

Prereq: AUD 6410. Introduction to embryology, tests, test procedures, and counseling of parents with hearing-handicapped children. (S)

7490 Educational Management of Hearing Impaired Children. Cr. 3

Prereq: AUD 6430, 7430. Preschool guidance and counseling, modern educational models and placement options, and the role of the audiologist in educational management. (F)

7990 Directed Study. Cr. 1-3 (Max. 6)

Prereq: consent of adviser. Literature review of an approved topic in audiology under supervision of the graduate faculty. Course may include an experimental investigation. Comprehensive written report is required. (Y)

8430 Vestibular System. Cr. 4

Anatomy, physiology and functional assessment of the vestibular system including instrumentation, procedures, and interpretation of ENG recordings. Hands-on laboratory exercises included. (S)

8480 Seminar in Audiology. Cr. 3 (Max. 12)

(Y)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of adviser. (I)

SPEECH-LANGUAGE PATHOLOGY (SLP)

5120 Speech Science. (SED 5120) Cr. 3

Prereq: SLP 5300, 5080, 5090. Speech production, acoustics of sound, perception of the speech signal. (Y)

5360 (WI) Clinical Practice in Speech-Language Pathology. (SED 5340) Cr. 3

Prereq: SLP 6460, 6480, and 5310, each with grade of B or better. Supervised experience in application of methods of diagnosis and treatment of clinical cases. Material fee as indicated in the Schedule of Classes. (T)

6330 (SED 7790) Language Bases of Learning Disabilities. (CDS 6330) Cr. 3

Open only to learning disabilities/emotional impairment majors. Normal language acquisition and development and language pathology, including neurological process involved in speech reception and production, and assessment of language disorders as they relate to learning disabilities. (S)

6360 Advanced Clinical Practice in Speech-Language Pathology. (SED 6360) Cr. 3

Prereq: SLP 5360 or equiv. with grade of B or better. Supervised experience in application of methods of diagnosis and treatment of clinical cases. Material fee as indicated in the Schedule of Classes. (T)

6460 Language and Phonological Disorders. (SED 6460) Cr. 3

Prereq: SLP 5080, 5090, 5300, 5320. Introduction to the clinical management of articulation and language disorders. (W)

6480 Organic and Fluency Disorders. (SED 6480) Cr. 3

Prereq: SLP 5080, 5090, 5300, 5320. Introduction to the clinical management of cleft palate, voice, and stuttering disorders. (W)

6620 Introduction to Voice Disorders and Cleft Palate. (SED 6620) Cr. 3

Prereq: SLP 5300. An introduction to basic concepts related to acquisition and manifestations of voice disorders in children and adults and to resonance disorders as a result of oral clefting, including remediation. (W)

6640 Language Pathology: Etiology and Diagnosis. (SED 6640) Cr. 3

Prereq: SLP 5300 and 5320. Descriptions, etiology, methods of diagnosis of language disorders in children, including remediation. (F)

7000 Introduction to Graduate Study in Speech-Language Pathology. Cr. 3

Required during first twelve credits of graduate study. (Y)

7020 Speech Production and Perception. (SED 7320) Cr. 3

Prereq: SLP 7010. Integration of the information from various disciplines involved in the production and measurement of speech and language. (F)

7360 Internship in Speech Pathology. (SED 7300) Cr. 4 (Max. 12)

Prereq: consent of instructor. Advanced professional experience in clinical speech language pathology. (T)

7380 Diagnosis of Speech and Language Problems. (SED 7310) Cr. 3 (Max. 9)

Prereq: graduate standing in speech-language pathology. Clinical practice in diagnosis; handling referral to medical specialists; planning, training, treatment procedures. (F,S)

7530 Geriatric Communication Disorders. Cr. 3

Prereq: graduate standing in speech-language pathology. Speech, hearing, language and cognitive problems associated with normal aging and/or various pathological conditions. (Y)

7570 Augmentative and Computer-Based Communication. Cr. 3

Application of nonelectronic, electronic, and computer systems for non-speaking adults and children. (Y)

7590 Dysphagia. (SED 7590) Cr. 3

Prereq: SLP 5090. Assessment and management of neurologic and mechanical swallowing disorders in children and adults. (S)

7600 Phonological Disorders. (SED 7600) Cr. 3

The etiology, diagnosis and advanced treatment regimens of phonological disorders in children and adults. (W)

7610 Stuttering. (SED 7610) Cr. 3

The etiology, diagnosis and treatment of stuttering disorders in children and adults. (S)

7620 Voice Disorders. (SED 7620) Cr. 3

Prereq: SLP 6620. The etiology, diagnosis and treatment of voice disorders in children and adults. (W)

7630 Aphasia. (SED 7630) Cr. 3

Assessment and remediation principles designed for the adult aphasic. (Y)

7640 Language Disorders. (SED 7640) Cr. 3

Prereq: SLP 6640. Linguistic, cognitive, pragmatic and perceptual considerations in assessment and remediation of childhood language disorders. (W)

**7660 Neurology and Motor Speech Disorders. (SED 7660)
Cr. 3**

The etiology, diagnosis and treatment of neuromuscular disorders in children and adults, including neuroanatomy, dysarthria, and cerebral palsy. (W)

7680 Adult Cognitive and Communicative Disorders. Cr. 3

Prereq: SLP 7660. Symptomatology assessment and intervention for right-hemisphere brain damage, traumatic brain injury, and dysphagia. (Y)

7690 Cultural and Linguistic Diversity in Communication Disorders. (SED 7690) Cr. 3

Prereq: CDS 6640. Theoretical and applied issues in cultural and linguistic diversity as they relate to concerns in communication disorders and sciences. (I)

7990 Directed Study. Cr. 1-9 (Max. 9)

Prereq: consent of chairperson, if replacing regular course work. Graduate study in areas not covered in scheduled curriculum, including library and field work. (Y)

7991 Directed Study: Ph.D. Cr. 1-9 (Max. 9)

Prereq: consent of chairperson and graduate officer. Open only to doctoral students. Directed research for major, and pilot work for dissertation. (Y)

7999 Master's Essay Direction. Cr. 1-3

Prereq: consent of adviser. (Y)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of adviser. (Y)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16 (Max. 30)

Prereq: consent of adviser. (Y)

BIOLOGICAL SCIENCES

Office: 1360 Biological Sciences; 577-2873

Chairperson: Jack Lilien

Associate Chairperson: R. Anton Hough

Academic Adviser: Lorna Brooks

Academic Services Officer: Linda R. VanThiel

Professors

Robert Arking, D. Carl Freeman, Miriam L. Greenberg, Garrett T. Heberlein, R. Anton Hough, Jack Lilien, Hiroshi Mizukami, William S. Moore, Allen W. Nicholson, David L. Njus, Howard R. Petty, P. Dennis Smith, John D. Taylor

Associate Professors

Kuo-Chun Chen, Philip R. Cunningham, Edward M. Golenberg, V. Hari, John Lopes, Leo S. Luckinbill, Heimo Riedel, Ann Sodja, Robert S. Stephenson, Curtis J. Swanson

Assistant Professors

Jerry Caldwell, Liza A. Elferink, Mark VanBerkum

Emeriti Professors

Walter Chavin, David R. Cook, Dominic L. DeGuisti, Stanley K. Gangwere, James M. Jay, Lida H. Mattman, William Prychodko, Claude M. Rogers, Harold W. Rossmore, Albert Siegel, William L. Thompson

Emeritus Associate Professor

Willis W. Mathews

Graduate Degrees

MASTER OF ARTS with a major in Biological Sciences

MASTER OF SCIENCE with a major in Biological Sciences

MASTER OF SCIENCE in Molecular Biotechnology

DOCTOR OF PHILOSOPHY with a major in Biological Sciences and specializations in cellular and developmental biology; environmental, evolutionary and systematic biology; microbiology and molecular genetics; regulatory biology and biophysics

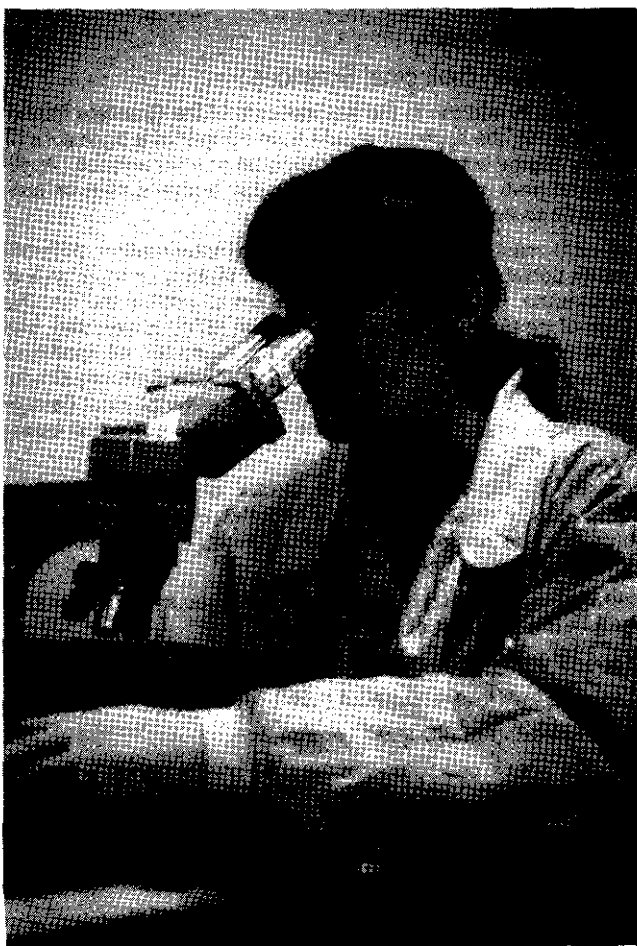
Master of Arts with a Major in Biological Sciences

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. In addition, applicants are expected to have attained a level of scholarship in the baccalaureate program equal to an honor point average of 3.0 or better, including adequate preparation in biological sciences and supporting courses in chemistry, physics and mathematics. Normally, the entering student will be expected to have fulfilled the equivalent of the requirements for the Bachelor of Arts (or Bachelor of Science) degree at Wayne State University and to satisfy any deficiencies by course work before becoming a candidate for the advanced degree.

DEGREE REQUIREMENTS: The Department offers the Master of Arts degree under the Plan C option.

All course work must be completed in accordance with the academic procedures of the College and the Graduate School governing graduate scholarship and degrees; see pages 364-366 and 16-30, respectively. Course requirements include the following:

Plan C: *Thirty-two credits in course work, at least twenty-four of which must be completed in the Department of Biological Sciences.* Eight cognate credits may be taken in other College of Science departments, the College of Education, or the School of Medicine. All students must meet with the Departmental academic adviser once each semester for approval of course selections.



Students must elect courses according to departmental requirements. A list of these course requirements is available in the Departmental Advising Office, 1109 Biological Sciences Building.

Candidacy: Applicants become degree candidates by filing a *Plan of Work* which must be approved by the department Graduate Officer.

Master of Science with a Major in Biological Sciences

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. In addition, applicants are expected to have attained a level of scholarship in the baccalaureate program equal to an honor point average of 3.0 or better, including adequate preparation in biological sciences and supporting courses in chemistry, physics and mathematics. Normally, the entering student will be expected to have fulfilled the equivalent of the requirements for the Bachelor of Science degree at Wayne State University and to satisfy any deficiencies by course work before becoming a candidate for the advanced degree. The general portion of the Graduate Record Examination (GRE) with a score of 1550 or higher is required for admission to the Master of Science program.

DEGREE REQUIREMENTS: The Department offers the Master of Science degree under the Plan A option.

All course work must be completed in accordance with the academic procedures of the College and the Graduate School governing graduate scholarship and degrees; see pages 364-366 and 16-30, respectively. Requirements include the following:

Plan A: Twenty-four credits in course work, plus a thesis (eight credits) based on completion of a research program.

Under *Plan A*, the eight credits of thesis work must be in original laboratory or field research under the direction of the student's major adviser. At least twenty-four of the total credits must be from the Department of Biological Sciences. A final oral examination is required, based on the candidate's course work and research.

Students must complete one semester of two laboratory rotations before choosing an adviser. Students must elect courses according to departmental requirements, including a core curriculum and electives determined by the student's graduate adviser with review and approval by the Graduate Committee Chairperson and the Department Graduate Officer. A list of these course requirements is available in the Departmental Advising Office, 1109 Biological Sciences.

Candidacy: Applicants become degree candidates by filing a *Plan of Work* which must be approved by the department Graduate Officer.

Master of Science with a Major in Molecular Biotechnology

The Molecular Biotechnology Program is a career-oriented program specifically designed to educate and train technically-oriented people in both the theory and practice of recombinant DNA technologies. The Program's main emphasis is on the application of these skills through internships in laboratories of faculty associated with the program.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. In addition, applicants are expected to have attained a level of scholarship in the baccalaureate program equal to an honor point average of 3.0 or better, including adequate preparation in biological sciences and supporting courses in chemistry, physics and mathematics. An introductory genetics course passed with a grade of 'B' or better is required, and completion of an introductory biochemistry course is strongly recommended. Deficiencies in course work must be completed before beginning the program. Students may enter in the Fall semester only.

DEGREE REQUIREMENTS: This program is offered as a Plan C master's program only, requiring thirty-two credits. All course work must be completed in accordance with the academic procedures of the College and the Graduate School governing graduate scholarship and degrees; see pages 364-366 and 16-30, respectively.

Candidacy: Applicants become degree candidates by filing a *Plan of Work* which has been approved by the department Graduate Officer.

Course work will be completed in accordance with the schedule set by the Program's director. Students must consult with Dr. Robert Arking, Program Director, each semester prior to registration.

Suggested Curriculum

Semester One (Fall) credits

BIO 5330 — Recombinant DNA I	3
BIO 6000 — Molecular Cell Biology I	3
Elective course work and prerequisites if needed.	3-4
Total:	9-10

Semester Two (Winter)

BIO 6330 — Recombinant DNA II	3
BIO 6010— Molecular Cell Biology II	3
BIO 6120 - Molecular Cell Biology Laboratory II.	3
Total:	9

Semester Three (Spring/Summer)

BIO 7780 — Genetic Engineering Laboratory II	6
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Semester Four (Fall)

BIO 7500 — Prokaryotic Gene Structures	4
BIO 8996 — Research in Molecular Biotechnology.	1-4
Total:	5-8

Semester Five (Winter)

BIO 6994 — Technical Communication in Molecular Biotechnology	1
BIO 7510 — Eukaryotic Gene Structures	4
BIO 8996 — Research in Molecular Biotechnology	6-4
Total:	6-9

Doctor of Philosophy with a Major in Biological Sciences

Admission: In addition to the requirements of the Graduate School (see page 16), the applicant should have completed a bachelor's or master's degree with a major in a biological or other science. Applicants who have completed degrees in other disciplines will be considered on an individual basis.

Applicants must take the Graduate Record Examination, both the Aptitude portion and the Advanced Test in Biology or other area of specialization. A minimum combined score of 1650 in the General portion of the Graduate Record Examination (GRE) is expected, with emphasis on the Verbal and Quantitative sections. All applicants must be accepted by the Department of Biological Sciences Graduate Admissions Committee. Three letters of reference must be submitted, along with a statement of the Candidate's goals and career objectives.

DEGREE REQUIREMENTS: The Doctor of Philosophy degree requires ninety credits beyond the baccalaureate degree, thirty of which must be earned as dissertation credit. The remaining sixty credits must include the following:

- at least twenty credits in Biological Sciences course work including eighteen credits from a core curriculum;
- at least eight credits of research or course work in a minor;
- no more than thirty-two credits in BIO 7996, Research Problems;
- two semesters of BIO 9996, Lab Rotation;
- thirty credits in course work at the 7000-level or higher.

All course work must be completed in accordance with the academic procedures of the College and the Graduate School governing graduate scholarship and degrees; see pages 364-366 and 16-30, respectively.

The *Qualifying Examination* is written, and should be taken after completion of seventy-five percent of the required course work and

before the beginning of the third year of residence. The *Dissertation Outline* and oral defense of the *Prospectus* must be completed within a year after the written qualifying examination and before a student can be considered a candidate for the degree. *Final Defense* of the dissertation must be completed in the student's final term according to the schedule published by the University.

Teaching/Research Requirement: Every doctoral student is required to teach at least two semesters or have equivalent teaching experience.

Continuance in the doctoral program depends upon satisfactory progress as determined by the student's Dissertation Committee with the departmental chairperson as an ex-officio member.

Financial Aid

General Sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 30 of this bulletin.

Teaching and research assistantships, as well as fellowships, are available to qualified graduate students. Inquiries and applications should be directed to the Chairperson of the Graduate Committee, Department of Biological Sciences.

Summer research stipends are also awarded to selected students.

GRADUATE COURSES (BIO)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

Most laboratory courses have a non-refundable materials fee and are so indicated in the Schedule of Classes. Breakage fees are not withheld, but students are financially responsible for the repair or replacement of University materials damaged or destroyed in classroom procedures.

5040 Biometry. Cr. 4 (LCT: 3;LAB: 3)

Prereq: BIO 3070 or 3120; MAT 1800. Student computer account required. Quantitative methods in biology. Statistical approach to data analysis and the design of experiments. Laboratory section permits actual analysis of selected statistical problems. (B)

5100 Limnology. Cr. 3-5 (LCT: 3; or LCT: 3;LAB: 6)

Prereq: BIO 3120; one course in chemistry or physics. Physical, chemical and biological properties of freshwater environments. Material fee as indicated in the Schedule of Classes. (B)

5180 Field Investigations in Biological Sciences. Cr. 2-12 (Max. 20) (FLD: 6)

Prereq: 12 credits in biology, consent of instructor. Field studies of one to fifteen weeks, emphasizing biological principles and techniques demonstrated in the field. (S)

5330 Recombinant DNA I. Cr. 3

Prereq: written consent of instructor. Review of origins of molecular biotechnology and its characteristic technologies; survey of applications of biotechnology to problems in industries. (F)

5480 Plant Pathology. (BIO 7480) Cr. 3

Prereq: BIO 1500 or 1520, and 2200. Principles of plant infection, structure and life cycle of plant pathogens, defense mechanisms, spread and control of plant disease. (B)

5550 Systematic Botany. Cr. 3 (LAB: 3;LCT: 2)

Prereq: BIO 1500 or 1520. Principles and methods of taxonomy and identification of native vascular plants. Material fee as indicated in the Schedule of Classes. (I)

5610 Vertebrate Embryology. Cr. 4 (LAB: 4;LCT: 3)

Prereq: BIO 1500 or 1520. Gametogenesis and fertilization; descriptive and analytical embryology of the sea urchin and amphibians; reproductive physiology and descriptive embryology of birds and mammals including humans. Laboratory studies of gametogenesis and development of sea urchin. Material fee as indicated in the Schedule of Classes. (Y)

5620 Developmental Biology. Cr. 3 (LCT: 3)

Prereq: BIO 3070. An analytical and comparative study of genetic and cellular mechanisms and their interaction with environmental factors to effect the developmental mechanisms which produce the adult organism. Origin and unfolding of structural patterns characteristic of different species; their evolutionary origins. (Y)

5630 Histology. Cr. 4 (LAB: 4;LCT: 3)

Prereq: BIO 1500 or 1520. Characteristics and identification of normal mammalian tissues. Micro-anatomy of the mammal. Functional interpretation of microstructure and fine structure. Material fee as indicated in the Schedule of Classes. (Y)

5640 Cancer Biology I. Cr. 3 (LCT: 3)

Prereq: BIO 2200 or 3400; PHY 2140; CHM 2260 or consent of instructor. Introduction to integrated analysis of cancer and cell biology, pathology, etiology and therapy. (F)

5680 (PSL 5680) Basic Endocrinology. Cr. 3.

Prereq: PSL 3220 or BIO 3400 or equiv. or coreq: PSL 7010. Basic description of the human endocrine system, the endocrine control of several physiologic processes (growth, development, metabolism and reproduction), and common endocrine disorders.

5700 Natural History of Vertebrates. Cr. 3 (LAB: 3;LCT: 2)

Prereq: 16 credits in biology. Life histories, survival and evolutionary strategies, laboratory and field identification, including study techniques of vertebrates; Michigan wildlife. Field trips. Material fee as indicated in the Schedule of Classes. (I)

5720 Ornithology. Cr. 3 (LAB: 3;LCT: 2)

Prereq: BIO 1500 or 1520. Morphology, systematics, ecology, evolution, physiology and behavior of birds. Field trips. Material fee as indicated in the Schedule of Classes. (I)

5730 Mammalogy. Cr. 4 (LCT: 2;LAB: 6)

Prereq: 16 credits in biology. Systematics, geographical distribution, ecology, adaptive radiation, patterns of growth and reproduction, physiology. Field trips. Material fee as indicated in the Schedule of Classes. (B)

5740 Entomology. Cr. 4 (LAB: 6;LCT: 2)

Prereq: BIO 1500 or 1520. The systematics, classification, and functional morphology of insects; methods of collection and study of insect specimens. Material fee as indicated in the Schedule of Classes. (I)

5750 Biology of Aging. (BIO 7750) Cr. 3 (LCT: 3)

Prereq: BIO 3070 or consent of instructor. Aging and senescence viewed as fundamental biological processes common to most organisms. Empirically-based discussion of investigative methods and accepted facts regarding aging, coupled with critical discussion of behavioral and biological interventions believed to retard or reverse

the aging process; critical analysis of theoretical interpretations of this data. (B)

6000 Molecular Cell Biology I. Cr. 3 (LCT: 3)

Prereq: BIO 2200 or 3400; PHY 2140; CHM 2260 or consent of instructor. Analysis of cell structure at the molecular and cellular levels and the physiological consequences of these structures: isolation, physico-chemical properties, and biological attributes of cells, organelles, and biopolymers including nucleic acids, proteins, and lipids. (F)

6010 Molecular Cell Biology II. Cr. 3 (LCT: 3)

Prereq: BIO 6000. Analysis of cell regulation at the molecular level. Cell development and differentiation. Genetic mechanisms including: DNA synthesis and repair, mechanism of gene expression and control. (W)

6020 Methods of Analyses. Cr. 2-4 (LCT: 2; or LAB: 6;LCT: 2)

Prereq: one year of chemistry and biology. Theory and application of instruments and procedures used in biological materials analysis. Topics include: error analysis, basic electronics, solutions and buffers spectroscopy, separation techniques, elemental analyses, laboratory application of computers. Material fee as indicated in the Schedule of Classes. (F)

6030 Physiological Genetics of Modern Disease. (BIO 7030) Cr. 3 (LCT: 3)

Prereq: BIO 3070. Physical and chemical properties of the genetic material; the fundamental mechanisms concerned with its replication, function, mutation, recombination and regulation; molecular basis of evolution. A critical presentation of interdisciplinary subjects of biology, biochemistry and biophysics in relation to recent advances in genetic engineering. (Y)

6040 Computer Application in Life Sciences. Cr. 4 (LCT: 2;LAB: 6)

Elementary introduction to microcomputers hardware and software; their utility in life science research as laboratory tools and as conceptual models. Programming in a language taught from scratch, interfacing to laboratory instruments, software for data analysis. Recommended for students from other disciplines with interest in biology. (I)

6060 Molecular Evolution. Cr. 3 (LCT: 3)

Prereq: BIO 3070 and 3090 or 3120. Patterns and processes of evolutionary change on the DNA sequence level. Emphasis on models of nucleotide substitutions, and genic evolution. Methods of phylogenetic inference. (I)

6070 Human Genetics. Cr. 3 (LCT: 3)

Prereq: BIO 3070. Mechanisms of human inheritance in individuals, families and populations. Sampling methods and data procurement. Statistical analysis of gene frequencies; cytogenetics and biochemical determinations of phenotypes. (B)

6080 Microbial and Cellular Genetics. (BIO 7080) Cr. 4 (LCT: 4)

Prereq: BIO 3070 or equiv. Principles and current progress in genetics at the molecular and cellular levels. Emphasis on those features of microorganisms and cultured animal and human cells appropriate for the study of the fundamental mechanisms concerning recombination, replication, metabolic functioning. (Y)

6090 Evolutionary Genetics. Cr. 3 (LAB: 3;LCT: 2)

Prereq: BIO 3070 and 3090 or 3120. Theoretical bases for microevolutionary change in natural populations of organisms; basic to study of evolutionary genetics and evolutionary ecology. (B)

6120 Molecular Cell Biology Laboratory II. Cr. 3 (LCT: 1;LAB: 6)

Prereq: BIO 6010 or written consent of instructor. Laboratory exercises illustrate methods and concepts of molecular biology and recombinant DNA analysis. Material fee as indicated in the Schedule of Classes. (Y)

6160 Molecular and Cellular Biophysics. Cr. 3 (LCT: 3)

Prereq: one year of biology, chemistry and physics. Analysis of the biologically important aspects of thermodynamics, chemical bonding, macromolecular structure, biomembranes and transport processes. (W)

6180 Membrane Biology. Cr. 3 (LCT: 3)

Prereq: one year of biology and chemistry; BIO 2200 or 3400; 6000 or 6160 recommended. Comprehensive analysis of cellular and model membranes integrating molecular structure and physiological properties. Structural, dynamic, and physiological properties examined, including molecular and macromolecular assemblies, physical and chemical analysis of molecular motion, functional aspects including trans-membrane signalling. (Y)

6250 Biology Instruction for Teachers. Cr. 2 (Max. 10) (LCT: 2)

Prereq: consent of instructor. Offered only for graduate credit; for teachers only. Discussion of basic biological principles in light of recent advances. (Y)

6260 Laboratory Biology for Teachers. Cr. 1 (Max. 5) (LAB: 1)

Prereq: consent of instructor. Offered only for graduate credit; for teachers only. Laboratory component of BIO 6250; basic laboratory techniques in light of recent advances in the biological sciences. (Y)

6330 Recombinant DNA II. Cr. 3

Prereq: BIO 5330 or written consent of instructor. Application of molecular biology and recombinant DNA technology of contemporary eukaryotic systems. Topics include: specialized application of PCR for cloning, generation of antibodies, the expression of recombinant proteins in cultured cells and transgenic animal models. (W)

6450 Aquatic Botany. Cr. 4 (LCT: 3;LAB: 3)

Prereq: BIO 3120. Systematics, physiology and ecology of algae and higher aquatic plants. Material fee as indicated in the Schedule of Classes. (I)

6620 Advanced Evolution. Cr. 3

Prereq: BIO 3120 or 3090 or equiv. Continuation of BIO 31200; emphasis on evolutionary biology. Topics include: history of evolutionary thought, origins of life, evolution of the cell, evolution of genes, evolution and behavior, evolution of life history traits, phylogenetics, historical biogeography, tempo and mode of evolution, species concepts and speciation, nature of adaptation and adaptive radiations. (Y)

6640 Advanced Ecology. Cr. 3 (LCT: 3)

Prereq: BIO 3120. Discussion and analysis of recent topics in ecological theory. (I)

6670 Comparative Marine Animal Physiology and Biochemistry. (BIO 7670) Cr. 5 (LCT: 2;LAB: 9)

Prereq: written consent of instructor obtained in semester prior to registration; introductory biology and organic chemistry recommended. Intensified two-week program at a marine biological station. In-depth study of comparative physiology and biochemistry of marine animals. Daily field collecting, laboratory sessions and evening lectures. Individualized research projects; presentation at concluding symposium. (Y)

6690 Neurobiology I. Cr. 3 (LCT: 3)

Prereq: BIO 3400 and 3100. Electrical and chemical signal transmission and signal processing in the nervous system. Integration of these functions into complex sensory and control mechanisms. Molecular mechanisms of electrical excitability and ion channels, neurotransmitters and receptors, second messengers, and feedback circuits. Neurobiology of motor control, sensory and regulatory systems. (B)

6800 (HWM 6800) Principles of Ecosystem Management. (BIO 6800) Cr. 2

Prereq: BIO 2200. Fundamentals and concepts of ecosystem management: ecological, legal, economic, sociological, and institutional factors, management tools, and practical considerations. (Y)

- 6840 Chemical Basis of Pharmacology. (BIO 6840) (CHM 6340) Cr. 3 (LCT: 3)**
Prereq: CHM 2260 and BIO 1510 or equiv. Not applicable for biological sciences major credit. Mechanisms of action and metabolism of commonly-used drugs and toxic substances from the cellular level to whole biological systems. (Y)
- 6994 Technical Communication in Molecular Biotechnology. Cr. 1-6**
Prereq: admission to molecular biotechnology program or consent of instructor. Methods of written and oral communication in the biotechnology field. (W)
- 7000 Recent Advances in Cellular and Developmental Biology. Cr. 3 (Max. 6) (LCT: 3)**
Prereq: written consent of instructor. Formalized and in-depth treatment of the current state of knowledge in a significant area of cell and molecular biology. Topics to be announced in Schedule of Classes. (I)
- 7030 (BIO 6030) Physiological Genetics of Modern Disease. Cr. 3 (LCT: 3)**
Prereq: BIO 3070. Physical and chemical properties of the genetic material; the fundamental mechanisms concerned with its replication, function, mutation, recombination and regulation; molecular basis of evolution. A critical presentation of interdisciplinary subjects of biology, biochemistry and biophysics in relation to recent advances in genetic engineering. (Y)
- 7050 Recent Advances in Environmental, Evolutionary and Systematic Biology. Cr. 2 (Max. 6) (LCT: 2)**
Prereq: consent of instructor. Formalized and in-depth treatment of the current state of knowledge in a significant area of environmental, evolutionary or systematic biology. Topics to be announced in Schedule of Classes. (I)
- 7080 (BIO 6080) Microbial and Cellular Genetics. Cr. 4 (LCT: 4)**
Prereq: BIO 3070 or equiv. Principles and current progress in genetics at the molecular and cellular levels. Emphasis on those features of microorganisms and cultured animal and human cells appropriate for the study of the fundamental mechanisms concerning recombination, replication, metabolic functioning. Includes independent studies. (Y)
- 7090 Molecular Genetics of Development. Cr. 3 (LCT: 3)**
Prereq: BIO 5620. An examination of the current and classical research literature dealing with the role of gene action in development. (B)
- 7100 Recent Advances in Microbiology and Molecular Genetics. Cr. 3**
Prereq: consent of instructor. Formalized and in-depth treatment of current state of knowledge in a significant area of microbiology and molecular genetics. (T)
- 7160 Advanced Biophysics. Cr. 3 (LCT: 3)**
Prereq: consent of instructor. Biophysical aspects of life; molecular biophysics, thermodynamics of macromolecules, excited states in biology, information transport, and molecular aspects of regulation. (B)
- 7170 Recent Advances in Regulatory Biology and Biophysics. Cr. 2 (Max. 6) (LCT: 2)**
Prereq: consent of instructor. In-depth treatment of the current state of knowledge in a significant area of regulatory biology or biophysics. Topics to be announced in Schedule of Classes. (I)
- 7190 (ANA 7190) Neuroscience Survey. (I M 7190) (PHC 7190) (PSL 7190) (PSY 7190) Cr. 3 (LCT: 3)**
Offered for S and U grades only. A substantive overview of neuroscience as a multifaceted discipline presented by faculty from the departments of anatomy, biochemistry, biology, immunology and microbiology, neurology, pharmacology, physiology and psychology. A comprehensive critical essay required. (B)
- 7480 (BIO 5480) Plant Pathology. (BIO 7480) Cr. 3 (LCT: 3)**
Prereq: BIO 1500 or 1520, and 2200. Principles of plant infection, structure and life cycle of plant pathogens, defense mechanisms, spread and control of plant disease. (B)
- 7500 Prokaryotic Gene Structure and Function. Cr. 4 (LCT: 4)**
Prereq: BIO 3070, 3100 or equiv. Detailed analysis of structure, expression and replication of genes of prokaryotic cells and associated extrachromosomal elements. Critical discussion of studies establishing central concepts in prokaryotic gene regulation, DNA structure and dynamics and nucleic acid enzymology. In-depth examination of molecular-genetic methodologies used in experimental investigations of prokaryotic systems. (Y)
- 7510 Eukaryotic Gene Structure and Function. Cr. 4 (LCT: 4)**
Prereq: BIO 6330 or 7780. Knowledge of current molecular technology is absolute prerequisite for this course; prerequisite course must have been satisfied. Analysis of structure, replication, expression and regulation of eukaryotic genome. Experimental approaches to study eukaryotic gene expression, critical comprehension of current research, design of experiments in gene expression. (Y)
- 7620 Molecular Virology. (MBG 7620) Cr. 3 (LCT: 3)**
Prereq: BIO 3070 or equiv. and CHM 6620 or equiv.; or consent of instructor. In-depth study of virus structure, mechanisms of viral replication, viral gene expression and regulation, viral pathogenesis, viral host interactions; and subviral pathogens. (I)
- 7650 Cancer Biology II. Cr. 3 (LCT: 3)**
Prereq: BIO 5640 or consent of instructor. Advanced, integrated analysis of cancer and cell biology, pathology, etiology and therapy. (Y)
- 7660 Neurobiology II. Cr. 3 (LCT: 3)**
Prereq: BIO 6690 or consent of instructor. Advanced topics; emphasis on neurodevelopment using model systems, and possible molecular mechanism; models of higher order functions: learning, memory behavior, cognition; human disease and recent genetic characterization. (B)
- 7670 (BIO 6670) Comparative Marine Animal Physiology and Biochemistry. Cr. 5 (LCT: 2; LAB: 9)**
Prereq: consent of instructor obtained in semester prior to registration; introductory biology and organic chemistry recommended. Intensified two-week program at a marine biological station; in-depth study of comparative physiology and biochemistry of marine animals. Daily field collecting, laboratory sessions, and evening lectures. Individualized research projects; presentation at concluding symposium. (B)
- 7750 (BIO 5750) Biology of Aging. Cr. 3 (LCT: 3)**
Prereq: BIO 3070 or consent of instructor. Aging and senescence viewed as fundamental biological processes common to most organisms. Discussion of investigative methods and accepted facts regarding aging; critical analysis of theoretical interpretation of the data. (B)
- 7780 Genetic Engineering Laboratory. Cr. 6**
Prereq: BIO 6120, 6330, or written consent of program director. Continuation of BIO 6120 laboratory experience; screening procedures and DNA sequencing methods. (Y)
- 7996 Research Problems. Cr. 1-8 (Max. 4 for M.S. students; max. 32 for Ph.D. students who may take up to 8 credits per semester)**
Prereq: written consent of adviser or instructor. Original investigation. (T)
- 8000 Special Topics. Cr. 1-6 (Max. 6, M.S.; max. 12, Ph.D.)**
Prereq: written consent of instructor. Various frontier aspects of biology. Work may include lectures, laboratories or discussion. Topics to be announced in Schedule of Classes. (Y)
- 8995 Graduate Seminar in Biology. Cr. 2 (Max. 4) (SMR: 2)**
Prereq: graduate standing in biology. One semester required for research master's students; two semesters required for doctoral stu-

dents. Presentations by graduate staff, advanced students, visiting lecturers. (Y)

8996 Research in Molecular Biotechnology. Cr. 1-4

Prereq: admission to biotechnology program or consent of instructor. Students spend two semesters doing research under the guidance of faculty associated with the Molecular Biotechnology Program and in other laboratories. (W,S)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: written consent of instructor. (T)

9996 Lab Rotation. Cr. 1-3 (Max. 4)

Prereq: consent of doctoral adviser. Open only to doctoral students and Plan A master's students. Research training in faculty laboratories on a rotating basis, up to two labs per semester. (T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16 (30 req.)

Prereq: written consent of doctoral adviser. Offered for S and U grades only. (T)



CHEMISTRY

Office: 221 Chemistry Building; 577-2559

Chairperson: Carl R. Johnson

Associate Chairperson: Ronald R. Schroeder

Academic Services Officer: Sharon Kelley

Professors

Ashok S. Bhagwat, Alan Brenner, Darrell D. Ebbing (Emeritus), John F. Endicott, Karl H. Gayer (Emeritus), Richard B. Hahn (Emeritus), William L. Hase, Carl R. Johnson, Tokuji Kimura (Emeritus), Stanley Kirschner (Emeritus), Norman A. LeBel (Emeritus), Richard L. Lintvedt, W. Martin McClain, Shahriar Mobashery, Martin E. Newcomb, Jr., John P. Oliver, John D. Petersen, Colin F. Poole, Morton Raban, Gene P. Reck, James H. Rigby, Louis J. Romano, David B. Rorabacher, A. Paul Schaap, George H. Schenk (Emeritus), H. Bernhard Schlegel, Calvin L. Stevens (Emeritus), Tche T. Tchen (Emeritus)

Associate Professors

David M. Coleman, Robert J. Levis, John Montgomery, Ronald R. Schroeder, Peng G. Wang, Charles H. Winter

Assistant Professors

Christine Chow, Theodore Goodson III, Gang-Yu Liu, Maarten H. D. Postema, Mary T. Rogers, John SantaLucia, Mark R. Spaller, Regina Zibuck

Adjunct Professors

Robert D. Bach, Roscoe Carter III, Evelyn Goldfield, Kenneth V. Honn, Erhard W. Rothe, Dennis Schuetzle

Adjunct Assistant Professor

James Proscia

Graduate Degrees

MASTER OF ARTS with a major in Chemistry

MASTER OF SCIENCE with a major in Chemistry

DOCTOR OF PHILOSOPHY with a major in Chemistry and specializations in analytical chemistry, biological chemistry, inorganic chemistry, organic chemistry, and physical chemistry

General Requirements for Graduate Study

Every student entering the graduate program in chemistry will be required to take a series of entrance (proficiency) examinations covering the major disciplines of chemistry. These examinations, which cover standard undergraduate-level material, will be administered on announced dates in August, January, and May (prior to the start of each term). The examination in each area must be taken every time it is offered until a satisfactory level of proficiency is demonstrated in three of the five major fields.

Demonstration of proficiency in each area may be achieved:

- (a) by receiving a grade of 'pass' on the proficiency examination; or
- (b) by completing a 7000-level course in the area with a grade of 'A' or 'B'.

Full-time graduate students must establish proficiency in three areas within twelve months of commencing graduate study. Part-time graduate students must meet this requirement by the time they have completed twelve hours of graduate credit.

A final oral examination is required of all graduate degree candidates.

Scholarship: All course work to be accredited to graduate degrees must be completed in accordance with the regulations of the Gradu-

ate School and the College governing graduate scholarship and degrees; see pages 16-30, and 364-366, respectively.

Master of Science with a Major in Chemistry

This is a professional degree for those planning to enter the chemical profession.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16.

Admission may be granted to applicants who have completed one year of college physics, mathematics through calculus, and the equivalent of undergraduate semester credits in chemistry as follows: general chemistry (eight credits), organic chemistry (eight credits), physical chemistry (six credits), quantitative analysis (four credits), and advanced chemistry (three credits). Applicants specializing in biological chemistry may substitute advanced biology for advanced chemistry.

A minimum undergraduate honor point average of 2.75 in chemistry and cognate science is required. Students who do not meet the requirements may petition the departmental committee on graduate study for qualified admission. Admissions under this program may include special requirements specified on the basis of the student's previous experience and training.

Candidacy must be established by the time twelve credits have been earned. The applicant must file a copy of the *Plan of Work* with the Graduate Officer.

DEGREE REQUIREMENTS: Plan A only. (Chemistry courses below the 6000 level may not be applied toward this degree.)

1. Total of twenty-two credits in course work which must include:
 - (a) one credit in CHM 8850;
 - (b) two or three credits in seminar (CHM 8800, 8810, 8820, 8830, or 8840);
 - (c) one credit in CHM 6740;
 - (d) at least twelve credits in chemistry courses open to graduate chemistry students (excluding research, seminar, CHM 6720, CHM 6740, and CHM 8850) of which at least nine credits must be at the 7000 level;
 - (e) six credits in chemistry and/or cognate courses;
2. Eight credits in CHM 8999 involving independent thesis research under the direction of a faculty member in the Department.
3. Submission of a satisfactory research thesis.

Master of Arts with a Major in Chemistry

This degree is designed for those who wish advanced training in chemistry but intend to pursue careers in cognate fields, such as education or business.

Admission Requirements: see above, under the Master of Science degree.

DEGREE REQUIREMENTS: Plan C only. (Chemistry courses below the 6000 level may not be applied toward this degree.)

1. Total of thirty-two credits in course work which must include:
 - (a) one credit in CHM 8850;
 - (b) two or three credits in graduate seminar (CHM 8800, 8810, 8820, 8830, or 8840);
 - (c) one credit in CHM 6740;
 - (d) at least eighteen credits in chemistry courses open to graduate chemistry students (excluding research, seminar, CHM 6720, CHM 6740 and CHM 8850) of which at least nine credits must be at the 7000 level. Courses must be elected in at least four of the following fields: analytical, biological, inorganic, organic, and physical chemistry.

Doctor of Philosophy with a Major in Chemistry

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. All applications for admission to the doctoral program in chemistry and all adjustments in the program subsequent to admission must have the approval of the Graduate Officer of the Department of Chemistry.

A minimum undergraduate honor point average of 3.0 in chemistry and cognate science is required except by special permission of the Departmental Committee on Graduate Study. An applicant having a master's degree from another institution must show an honor point average of at least 3.0 ('B').

Transfer from the Master's Program to the Ph.D. Program: In order to transfer to the Ph.D. program, a student must accumulate a minimum of twelve credits in chemistry course work numbered 6040-8690 with an honor point average of at least 3.25. An applicant having a lower average must earn the master's degree with a superior academic record before acceptance as a doctoral applicant.

Candidacy: In order to become a candidate for the Ph.D. degree, an applicant must successfully complete both a written and oral qualifying examination. The written examination consists of a series of short cumulative examinations administered seven times per year, of which a student must obtain five passes within thirteen attempts, three of which must be in the major division. The oral examination includes the major field and covers minor and cognate fields as well. Any additional requirements set by the Graduate School or the department must be completed. Copies of such requirements may be obtained from the Chairperson of the Departmental Committee on Graduate Study.

DEGREE REQUIREMENTS: The Doctor of Philosophy degree requires ninety credits beyond the baccalaureate degree, thirty of which must be earned as dissertation credit, and including the following:

1. A total of twenty-seven credits in graduate course work, of which at least nine credits must be in chemistry courses at the 7000 level and not less than nine shall be taken outside the major division of specialization. The minor requirement may be satisfied in any one of the following ways:

- (a) *Outside Minor* may be satisfied by a minimum of nine credits in related fields outside chemistry (biology, mathematics, physics, chemical engineering, etc.) with appropriate courses at the 5000 level and above.

- (b) *Distributed Chemistry Minor* may be satisfied by any combination of 7000-level courses outside the major division (including 7000-level courses taken to satisfy proficiency requirements) or two 7000-level courses and one 8000-level course (with approval of the adviser).

- (c) *Concentrated Chemistry Minor* may be satisfied by nine credits in a single division outside the major division of which at least six credits must be at the 7000 level.

2. **Credit by Examination:** Well-prepared students may receive up to nine credits by passing the final examinations in 6000- or 7000-level courses. These may be in either the major or minor fields.

3. At least four credits of graduate seminar (CHM 8800, 8810, 8820, 8830, or 8840).

4. At least one credit in CHM 8850.

5. One credit in CHM 6740.

6. Thirty credits in CHM 9999 (Ph.D. research) involving independent research under the direction of a faculty member in the Department.

7. Satisfactory completion of a 'Pre-Oral' examination based on the student's doctoral research is required prior to the final writing of the dissertation and at least six weeks before the final public lecture-defense or before the student's departure from campus, whichever occurs first.

8. Submission of a satisfactory research dissertation.

Assistantships and Fellowships

General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 30 of this bulletin.

Graduate assistantships and fellowships are available for well-qualified students working toward the M.S. or Ph.D. degree. Requests for information should be addressed to the Graduate Admissions Officer, Department of Chemistry, 179 Chemistry Building.

GRADUATE COURSES (CHM)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509

5020 Intermediate Inorganic Chemistry II. Cr. 3

Prereq: CHM 3020 and 5420 or 5400 or 5440 or equiv. Transition metal chemistry. Coordination compounds and organometallics. Bonding theories and reactivity. Synthesis, purification, and characterization of inorganic compounds with an emphasis on transition metal compounds. (F)

5160 Instrumental Analytical Chemistry. Cr. 3

Prereq: CHM 2280, and 5400 or 5420 or 5440 or equiv.; PHY 2180 or equiv. Required of B.S. and ACS-approved B.A. majors. Application of modern instrumental methods to quantitative analysis. Methods that relate instrumental response to chemical concentrations or content. Calibration, data handling, and data evaluation. Emission, flame, infrared, Raman, fluorescence, and magnetic resonance spectroscopy. Mass spectrometry. Electrochemical methods. Chromatography. (W)

5400 Biological Physical Chemistry. Cr. 4

Prereq: CHM 2280 or equiv., MAT 2020 or equiv.; prereq. or coreq: MAT 2030, PHY 2170 or equiv. Presentation of physical chemistry topics: thermodynamics, solution equilibria, chemical kinetics, quantum chemistry, spectroscopy, statistical mechanics, transport processes, and structure with biological applications. (W)

5420 Physical Chemistry I. Cr. 3

Prereq: CHM 2280, MAT 2020, or equiv.; prereq. or coreq: MAT 2030, PHY 2170 or equiv. Only two credits applicable toward degree after CHM 5400. Chemical thermodynamics, phase equilibrium, solutions, surface chemistry, electrochemistry. (F,W)

5440 Physical Chemistry II. Cr. 4

Prereq: CHM 2280, MAT 2020 or equiv.; prereq. or coreq: MAT 2030, PHY 2170 or equiv. Only three credits applicable to degree after CHM 5400. Kinetic theory, empirical and theoretical kinetics, quantum theory, atomic and molecular structure, molecular spectroscopy, statistical mechanics. (F,W)

5510 Chemical Synthesis Laboratory. Cr. 2

Prereq: CHM 1420, or 2220 and 2230 or equiv. Advanced techniques for the synthesis, purification and characterization of organic compounds. Material fee as indicated in the Schedule of Classes. Breakage fee as indicated in the schedule of classes. (F)

5550 (WI) Physical Chemistry Laboratory. Cr. 2

Prereq. or coreq: CHM 5400 or 5420 or 5440 or equiv., and PHY 2180 or equiv. Principles of measurement. Fundamental investigations of thermodynamics. Fundamental spectroscopic and kinetic measurements. Material fee as indicated in the Schedule of Classes. (F,W)

5570 Instrumental Analytical Chemistry Laboratory. Cr. 2

Prereq. or coreq: CHM 5160 or equiv. Fundamentals of electronics and instrumentation. Principles and analytical applications of electrochemistry, chromatography, and spectrometry including UV-visible, IR, magnetic resonance, and mass spectrometry. Material fee as indicated in the Schedule of Classes. (W)

5600 Survey of Biochemistry. Cr. 3

Prereq: CHM 1420 or 2220 or equiv. Protein structure and its relationship to function. Principles of enzyme catalysis. Allosteric regulation of protein function and enzyme catalysis. Pathways of carbohydrate, fat, and protein metabolism in eukaryotic organisms. Introduction to mechanisms of energy coupling and photosynthesis. Information transfer in living systems. Molecular biology. (W)

5740 Topics in Chemistry for High School Chemistry Teachers. Cr. 1-6 (Max. 20)

Topics include: principles of chemistry; descriptive chemistry; inorganic, organic, analytical, physical chemistry; biochemistry. Topics to be announced in Schedule of Classes. (I)

5998 Honors Thesis Research in Chemistry. Cr. 2-4 (Max. 8)

Prereq: consent of chairperson. Open only to students in College Honors Program with junior standing in chemistry program; elect no later than first senior semester. Original investigation under direction of senior staff member. Submission of B.S. thesis or manuscript in publication format. Presentation of public lecture. (T)

5999 Senior Research in Chemistry. Cr. 2-4 (Max. 8)

Prereq: consent of chairperson. Open only to students with junior standing in chemistry program; must be elected no later than first senior semester. Original investigation under the direction of a senior staff member. Submission of B.S. thesis or manuscript in publication format. (T)

6040 Chemical Applications of Group Theory. (CHM 7040) Cr. 3

Prereq: CHM 5020 and 5440 or equiv. Symmetry in chemical systems, development and use of character tables. Application of group theory to structure, bonding, spectroscopy and reactions. (F)

6240 Organic Spectroscopy. (CHM 7240) Cr. 3

Prereq: CHM 1420 or 2220 or equiv. Application of IR, NMR, UV, and mass spectrometry to the identification of organic compounds. Emphasis on interpretation of spectra, especially NMR. Recommended for students intending to do graduate or industrial work in organic chemistry. (W)

6340 (PHC 6340) Chemical Basis of Pharmacology. (BIO 6840) Cr. 3

Prereq: CHM 1420 or 2220 and BIO 1510 or equiv. Mechanisms of action and metabolism of commonly-used drugs and toxic substances from the cellular level to whole biological systems. (Y)

6440 Computational Chemistry. (CHM 7440) Cr. 3

Prereq: CHM 5440 or equiv. Aspects of computational chemistry pertinent to effective use of molecular modeling techniques. Molecular mechanics, semi-empirical and ab initio calculations, molecular dynamics. Material fee as indicated in the Schedule of Classes. (W)

6600 Structure and Function of Biomolecules. (CHM 7600) Cr. 3

Prereq: CHM 1420 or 2220 or equiv. Introduction to the structure and function of macromolecules of biological importance. Emphasis

on bioenergetics, nucleic acid and protein structure and chemical reactivities, enzyme catalysis, enzyme kinetics, carbohydrate and lipid structure and function, and membrane structure. (F)

6610 Biological Chemistry Laboratory. Cr. 3

Prereq: CHM 6600 or equiv. Open only to chemistry majors. Basic experiments in isolation, purification, and analysis of biomolecules. Techniques currently used in molecular biology and recombinant DNA procedures stressed. (Y)

6620 Metabolism: Pathways and Regulation. (CHM 7620) Cr. 3

Prereq: CHM 6600 or equiv. Major metabolic pathways of carbohydrate, fatty acid, amino acid, and nucleotide synthesis and degradation. Pathways and mechanisms of energy generation. Hormonal and allosteric regulation of enzyme activity. Cannot be used to satisfy the graduate proficiency requirement in biochemistry. (F)

6640 Molecular Biology. (CHM 7640) Cr. 3

Prereq: CHM 6600 or equiv. Nucleic acid structure and function. Mechanism and control of replication, transcription, and translation. Mutation, genetic recombination, and recombinant DNA. Membranes and organelles. (W)

6740 Laboratory Safety. Cr. 1-2

Not for chemistry major credit. Offered for S and U grades only. Required for all graduate degrees in chemistry. Discussion and demonstration of safe laboratory practice. Use, storage and disposal of ordinary and hazardous substances; personal protection devices; regulations and codes. (F)

6750 Glassblowing. Cr. 1

Prereq: graduate standing or consent of instructor. Offered for S and U grades only. Introduction to the fundamentals of glassblowing as applied to the repair and fabrication of scientific equipment in the research laboratory. Material fee as indicated in the Schedule of Classes. (I)

6990 Directed Study. Cr. 1-4 (Max. 8)

Prereq: undergrad., consent of adviser; grad., consent of adviser and graduate officer. (T)

7010 Descriptive Inorganic Chemistry. Cr. 3

Prereq: CHM 5020 or equiv. Reactions and reactivity of inorganic compounds. Emphasizes mechanistic and synthetic approaches to transition metal, organometallic, main group chemistry. (F)

7020 Physical-Inorganic Chemistry. Cr. 3

Prereq: CHM 6040 or 7040 or equiv. Structure and properties of inorganic compounds. Ligand field theory; electronic, vibrational, and magnetic resonance spectroscopy. (I)

7040 (CHM 6040) Chemical Applications of Group Theory. Cr. 3

Prereq: CHM 5020 and 5440 or equiv. Symmetry in chemical systems, development and use of character tables. Application of group theory to structure, bonding, spectroscopy and reactions. (F)

7100 Theory of Analytical Chemistry. Cr. 3

Prereq: CHM 2280 and 2290 or equiv. Physicochemical principles applied to reaction equilibria and kinetics of analytical importance. Approaches to problem solving in complex systems, principally in the solution phase. (F)

7120 Electroanalytical Chemistry. Cr. 3

Prereq: consent of instructor. The theory and practice of modern voltammetric methods as applied to analytical, kinetic, and mechanistic studies. (B)

7142 Data Analysis. Cr. 3

Prereq: CHM 2280 and 2290, or equiv. Application of statistics, chemometrics, and experimental design to the interpretation of chemical measurements; validation of analytical methods; practice and theory of sampling for chemical measurements. (B:F)

7160 Separation Science. Cr. 3

Theory and practice of gas-liquid, supercritical fluid, and thin-layer chromatography and capillary electromigration methods. (B)

7180 Atomic Spectroscopy. Cr. 3

Prereq: CHM 5160 or equiv. Topics will include ICP, ICP-MS, AA, LIBX, MIPS, etc. Instrumentation concepts. Review of contemporary literature. (W)

7200 Organic Structures and Mechanisms. Cr. 3

Prereq: one year of organic chemistry with laboratory. Structure and stereochemistry of organic molecules. Correlations between structure and chemical and physical properties. Reaction mechanisms. (F)

7220 Organic Reactions and Synthesis. Cr. 3

Prereq: CHM 7200. Alkylation, condensation, and Grignard reactions; synthesis of acid derivatives; cycloadditions and unimolecular rearrangements. Scope and limitations of important synthetic methods of organic chemistry. (W)

7240 (CHM 6240) Organic Spectroscopy. Cr. 3

Prereq: one year of organic chemistry with laboratory. Application of IR, NMR, UV, and mass spectrometry to the identification of organic compounds. Emphasis on interpretation of spectra, especially NMR. Recommended for students intending to do graduate or industrial work in organic chemistry. (W)

7410 Statistical Thermodynamics. Cr. 3

Prereq: CHM 5440 or equiv. Statistical methods of determining thermodynamic properties of bulk materials from molecular properties. Real gases at high density, crystals, liquids; phase transitions, transport properties. (B)

7430 Chemical Kinetics. Cr. 3

Prereq: CHM 5440 or equiv. Empirical analysis of reaction rates, theories of chemical kinetics, gas phase reactions, molecular collisions and non-thermal reactions, and kinetics in liquids. (B)

7440 (CHM 6440) Computational Chemistry. Cr. 3

Prereq: CHM 5440 or equiv. Aspects of computational chemistry pertinent to effective use of molecular modeling techniques. Molecular mechanics, semi-empirical and ab initio calculations, molecular dynamics. Material fee as indicated in the Schedule of Classes. (W)

7470 Quantum Chemistry. Cr. 3

Prereq: CHM 5440 or equiv. Theorems of quantum mechanics, approximation methods, solutions to simple atomic and molecular systems, electronic structure of many-electron atoms and molecules, chemical bonding. (B)

7480 Molecular Spectroscopy. Cr. 3

Prereq: CHM 7470 or equiv. Theory of interaction of molecules with electromagnetic fields. Rotational, vibrational, and electronic spectra of molecules; elements of lasers, multiphoton spectroscopy. (B)

7500 Modern Methods in Experimental Chemistry. Cr. 3

Prereq: CHM 5440 or equiv. Survey of modern methods for performing experiments in chemistry, including: laser techniques, high vacuum methods, time-resolved techniques, surface characterization, electronics and optics, and computer interfacing. (B)

7600 (CHM 6600) Structure and Function of Biomolecules. Cr. 3

Prereq: CHM 1420 or 2220 or equiv. Introduction to the structure and function of macromolecules of biological importance. Emphasis on bioenergetics, nucleic acid and protein structure and chemical reactivities, enzyme catalysis, enzyme kinetics, carbohydrate and lipid structure and function, and membrane structure. (F)

7620 (CHM 6620) Metabolism: Pathways and Regulation. Cr. 3

Prereq: CHM 7600 or equiv. Major metabolic pathways of carbohydrate, fatty acid, amino acid, and nucleotide synthesis and degradation. Pathways and mechanisms of energy generation. Hormonal and allosteric regulation of enzyme activity. Cannot be used to satisfy the graduate proficiency requirement in biochemistry except for those students who receive a conditional pass on Biochemistry Proficiency Examination. (F)

7640 (CHM 6640) Molecular Biology. Cr. 3

Prereq: CHM 7600 or equiv. Nucleic acid structure and function. Mechanism and control of replication, transcription, and translation. Mutation, genetic recombination, recombinant DNA. Membranes and organelles. (W)

7660 Biomolecular Interaction. Cr. 3

Prereq: CHM 1420 or 2220 or equiv. The role of molecular interactions in determining the structure and reactivity of complex biological molecules. Experimental approaches for evaluating the nature of these interactions. (F)

7990 Directed Study. Cr. 1-4 (Max. 12)

Prereq: consent of adviser and graduate officer. (I)

8010 Chemical Catalysis. Cr. 3

Survey of basic principles of homogeneous and heterogeneous chemical catalysis. (I)

8090 Advanced Topics in Inorganic Chemistry. Cr. 1-3 (Max. 12)

Prereq: graduate standing. Topics offered in different semesters: inorganic synthesis and reactions; organometallic chemistry; bioinorganic chemistry; spectroscopy and stereochemistry of inorganic compounds; inorganic reaction mechanisms; photochemistry. (I)

8190 Advanced Topics in Analytical Chemistry. Cr. 1-3 (Max. 12)

Prereq: CHM 7100 or equiv. The following topics offered in different semesters: sample preparation, surface analysis, analytical mechanisms, advanced instrumentation, computer interfacing. (I)

8290 Advanced Topics in Organic Chemistry. Cr. 1-3 (Max. 12)

Prereq: CHM 7200 or equiv. The following topics offered in different semesters: physical-organic chemistry; kinetics of organic reactions; structure-reactivity correlations; reaction mechanisms; molecular orbital theory in organic chemistry; photochemistry; free radical chemistry; polymer chemistry; recent developments in organic chemistry; synthetic strategy; chemistry of natural products including steroids, terpenes, alkaloids, carbohydrates, and proteins. (I)

8420 X-Ray Crystallography. Cr. 3

Prereq: CHM 7010 or 7240 or equiv.; 6040 recommended. Theoretical and practical aspects of modern x-ray crystallography. Training and practice in determination of crystal structure. (I)

8490 Advanced Topics in Physical Chemistry. Cr. 1-3 (Max. 12)

Prereq: CHM 7410 or equiv. The following topics offered in different semesters: chemistry of the solid state; electron spin resonance; lasers and nonlinear spectroscopy; molecular dynamics; molecular quantum mechanics; particle and photon scattering; photophysics and photochemistry; radiation and nuclear chemistry; theory of gas phase kinetics. (I)

8690 Advanced Topics in Biochemistry. Cr. 1-3 (Max. 12)

Prereq: CHM 7620 or equiv. Topics offered in different semesters: applications of spectroscopy to biochemical systems; chemical carcinogenesis; DNA repair; enzyme chemistry; experimental methods in molecular biology; hormone biochemistry; mechanisms of oxygen metabolism; membrane chemistry. (I)

8700 Research in Chemistry. Cr. 1-16 (Max. 30)

Prereq: consent of adviser. Offered for S and U grades only. (T)

8800 Seminar in Analytical Chemistry. Cr. 1 (Max. 4, M.S.; max. 6, Ph.D.)

Prereq: graduate standing. Offered for S and U grades only. Required of all graduate students in analytical chemistry. Weekly meetings of staff, invited guests, and qualified students to study recent developments. Each seminar member presents papers and enters into the discussion that follows. (F,W)

8810 Seminar in Organic Chemistry. Cr. 1 (Max. 4, M.S.; max. 6, Ph.D.)

Prereq: graduate standing. Offered for S and U grades only. Required of all graduate students in organic chemistry. Weekly meetings of staff, invited guests, and qualified students to study recent developments. Each seminar member presents papers and enters into the discussion that follows. (F,W)

8820 Seminar in Inorganic Chemistry. Cr. 1 (Max. 4, M.S.; max. 6, Ph.D.)

Prereq: graduate standing. Offered for S and U grades only. Required of all graduate students in inorganic chemistry. Weekly meeting of staff, invited guests, and qualified students to study recent developments. Each seminar member presents papers and enters into the discussion that follows. (F,W)

8830 Seminar in Physical Chemistry. Cr. 1 (Max. 4, M.S.; max. 6, Ph.D.)

Prereq: graduate standing. Offered for S and U grades only. Required of all graduate students in physical chemistry. Weekly meetings of staff, invited guests, and qualified students to study recent developments. Each seminar member presents papers and enters into the discussion that follows. (F,W)

8840 Seminar in Biochemistry. Cr. 1 (Max. 4, M.S.; max. 6, Ph.D.)

Prereq: graduate standing. Offered for S and U grades only. Open only to chemistry graduate students. Required of all graduate students in biochemistry. Weekly meetings of staff, invited guests, and qualified students to study recent developments. Each seminar member presents papers and participates in discussions. (F,W)

8850 (CHM 4850) Frontiers in Chemistry. Cr. 1 (Max. 3, M.S.; max. 6, Ph.D.)

Prereq: graduate standing. Offered for S and U grades only. Fields of fundamental chemistry now under investigation, presented by invited specialists actively engaged in research. (F,W)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of adviser. (T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16 (30 req.)

Prereq: consent of doctoral adviser. Offered for S and U grades only. (T)



COMPUTER SCIENCE

Office: 431 State Hall; 577-2477

Acting Chairperson: William I. Grosky

Administrative Assistants: Judith Lechvar, Debra Mazur

Professors

Michael Conrad, Narendra Goel, William I. Grosky, Vaclav Rajlich, Ishwar Sethi

Associate Professors

Anthony Chronopoulos, Farshad Fotouhi, Robert G. Reynolds, Nai-Kuan Tsao, Seymour J. Wolfson

Assistant Professors

Sorin Draghici, Lucja Iwanska

Lecturer

Richard Weinand

Graduate Degrees and Post Bachelor Certificate

POST BACHELOR CERTIFICATE in Computer Science

MASTER OF ARTS with a major in Computer Science

MASTER OF SCIENCE with a major in Computer Science

MASTER OF SCIENCE in Electronics and Computer Control Systems— Interdisciplinary

DOCTOR OF PHILOSOPHY with a major in Computer Science

The Department of Computer Science offers instruction in the principles of design and use of computing and information systems. Underlying concepts are stressed which give students the flexibility to manage the ever-increasing complexity of this rapidly-changing field. The objective of the Department is to provide a learning environment which fosters the development of computer scientists possessing strong fundamental concepts. Students with widely varying backgrounds and goals will find plans of study and research designed to meet their needs.

Post Bachelor Certificate in Computer Science

The certificate program in computer science is designed for students who have obtained an undergraduate or graduate degree in another discipline from an accredited university, and who wish to acquire undergraduate-level competence in computer science skills. Students whose background includes courses which satisfy the College of Science Group Requirements will generally apply for a second bachelor's degree rather than the Certificate in Computer Science.

The Post Bachelor Certificate Program verifies completion of the technical courses required for the Bachelor of Arts with a major in Computer Science and provides the minimal course requirements for admission to the graduate program in this field at Wayne State University. Students planning to enter the graduate program in computer science are strongly advised to take as many additional mathematics and computer science courses as their programs will allow, to provide adequate background for graduate work.

Admission: Students who have received their undergraduate degree from Wayne State University should apply directly to the University Advising Center. Two copies of the student's transcript must be submitted to the University adviser.

Students who have received their undergraduate degrees from another institution must complete the application for Undergraduate Admission and request that official transcripts from the college or university granting their undergraduate degree be sent directly to the Office of Admissions.

CERTIFICATE REQUIREMENTS: Candidates for this certificate must achieve a level of competence in mathematics and computer science equivalent to completion of fifty-one credits as set forth in the following program. Prior preparation at the undergraduate level as evidenced in transcript notation or by demonstrable proficiency may be used to satisfy any of these requirements, except that twenty-three credits in computer science must be earned at Wayne State University. Current program requirements are as follows (students should consult an adviser for recent updates).

1. A bachelor's degree or its equivalent in some discipline other than computer science with an honor point average of at least 2.0 from an accredited institution.
2. Mathematics 2010, 2020 and 2210.
3. Introductory Computer Science courses 1100, 1500, and 2110.
4. Computer Science courses beyond the introductory level including:
 - (a) Computer Science 2200, 3200, 4100, 4110, 4420 and 4996.
 - (b) Nine additional credits in Computer Science courses numbered 3000 or above excluding CSC 4990 and CSC 4995.
 - (c) At least twenty-three credits in Computer Science (CSC) courses must be taken at Wayne State University.
 - (d) Note that CSC 4500 is required for admission to the graduate program.
 - (e) Minimum Computer Science honor point average of 2.5.
 - (f) A minimum grade of 'C' is required in CSC 1100, 1500 and 2110.

Master's Degree Programs Admission and Matriculation

The Department of Computer Science awards the degrees of Master of Arts and Master of Science with a major in computer science. The degrees are distinguished on the basis of relative diversity and concentration of curricula. The Master of Arts degree program offers students experience in many areas of computer science. The Master of Science degree is granted to students who pursue a more concentrated cluster of topics leading to a master's thesis.

The great variety of subjects which are part of computer science, together with the immense diversity of their applications, makes it imperative that students in the master's program maintain close contact with their advisers to achieve a coherent plan of study directed toward a specific goal. In particular, elections of courses should be made with prior consultation and the approval of the student's adviser.

Admission to these programs is contingent upon admission to the Graduate School; for requirements, see page 16. In addition, applicants are expected to have attained a level of scholarship in the baccalaureate program equal to an honor point average of 3.0 or better, including adequate preparation in computer science and supporting courses in mathematics. Normally, the entering student will be expected to have fulfilled the equivalent of the requirements for the Bachelor of Science degree at Wayne State University and to satisfy any deficiencies by successfully completing necessary course work, before becoming a candidate for an advanced degree. The Graduate Record Examination (GRE) is required for admission to the Master of Science or Master of Arts program.

Also required for admission are three letters of recommendation from faculty members of accredited colleges or universities and a statement of approximately 300 words describing the applicant's academic and professional goals.

Students planning to pursue some of the more technical courses may find it necessary to have additional preparation in mathematics and/or computer science. The student should make a careful examination of the prerequisites for advanced courses in his/her areas of special interest before seeking admission. Prerequisite course work which is required as a condition of admission must be completed prior to electing graduate courses.

Upon admission, each student is assigned an adviser for guidance and direction in meeting degree requirements and academic goals. As the student's interests in computer science become more refined, a change in adviser may be appropriate; forms for this purpose are available from the Department Office. Such a change should be done before submitting the *Plan of Work*.

Candidacy: By the time twelve credits have been earned, a *Plan of Work* should be developed with the student's adviser and submitted to the Chairperson of the Computer Science Graduate Committee. In the *Plan of Work* the student indicates his/her choice of master's program Plans A or C (see below). Upon approval of the *Plan of Work* by the Graduate Committee and the Dean of the College of Science, the student is considered a degree candidate. The student is not permitted to take more than twelve credits in the master's program unless candidacy has been established. If the student has not graduated after two years as a candidate, the *Plan of Work* will be reviewed for possible adjustment.

Scholarship: Students must maintain a minimum overall 3.0 honor point average. Failure to do so for one semester places the student on academic probation. Failure to do so for two semesters will result in the student's dismissal from the graduate program. All course work must be completed in accordance with the regulations of the Graduate School and the College governing graduate scholarship and degrees; see pages 16-30 and 364-366, respectively. The above requirements are those in force as of the publication date of this bulletin; however, students should keep in mind that the degree requirements for any particular student are those in force at the time of his/her admission.

Areas of Concentration

COMPUTATIONAL SCIENCE and HIGH PERFORMANCE COMPUTING CONCENTRATION:

Computer Graphics, Numerical Methods, Parallel and Distributed Computing

INTELLIGENT SYSTEMS CONCENTRATION:

Artificial Intelligence, Computer Vision and Neural Networks, Modeling and Simulation, Natural Computing and Adaptability

SOFTWARE and INFORMATION SYSTEMS CONCENTRATION:

Databases, Multimedia Information Systems, Software Engineering

Master of Arts with a Major in Computer Science

Admission Requirements: see above.

DEGREE REQUIREMENTS: The Master of Arts in computer science is offered only under Plan C, which requires a minimum of thirty-one credits earned in course work and successful completion of a final written examination conducted by the Graduate Committee.

Course Requirements:

- 1) CSC 6500 and CSC 6580.
- 2) CSC 8990, Graduate Seminar (Cr. 1).
- 3) Student must declare a major area of specialization within a concentration (see list above) and complete at least three courses within the specialization, including at least one course at or above the 7000 level. (Note: CSC 7990 does not satisfy the 7000-level requirement.)
- 4) Another four courses from the concentrations listed above, including one course at or above the 6000 level and one at or above the 7000 level.
- 5) One elective course of at least three credits.
- 6) Student must successfully complete a final written examination which covers the core courses CSC 6500 and CSC 6580 and the declared area of specialization.

Master of Science with a Major in Computer Science

Admission Requirements: see above.

DEGREE REQUIREMENTS: The Master of Science degree is offered only as a Plan A option, which requires thirty-three credits and includes the completion of a thesis for eight credits. The master's thesis work is directed by the student's adviser together with a committee of two additional faculty members. All committee members must read and approve the thesis, after which time it must be presented at a public session prior to final acceptance. These are technical papers describing the original creative work of the author. Students should see page 27 and consult the Graduate School for specifics on the format and presentation of the thesis.

Course Requirements are the same as those cited above for the Master of Arts degree except for requirements number four and six which are as follows:

- 4) An additional two computer science courses, one of which must be at or above the 6000 level.
- 6) CSC 8999, Master's Thesis Research and Direction (eight credits).

Master of Science in Electronics and Computer Control Systems

The Department of Computer Science, in conjunction with the Departments of Mechanical Engineering and Electrical and Computer Engineering of the College of Engineering, offers an interdisciplinary master's degree program in electronics and computer control systems. The program addresses the need for retraining and upgrading the engineering work force in the area of computer-based technology. Completion of this program requires the election of courses in computer science, mechanical engineering, and electrical and computer engineering. For further information regarding curricular requirements, students should contact the Associate Dean of Engineering for Research and Graduate Studies; telephone: (313) 577-3861.

Doctor of Philosophy With a Major in Computer Science

The Doctor of Philosophy degree is conferred upon individuals who have demonstrated the ability to make original contributions to the knowledge of the field.

The Ph.D. program develops experts and professionals who will continue in academic work, industry or government. It encourages the attainment of excellence in research and scholarship necessary to catalyze the advancement of computer science. The fulfillment of doctoral requirements is monitored primarily by examinations and the presentation of the dissertation rather than by the summation of courses, grades and credits.

The doctoral program emphasizes research and the Department encourages prospective Ph.D. candidates to involve themselves in faculty projects at the earliest possible opportunity.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. The applicant should present a bachelor's or master's degree with a major in computer or other science. In addition, applicants are expected to have attained a level of scholarship equal to a 3.3 honor point average or better in the most recent degree from an accredited college or university, including adequate preparation in computer science and supporting courses in mathematics. Normally, the entering student will be expected to have fulfilled the equivalent requirements for the Bachelor of Science in Computer Science and to satisfy any deficiencies by successfully completing the course work, before becoming a candidate for the advanced degree.

Applicants must take the Graduate Record Examination, both the Aptitude portion and the Advanced Test in any science or engineering discipline, and be accepted by the Department of Computer Science Graduate Admissions Committee. Three letters of recommendation from faculty members of accredited colleges or uni-

versities must be submitted, along with a statement of approximately 300 words describing the applicant's goals and career objectives.

DEGREE REQUIREMENTS: The Doctor of Philosophy degree requires ninety credits beyond the baccalaureate degree, thirty of which must be earned as dissertation credit. All course work must be completed in accordance with the academic procedures of the College and the Graduate School governing graduate scholarship and degrees; see pages 364-366 and 16-30, respectively.

The computer science doctoral program is designed to be flexible, in order to meet the individual student's interests and to reflect the dynamic nature of the field. It is comprised of six major stages:

1. Program Selection: The first stage is devoted primarily to course work and production of a *Plan of Work* in consultation with the adviser. The approved *Plan of Work* must designate primary and secondary fields of interest. The student is encouraged to define his/her own primary and secondary fields of interest by forming a cohesive grouping of available graduate courses. The *Plan of Work* must include at least thirty credits in CSC course work at or above the 7000 level. Twenty-one of these credits must be in course work other than directed study CSC 7990. Both CSC 6500 and CSC 6580 must be elected.

2. Proficiency Examination: During this stage, the student will take the Proficiency Examination which is intended to evaluate the preparation of the Ph.D. student. The student must have passed the examination by the end of the fourth academic semester (for this accrual only Fall and Winter terms are regarded as academic semesters), and may take it no more than twice. Failure to satisfy this requirement will result in the student's withdrawal from the Ph.D. program. The Proficiency Examination Guide is available in the Department upon request. Meanwhile, the student continues the course work outlined in the *Plan of Work* and begins the search for a dissertation topic.

3. Doctoral Committee Formation: With the approval of the Department Graduate Committee, the student establishes a Doctoral committee which is composed of at least three faculty members from the Department and one faculty member from any other field that is relevant to the topic of the research. This Committee is responsible for directing the oral examination and dissertation of the candidate.

4. Qualifying Examination: The Qualifying Examination consists of two parts; the first part is written, and the second part oral. A student may begin the written examination any time after formation of a doctoral committee and must pass both parts of the examination by the end of the sixth semester in the Ph.D. program.

The student must take the oral examination within thirty days after certification of passing the written examination. Both examinations will cover the student's primary and secondary fields of study as specified in the student's *Plan of Work*, and may include other related areas which are relevant to the student's research. The written part of the Qualifying Examination will be administered by the student's Doctoral Committee. The oral part of the Qualifying Examination will be administered by the student's Doctoral Committee along with a representative from the Department Graduate Committee and a graduate examiner approved by the Graduate School.

If the examining committee does not certify that the student has passed either the written or the oral qualifying examination, it must make specific recommendations with reference to admitting the student to a second examination and specify any additional work that must be completed prior to such examination. If a second examination is held, it must be scheduled within one calendar year from the failed examination and shall be considered final.

5. Prospectus and Candidacy: With the major component of the course work completed, the student will finalize the selection of a dissertation topic by the development of the Prospectus. The Prospectus describes the proposed research in some detail; it states the problem, its scope, the types of sources and resources required, the methodology to be used, prior research results, and a description of the hypothetical results expected from the research. The Prospectus must then be presented to and approved by the student's Doctoral Committee. The Prospectus is to be successfully completed by the end of the third academic year of the Ph.D. program. The Prospec-

tus, along with the Doctoral Dissertation Outline and Record of Approval, is then submitted to the Graduate School.

6. Dissertation: The final stage is devoted primarily to research and preparation of the dissertation. The dissertation research is presented and defended before the Doctoral Committee in a public lecture presentation.

Assistantships and Fellowships

General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 30 of this bulletin.

The number and nature of assistantships vary each academic year. Graduate teaching or research assistantships and fellowships are available each year to qualified students. Those interested should submit application materials to the Department of Computer Science by February 15 for the fall term, and by October 15 for the winter term of the preceding academic years. Late applications will be considered only on the basis of available positions.

Research and Instructional Laboratories

The Department of Computer Science operates three instructional and seven research laboratories comprising approximately 150 workstations.

Research Laboratories: The research labs maintained by the Department consist of the following:

- Artificial Intelligence Laboratory
- Biocomputing Laboratory
- Computer Graphics and Animation Laboratory
- Multimedia Information Systems Laboratory
- Parallel and Distributed Computing Laboratory
- Software Engineering Laboratory
- Vision and Neural Networks Laboratory

Instructional Laboratories: There are three labs devoted to instruction. Two of them are equipped with 32 Pentium workstations running Windows NT and one is equipped with a mixture of 34 SUN SPARC stations running Solaris and 6 Pentium workstations running Linux. One of the Windows NT labs is dedicated to instructor-led classes; the other two labs are available for use by students for self-guided instructional use.

Web Page: The Department maintains a home page at <http://www.cs.wayne.edu>

GRADUATE COURSES (CSC)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

5050 Algorithms and Data Structures. Cr. 4

Prereq: graduate standing. Not for major credit. Introduction to problem solving methods and algorithm development; data abstraction for structures such as stacks, queues, linked lists, trees, and graphs; searching and sorting algorithms and their analysis. (T)

5260 Computer Networks and Distributed Systems. Cr. 3

Prereq: CSC 4420. Introduction to the topic; data communications protocols; local area networks; distributed applications. (Y)

5680 Introduction to Modeling and Simulation. (I E 5180) Cr. 3

Prereq: CSC 2110 or 5050 and MAT 2210. Review of statistics; queuing analysis; categories of models; general purpose simulation languages; model validation; experimental design; output analysis. (I)

5710 Design of Intelligent Information Systems. Cr. 3

Prereq: CSC 4710, 5800. Object-oriented data modeling; intelligent office information systems; decision support systems; deductive databases; hypertext; specific applications in interfacing commercial databases and expert systems. (Y)

5750 Principles of Web Technology. Cr. 3

Prereq: CSC 3750 or senior or graduate standing. History and development of the world-wide web. Techniques for authoring static and dynamic content for the world-wide web. Web security techniques. Electronic commerce on the web. Lab exercises required. (F,W)

5800 Expert Systems: Tools and Languages. Cr. 3

Prereq: CSC 2200 or 5050. Survey of languages and tools for the development of expert systems applications. Introduction to functional, logical, and object-oriented programming and to various commercially available expert system environments; specific applications in areas of computer science, medicine, and engineering. (I)

5830 Computational Modeling of Complex Systems. Cr. 3

Prereq: knowledge of a programming language; MAT 2010. Introduction to computer methods useful for modeling complex systems which are refractory to traditional methods of analysis. Emphasis on problem formulation and concrete examples, especially examples drawn from biology. (I)

5860 Introduction to Pattern Recognition and Image Processing. Cr. 3

Prereq: senior standing. Model of a pattern recognition system; representation techniques for classifiers; parametric and nonparametric classification methods; clustering; fundamentals of image formation and acquisition; image enhancement methods; feature extraction for two-dimensional visual pattern recognition; document image processing and recognition. (Y)

5870 Computer Graphics I. Cr. 3

Prereq: CSC 2200 or 5050, MAT 2250. Graphics devices, graphics primitives, 2-D transformations, windowing and clipping, modeling 3-D objects, 3-D viewing transformations, hidden surface removal, shading and color. (I)

5880 Principles of Natural Computing. Cr. 3

Prereq: senior or graduate standing. Introduction to basic principles of information processing in biological systems; similarities and differences between biological systems and computing machines; implication of biological information processing principles and mechanisms for artificial intelligence. (B)

5991 Special Topics in Computer Science. Cr. 1-4 (Max. 8)

Prereq: senior or graduate standing. Topics to be announced in Schedule of Classes. (I)

6110 Software Engineering. Cr. 3

Prereq: CSC 2200 or 5050. Software process models; advanced software system design; software project management; software analysis; testing and performance analysis; software maintenance; reverse engineering; software reuse; software metrics; object-oriented development. (Y)

6140 Knowledge-Based Software Engineering. Cr. 3

Prereq: CSC 4110 or 6110. Domain modeling and object-oriented analysis; formal requirements specification languages; construction

of programs from formal specifications and correctness proofs; rapid prototyping; transformational approaches to program development; acquisition of software engineering knowledge; program comprehension; knowledge-based approaches to software maintenance and reuse; computer-supported cooperative work. (Y)

6170 Structure of Compilers I. Cr. 3

Prereq: CSC 4500 and 3200. Lexical analysis; syntactic analysis; error detection; translation into intermediate code; storage allocation; optimization techniques. (I)

6220 Parallel Computing I. Cr. 3

Prereq: CSC 2200, 4100. Parallel computing concepts, examples of parallel computers, parallelism in algorithms/data/programs, experiences with state of the art parallel computers. (Y)

6260 Distributed Systems I. Cr. 3

Prereq: CSC 4420. Introduction to distributed systems; distributed systems architecture and design goals; interprocess communication and synchronization; concurrent programming with threads; client-server programming (with Berkeley sockets); distributed applications development using remote procedure calls. (Y)

6280 Advanced Operating Systems. (ECE 5640) Cr. 4

Prereq: CSC 4420 or graduate standing. Design issues in advanced operating systems; distributed real-time operating systems; discussion of case studies such as UNIX, MACH, and AMOEBA. (I)

6500 Theory of Languages and Automata. Cr. 3

Prereq: graduate standing. Finite-state, context-free, context-sensitive, recursive, and r.e. languages; Chomsky hierarchy; grammars and automata; decidability and computability; Rice's theorem; basic complexity theory. (Y)

6580 Design and Analysis of Algorithms. Cr. 3

Prereq: CSC 2200. Best case, worst case, and expected case complexity analysis; asymptotic approximations; solutions of recurrence equations; probabilistic techniques; divide-and-conquer; the greedy approach; dynamic programming; branch and bound; NP-completeness; parallel algorithms. (Y)

6620 Matrix Computation I. (ECE 5020) Cr. 4

Prereq: CSC 2110, 2060, or equiv.; and MAT 2250 for computer science students, CHE 3040 for engineering students. Background matrix algebra; linear system sensitivity; basic transformations; Gaussian elimination; symmetric systems; positive definite systems; Householder method for least squares problems; unsymmetric eigenvalue problems; the QR algorithm. (B)

6710 Database Management Systems I. Cr. 3

Prereq: CSC 2200 or 5050. Data models; entity-relationship, relational, object-oriented; query languages; relational database design; physical data organization; query processing. (Y)

6800 Artificial Intelligence I. Cr. 3

Prereq: CSC 5800 or 3200. Basic concepts; topics include: recursive problem solving, knowledge representation using semantic networks and frames, state space search methods, planning and problem solving, game playing and adversarial search methods, rules and production systems (RETE networks), constraint satisfaction techniques and applications, optimization algorithms including genetic algorithms, logic programming. Implementation in Lisp and Prolog. (Y)

6830 Computational Modeling Laboratory. Cr. 3

CSC 5830 or consent of instructor. Practical experience in the implementation and documentation of computer models. (I)

6860 Digital Image Processing and Analysis. Cr. 3

Prereq: graduate standing. Review of image formation and acquisition; image transformation; image enhancement and restoration; image compression; morphological image processing; edge detection and segmentation; architecture for image processing. (I)

6870 Computer Graphics II. Cr. 3

Prereq: CSC 5870. Representing curves and surfaces; solid modeling; fractal geometry; camera models; illumination models; ray trac-

ing; radiosity methods; transparency; texture; graphics packages. Material fee as indicated in the Schedule of Classes. (I)

6880 Theory of Adaptable Systems. Cr. 3

Prereq: senior or graduate standing. Formalism of adaptability theory; organization of biological and technical information processing systems in the light of adaptability theory; applications to biological computing and evolutionary programming (I)

6991 Topics in Computer Science. Cr. 1-4 (Max. 8)

Prereq: senior or graduate standing. Current topics to be announced in Schedule of Classes. (I)

7110 Software Engineering Environments. Cr. 3

Prereq: CSC 6110. Architecture of software engineering environments; syntax directed editors; CASE tools; tools for software maintenance; expert systems for software maintenance. (Y)

7220 Parallel Computing II. Cr. 3

Prereq: CSC 6220 or equiv. Models of parallel computation, concurrency in algorithms/programs, parallel software, parallel implementation on state of the art systems. (Y)

7260 Distributed Systems II. Cr. 3

Prereq: CSC 6260. Design issues of distributed systems, distributed synchronization and resource allocation algorithms, distributed file systems, transactions in a distributed system, distributed object management. (B)

7500 Advanced Theory of Languages and Automata. Cr. 3

Prereq: CSC 6500. Advanced study of grammars and automata; theories of semantics; computational complexity. (B)

7620 Matrix Computation II. Cr. 3

Prereq: CSC 6620. Special linear systems; Givens and fast Givens methods for least squares problems; symmetric eigenvalue problems; singular value decomposition; Lanczos methods; iterative methods for linear systems; functions of matrices. (B)

7710 Database Management Systems II. Cr. 3

Prereq: CSC 6710. Concurrency control, transaction processing, crash recovery, distributed databases, heterogeneous databases. (Y)

7800 Artificial Intelligence II. Cr. 3

Prereq: CSC 6800. Advanced topics from these areas: machine learning techniques (inductive and deductive), neural networks and perceptrons, genetic algorithms, advanced concepts in knowledge-based system design, inexact inference, constraint satisfaction techniques and applications, object-oriented programming. Implementation in Lisp and Prolog. (Y)

7850 Artificial Neural Networks. Cr. 3

Prereq: graduate standing. Introduction to computational characteristics of the brain, single layer neural nets, multilayer nets, learning and self-organization, adaptive and associative neural processing, current implementations and applications. (I)

7860 Computer Vision. Cr. 3

Prereq: CSC 6860. Low-level vision processing, use of constraints in visual processing, three-dimensional object recognition, dynamic scene analysis, model-based vision systems, use of neural and fuzzy logic methods in vision. (Y)

7870 Advanced Topics in Computer Graphics. Cr. 3

Prereq: CSC 6870. Advanced modeling techniques; object hierarchy; interaction techniques; visual realism; visualization of scientific data; animation; graphics processor architecture. (B)

7880 Advanced Topics in Natural Computing. Cr. 3

Prereq: CSC 5880 or consent of instructor. Molecular and neuromolecular computer design, review of implementation technologies, domain applicability of different modes of computing, brain models. (B)

7990 Directed Study. Cr. 1-5 (Max. 16)

Prereq: written consent of adviser prior to registration. (T)

7991 Advanced Topics in Computer Science. Cr. 1-4 (Max. 8)

Prereq: graduate standing. Topics to be announced in Schedule of Classes. (B)

8110 Seminar in Software Engineering and Environments. Cr. 3 (Max. 6, M.S.; max. 12, Ph.D.)

Prereq: CSC 7110. Discussion of current papers in the field. (B)

8220 Seminar in Parallel Computing. Cr. 3 (Max. 6, M.S.; max. 12, Ph.D.)

Prereq: CSC 7220 or equiv. Special topics. (B)

8260 Seminar in Distributed Systems. Cr. 3 (Max. 6, M.S.; max. 12, Ph.D.)

Prereq: CSC 7260. Discussion of current research in the field. (B)

8500 Seminar in Theoretical Computer Science. Cr. 3 (Max. 6, M.S.; max. 12, Ph.D.)

Prereq: CSC 7500. Discussion of current research in the field. (B)

8710 Seminar in Database Management Systems. Cr. 3 (Max. 6, M.S.; max. 12, Ph.D.)

Prereq: CSC 7710. Discussion of current papers in the field. (B)

8800 Seminar in Artificial Intelligence. Cr. 3 (Max. 6, M.S.; max. 12, Ph.D.)

Prereq: CSC 7800. Current research topics in the area. (B)

8860 Seminar Topics in Computer Vision and Pattern Recognition. Cr. 3 (Max. 6, M.S.; max. 12, Ph.D.)

Prereq: CSC 7860. Discussion of current papers in the field; student reports. (B)

8870 Seminar Topics in Computer Graphics. Cr. 3 (Max. 6, M.S.; max. 12, Ph.D.)

Prereq: CSC 6870. Discussion of current research in this field. (B)

8880 Seminar in Natural Computing and Adaptability Theory. Cr. 3 (Max. 6, M.S.; max. 12, Ph.D.)

Prereq: CSC 6880 or 7880 or consent of instructor. Discussion of current research in the field. (B)

8990 Graduate Seminar. Cr. 1

Prereq: graduate standing. Offered for S and U grades only. Required of all master's students; to be taken in last semester of study. Discussion of current research by faculty and visitors. (Y)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: written consent of adviser prior to registration. (T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16 (30 req.)

Prereq: written consent of adviser prior to registration. Offered for S and U grades only. (T)

GEOLOGY

Office: 0224.1 Old Main; 577-2506

Chairperson: Robert B. Furlong

Professors

Robert B. Furlong, Hugo Mandelbaum (Emeritus), Willard H. Parsons (Emeritus), Luciano B. Ronca (Emeritus)

Associate Professor

Jeffrey L. Howard

Visiting Professor

Frederick E. Simms

Master of Science in Geology

The Master of Science in Geology consists of advanced studies which are designed to prepare the student to assume a position of responsibility as a professional geologist; or to enter a program leading to the doctor of philosophy in geology or a related discipline at another university. The Master of Science in Geology offers a program with emphasis on environmental and urban geology in keeping with the urban setting of Wayne State University. This program is designed to prepare the student to assume a position of responsibility as a professional geologist with special training in the environmental aspects of this discipline. Students receiving the degree of Master of Science in Geology will be especially prepared to work in a capacity which deals with or provides solutions to environmental problems in which an intimate relationship between the environment and earth science is an important factor.

The master's degree program involves the rigorous, in-depth study of major concepts pertaining to the earth, and the techniques used to study them. Entrance into the program assumes a firm foundation in the basic and elemental concepts of geology.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Additionally, candidates are required to have an undergraduate major in geology, or a strong background in geology supported by courses in related sciences, and with an honor point average of at least 3.0 in the major. Prerequisite study should include mineralogy, petrology, sedimentation, geomorphology, and structural geology, plus a course in any two of the following fields: paleontology, geophysics, geological site assessment, and geophysics. Six or more credits in field geology or the equivalent is also required. Two semesters of calculus, a year of chemistry and a year of physics are also necessary. A reading knowledge of French, German or Russian is strongly recommended but not required. Deficiencies in prerequisites may be made up concurrently with graduate work.

The verbal, quantitative and advanced parts of the Graduate Record Examination are required for admission to the graduate program, and the applicant must file three personal letters of recommendation before acceptance.

Students transferring from other fields should make an appointment with the Graduate Officer or the Department Chairperson who will review the applicant's background and make recommendations regarding the graduate program.

DEGREE REQUIREMENTS: The master's degree is offered by this department only under the following option:

Plan A: *Thirty-two credits including an eight credit thesis.*

Students must complete twenty-four credits in graduate course work including the following required courses: GEL 5000, 5120, 5150, 5300, and 5450. The additional five credits in required course work may be selected from other graduate courses in geology, or from graduate courses in chemical and/or civil engineering, or graduate courses in chemistry or physics. Graduate courses in disciplines other than geology require the approval of the thesis adviser and the graduate committee. Eight credits in thesis (GEL 8999) are also

required. All course work must be completed in accordance with the academic procedures of the College of Science and the Graduate School governing graduate scholarship and degrees; see pages 364-366 and 16-30, respectively.

The graduate program may be modified by the Geology Department to conform to the needs of individual candidates. The eight thesis credits must be in geology, but the thesis credits will not be counted as constituting part of the nineteen credits in Geology course work.

Candidacy for the Masters degree is established by submitting an acceptable *Plan of Work* to the Graduate Officer of the College of Science. This plan must be submitted and approved by the College by the time twelve graduate credits have been earned. Once candidacy is established, the student, in consultation with his/her adviser and the Geology Department graduate officer, will select the thesis committee. The committee will be comprised of a minimum of three members of the graduate faculty with the student's adviser serving as one member and committee chairperson. Two of the three members of the committee (including the adviser) must be from the Department of Geology. The third member may be from another department if this third member will be making a significant contribution to the applicant's course work and/or thesis study.

Cognate Requirements: Although there are no cognate courses required for the Master of Science degree, geology majors should consult their adviser regarding cognate courses which will be of value to their particular program. Depending on interests and future goals, courses in mathematics, physics, chemistry, and computer science, and especially those in chemical and civil engineering will be of particular value.

Assistantships

General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 30 of this bulletin.

Graduate Assistantships: A limited number of graduate teaching assistantships may be available for academically superior students. Their availability can be ascertained by writing to the Geology Department graduate office.

GRADUATE COURSES (GEL)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

5000 Geological Site Assessment. Cr. 4

Prereq: GEL 1010; 1000 recommended. Classification of landforms and analysis of surficial geologic processes. Geophysical methods for subsurface analysis of soil and groundwater pollution. Application of remote sensing techniques in resource management. (Y)

5120 Environmental Geochemistry. Cr. 4

Prereq: GEL 1010 and two semesters of college chemistry or equivalent. Survey of some of the geochemical interactions which take place in Earth environments (water, soils, atmosphere, etc.) brought about by natural and human-induced chemical processes. Material fee as indicated in the Schedule of Classes. (W)

5150 Soils and Soil Pollution. Cr. 4

Prereq: GEL 1010, CHM 1220 and 1230, CHM 2280 and 2290, or written consent of instructor. Physical, chemical and mineralogical properties and classification of soils. Behavior of pollutants in soils and methods for reclamation. (Y)

5300 Statistical and Computer Methods in Environmental Geology. Cr. 4

Prereq: consent of instructor. Student computer account required. Principles of statistics, probability and computer programming; application to the geological sciences; sampling procedures, population, confidence limits, regressions, correlations and time series, practical applications to geological problems. (B)

5450 Hydrogeology. Cr. 4

Prereq: GEL 1010; or written consent of instructor. Characteristics and behavior of groundwater in earth materials. Groundwater geology of southeastern Michigan. Water well technology and methods for exploration. (Y)

7990 Directed Study in Geology. Cr. 2-8 (Max. 8)

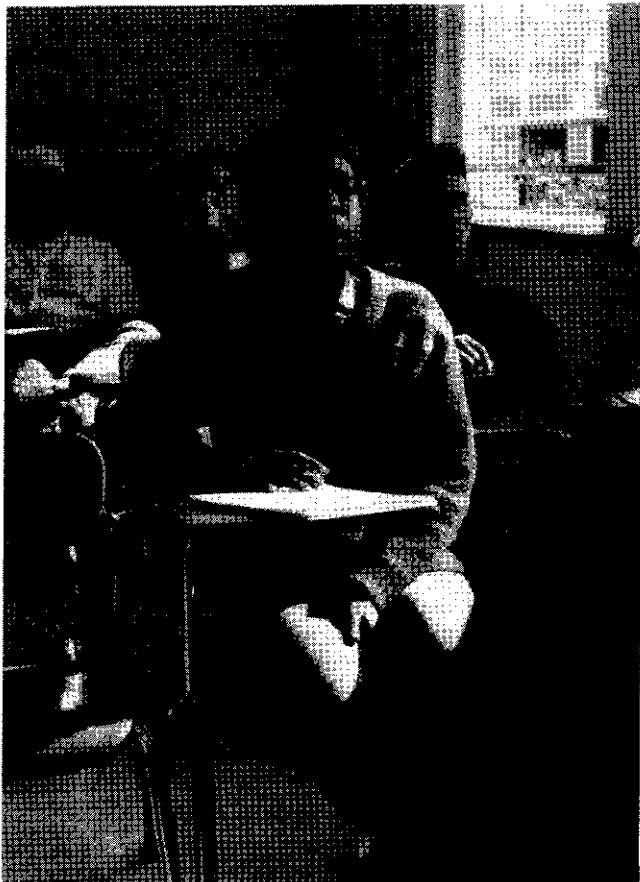
Prereq: consent of instructor, adviser, and graduate officer. (T)

7997 Research in Geology. Cr. 3-4 (Max. 8)

Prereq: consent of instructor and adviser. Independent work in laboratory or field. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of adviser. (T)



LINGUISTICS

Office: Room 4025, 51 West Warren; 577-8642

Director: Ellen Barton

Participating Faculty

Ellen Barton, *Associate Professor, English*
Eugenia Cassielles-Suarez, *Assistant Professor, Romance Languages and Literatures*
Walter Edwards, *Professor, English*
Joel Itzkowitz, *Associate Professor, Greek and Latin*
Alexis Manaster-Ramer, *Professor, Computer Science*
T. Michael McKinsey, *Professor, Philosophy*
Bruce Morgan, *Assistant Professor, English*
Ljiljana Progovac, *Associate Professor, English*
Martha Ratliff, *Associate Professor, English*
Aleya Rouchdy, *Professor, Near Eastern and Asian Studies*
Patricia Siple, *Associate Professor, Psychology*
Rebecca Treiman, *Professor, Psychology*
Frances Trix, *Associate Professor, Anthropology*

Graduate Degree

MASTER OF ARTS in Linguistics

Linguistics is devoted to the scientific study of language structure and use. The Linguistics Program at Wayne State offers an interdisciplinary approach to this field, permitting students to explore a wide range of topics and issues in language research. The program offers courses from the major areas of the field, including (a) the structural aspects of sentences (syntax), words (morphology), and speech sounds (phonology), (b) the historical development of language, (c) the semantic and pragmatic basis of language interpretation in sentences and discourses, (d) language variation and use in social contexts (sociolinguistics), (e) the processing and acquisition of language (psycholinguistics), and (f) the application of language to other areas of human knowledge.

Training in linguistics prepares students for advanced work in linguistic research, as well as for employment in teaching English and foreign languages; computer programming (especially in natural language processing); civil service and diplomatic work; broadcasting, mass media and public relations; and generally any profession requiring the precise use or analysis of speech or writing. The Linguistics Program is administered by a director and an advisory committee of participating faculty who regularly teach courses for the Program.

Master of Arts in Linguistics

Admission Requirements: Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. In addition, applicants to the linguistics program must have taken at least one year of a foreign language.

Candidacy must be established by the time twelve credits have been earned.

DEGREE REQUIREMENTS: The master's degree is offered by the College of Science as a Plan B master's option: thirty credits in course work plus a three-credit essay. All course work must be completed in accordance with the regulations of the Graduate School and the College governing graduate scholarship and degrees; see pages 16-30 and 364-366, respectively.

The student is required to complete a basic core of general linguistics courses and then to concentrate on a particular area of linguistics, for example, linguistic structure, ethnolinguistics, psycholinguistics, sociolinguistics, or the study of a particular language. Programs are to be planned in consultation with an adviser and are to be approved by the Linguistics Committee. A master's essay is required.

The following courses must be taken if the student has not completed them as an undergraduate:

Credits

LIN 5700 — Introduction to Linguistic Theory.....	3
LIN 5290 — Phonology.....	3
LIN 5300 — Theory of Syntax.....	3

In addition, nine credits must be elected from the following:

LIN 5310 — Language and Culture.....	3
LIN 5570 — Philosophy of Language.....	4
LIN 5720 — Topics in Language.....	3 (Max. 12 Cr.)
LIN 5770 — Sociolinguistics.....	3
LIN 6710 — Psycholinguistics.....	3
LIN 7710 — Advanced Studies in Linguistic Structure.....	4 (Max. 12 Cr.)
LIN 7720 — Advanced Studies in Language Use.....	4 (Max. 12 Cr.)
LIN 7770 — Discourse Analysis.....	4

The remaining courses should be elected from the following list of Courses of Instruction in a way that meets the interests of the student and forms a coherent program of study.

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5050 (PHI 5050) Advanced Symbolic Logic. Cr. 4

Prereq: junior, senior, or graduate standing. Formal, extensive treatment of first-order predicate logic with emphasis on the notions of a formal logical language and truth in a model; the logic of identity; definite descriptions; brief introductions to set theory and the metatheory of propositional and first-order logic; some additional advanced topics to be selected by the instructor. (Y)

5200 (PHI 5200) Modal Logic. Cr. 4

Prereq: PHI 1850 or PHI 1860 or consent of instructor. The logic of necessity, possibility, and other modal notions as they occur in epistemic and deontic contexts. (B)

5210 (ARB 5210) Arabic Sociolinguistics. Cr. 3

No knowledge of Arabic required. Arabic dialectology; Arabic as a minority language in contact. Theories and techniques developed outside Arabic, and their applicability to Arabic situations. (F)

5230 (ARB 5230) Structure of Arabic. Cr. 3

Prereq: ARB 2020 or consent of instructor. No knowledge of Arabic required. Survey of historical constitution and theoretical structure of Arabic. (Y)

5290 (ENG 5710) Phonology. Cr. 3

Prereq: LIN 5700. The sound systems of a variety of human languages compared and contrasted in an introduction to the diversity and similarities in human sound systems. Theories of the nature of

sound systems and methods of analysis in phonology and morphophonology will be presented. (Y)

5300 (ENG 5740) Theory of Syntax. Cr. 3

Prereq: LIN 5700. The theory of grammatical systems examined through analysis of sentence and word formation in a variety of human languages. Diversity and universals in grammar and theories of syntax. (Y)

5310 (ANT 5310) Language and Culture. Cr. 3

Prereq: ANT 2100 or ANT 5200 or SOC 2010 or consent of instructor. Interconnections of language and culture in distant and local communities, in contextx where languages are declining or developing anew, and in life cycle and ordinary contextx of daily life. Students explore their own language and cultural backgrounds and those to which they are drawn. (F)

5320 (ANT 5320) Language and Societies. Cr. 3

Contemporary linguistic anthropologists see language as a form of social action. How this understanding of language in society has evolved: classic works in linguistic anthropology and contemporary studies. Research in language in society. (W)

5570 (PHI 5570) Philosophy of Language. Cr. 4

Prereq: PHI 1850 or PHI 1860 or any philosophy course from the Philosophical Problems group or graduate student in linguistics or consent of instructor. Intensive investigation and discussion of philosophical problems concerning meaning, truth, and the nature of language. (B)

5630 (PHI 5630) Twentieth Century Analytic Philosophy I. Cr. 4

Prereq: PHI 1850 or PHI 1860 and any philosophy course from the Philosophical Problems group or consent of instructor. Major works, movements, and writers in the analytic tradition in the twentieth century up to the 1940s. Frege, Russell, Moore, the early Wittgenstein, Carnap. (B)

5700 (ENG 5700) Introduction to Linguistic Theory. Cr. 3

Introduction to the scientific study of language and methodologies of linguistic analysis: phonetics and phonology, morphology, syntax, semantics, sociolinguistics, and pragmatics. Introduction to selected disciplinary and interdisciplinary topics: typology and universals, communication systems, psycholinguistics, sociolinguistics, historical linguistics, anthropological linguistics. (T)

5720 (ENG 5720) Topics in Language. Cr. 3 (Max. 12)

Topics such as morphology, semantics, pragmatics, historical linguistics, history of English, pidgins and creoles, language variation, to be announced in Schedule of Classes. (T)

5730 (ENG 5730) Traditional Grammar. Cr. 3

Comprehensive analysis of English sentence structure and parts of speech using the terminology and descriptive approach of traditional grammar. (T)

5750 (ENG 5750) Theory of English as a Second Language. Cr. 3

Detailed examination of theories of language and language acquisition relevant to the non-native speaker of English. Review of research in language acquisition and language learning. (B)

5760 (ENG 5760) American Dialects. Cr. 3

Survey of chief social and geographic dialects of American English and introduction to theory of language variation. (I)

5770 (ENG 5770) Sociolinguistics. Cr. 3

Identification of sociolinguistic principles used by English speakers and writers in choosing among the different English codes, styles, registers and social dialects in American and other communities. (B)

6200 (PSY 6200) Development of Memory. Cr. 3

Prereq: PSY 3090 and PSY 2400 or equiv.; and consent of instructor for undergraduates. Major theoretical models of memory development will be discussed and used to explore various aspects of the memory process from infancy to adulthood. (I)

6710 (PSY 6710) Psycholinguistics. Cr. 3

Prereq: graduate standing or undergraduates with a strong psychology or linguistics background. Theory and research in various topics in psycholinguistics, including language development, speech perception and production, and language comprehension and memory, discussed within the framework of the behaviorist, generative linguistic and information processing approaches to language. (Y)

7710 (ENG 7710) Advanced Studies in Linguistic Structure. Cr. 4 (Max. 12)

Current issues in linguistic theory, including problems in phonology, morphology, syntax, formal semantics; also included are grammatical organization and the interrelationships among components, constraints on rules, linguistic metatheory and language change. Topics to be announced in Schedule of Classes. (I)

7720 (ENG 7720) Advanced Studies in Language Use. Cr. 4 (Max. 12)

Current problems in language use, including issues in language variation, pidgins and creoles, first language acquisition, perception and production, and linguistic stylistics. Topics to be announced in Schedule of Classes. (I)

7770 (ENG 7770) Discourse Analysis. Cr. 4 (Max. 12)

Analysis of inter-sentential relationships and of larger patterns. Implied and actual exchanges. Information ordering. Multi-level and intersectional analysis of expository prose. Topics to be announced in Schedule of Classes. (B)

7790 (PHI 7790) Seminar in Philosophy of Language. Cr. 6 (Max. 12)

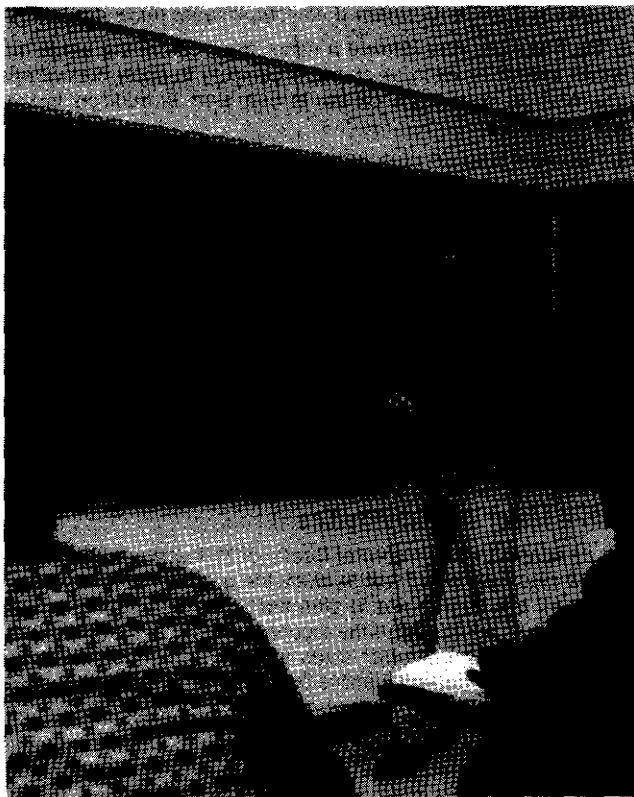
Prereq: PHI 1850 or equiv. or consent of instructor. (I)

7991 (ANT 7991) Directed Study in Linguistics. Cr. 1-9 (Max. 9)

Prereq: written consent of adviser and graduate officer. Open only to M.A. candidates or Ph.D. applicants. A research problem which requires field work or intensive and systematic reading of original technical literature. (T)

7999 Master's Essay Direction. Cr. 1-3

Prereq: consent of adviser. (T)



MATHEMATICS

Office: 1150 Faculty/Administration Bldg.; 577-2479

Chairperson: William S. Cohn

Associate Chairperson: Lowell J. Hansen

Academic Services Officer: Mary Klamo

Professors

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Associate Professors

John C. Breckenridge, Robert R. Bruner, David W. Jonah, John Klein, Tachen Liang, Kay Magaard, Peter Malcolmson, Harold T. Slaby (Emeritus), Stephen A. Williams.

Assistant Professors

Sarah Ferguson, Brian Taylor, Daoqi Yang

Graduate Degrees

MASTER OF ARTS with a major in Mathematics, Mathematical Statistics, or Applied Mathematics

DOCTOR OF PHILOSOPHY with a major in Mathematics and specializations in pure mathematics, applied mathematics and mathematical statistics

The courses offered by the Department of Mathematics serve several purposes; they supply the mathematical preparation necessary for students specializing in the physical, biological or social sciences, in business administration, in engineering, and in education; they provide a route by which students may arrive at the level of research competency in any of several special mathematical areas; they allow students to prepare themselves for work as mathematicians and statisticians in industry and government; and they give an opportunity to all inquisitive students to learn something about modern mathematical ideas.

Graduate Scholarship

All graduate degrees are governed by general University regulations. Information concerning these may be found in the College of Science Academic Regulations section of this bulletin (pages 364-366) and also in the Graduate School section (pages 16-30). Degree applicants are expected to inform themselves concerning these regulations and to take the responsibility of conforming to them. Additional requirements for specific graduate degrees in mathematics are explained below.

Master of Arts Degrees in Mathematics

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16.

Except for the program leading to the degree of Master of Arts in Applied Mathematics, the entrance requirements for the master's programs in mathematics and statistics include successful completion of twelve semester credits in mathematics beyond sophomore calculus (equivalent to MAT 2010, 2020, 2030, 2250, and 2350); this course work should include advanced calculus and linear or modern algebra. Credit accrued in courses such as the history of mathematics or the teaching of mathematics, in which the study of mathematics itself is not the primary purpose will not be counted toward this

requirement. As preparation for graduate study, the Mathematics Department strongly recommends undergraduate course work along the line of option A, described under Bachelor's Degrees in the undergraduate bulletin.

— With a Major in Mathematics

DEGREE REQUIREMENTS: The Master of Arts with a Major in Mathematics is offered under the following options:

Plan A: *Twenty-four credits in course work plus an eight credit thesis.*

Plan B: *Twenty-seven credits in course work plus a three credit essay.*

Plan C: *Thirty credits in course work.*

Completion of these plans must satisfy the following criteria:

1. At least twenty-four credits must be earned in course work from the Mathematics Department. Credits earned toward a thesis or essay in accordance with Plan A or Plan B may be included among these twenty-four credits.
2. Election of Mathematics 5420, 5430, 5600 and 5610, if not previously completed. Election of Mathematics 6500 or 6600, if not previously completed.
3. Election of at least two of the following, if not previously completed: Mathematics 5100, 5220, 5230, 5410, 5530, 5700, 5770, 5800, 5870. These courses represent several areas of applied mathematics.
4. Election of at least one additional mathematics course numbered 6000, or higher, with the exception of Mathematics 7999, 8999 and teacher preparation courses.
5. By the time twelve credits have been earned a *Plan of Work*, approved by a departmental adviser, should be submitted to the director of the master's program in mathematics. At this time, the Graduate Committee will act on the application for candidacy. The student will not be allowed to take more than twelve credits in the master's program unless candidacy has been established.
6. In the *Plan of Work* the student will state his or her choice of one of the plans A, B, or C. The choice of plan must be approved by the Graduate Committee.
7. There is a final oral examination for the master's degree. All students in Plan C are required to take this examination. Students in Plan A or B may, upon recommendation of the thesis or essay adviser, be excused from the final oral examination by the Graduate Committee.
8. Students in Plan A or B are required to present their thesis or essay in a public lecture.

NOTE: Candidates for the Master of Arts degree with a major in mathematics or in mathematical statistics are exempt from the requirement of the Graduate School that six credits in the major field must be in courses numbered 7000 and above.

Computer Science Cognates: For students interested in computer science, suitable cognates are: Computer Science 5680, 6500, 6580, 6620.

Secondary Teaching Option: To exercise this option a student should declare specialization in secondary teaching on the *Plan of Work*. The student should also have, or be in the process of obtaining, a certificate to teach in the secondary schools. Once approved for this option, the student may, if desired, modify the requirements for the Master of Arts degree in any or all of the following ways:

- a) substitute Mathematics 6150 for 5700 in satisfying requirement three.
- b) add Mathematics 6140 to the list of optional courses used in satisfying requirement four.

— with a Major in Mathematical Statistics

The requirements for this degree differ from those for the Master of Arts with a major in mathematics (see above) only in that the three requirements 2, 3, and 4 are replaced by a single one:

2. Election of Mathematics 5420, 5430, 5600, 5610, 5700, 5710, and 5800, if not previously completed. Election of two courses from the group: MAT 5030, 5770, 5830, 5870, 6830, 6840, 6500 or 6600. Mathematics 7700 is recommended.

It is stressed that all other requirements (1, 5, 6 and 7 above) are the same, except that the essay under Plan B must be written in the area of mathematical statistics.

— in Applied Mathematics

This degree is designed for students who are interested in applied mathematics or are interested in applying mathematics to areas outside of mathematics (e.g., biology, chemistry, computer science, economics, engineering, geology, medical science, physics, psychology, social science). The program is flexible in that it does not represent the teaching of any fixed body of knowledge. It does require two areas of concentration, one of these being the major in mathematics (pure and applied) with emphasis on the applicable subjects. The minor area is to be either in applied mathematics or in an area outside of mathematics (such as the above) to which the student is interested in applying mathematics. Mathematical methods are emphasized.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Applicants for the program leading to the degree of Master of Arts in Applied Mathematics must have either twelve credits beyond the calculus sequence or knowledge equivalent to Mathematics 2010-2030, 2250, 2350, 5070, 5420, Computer Science 2110 and a good background in some area in which he or she is planning to apply mathematics. A bachelor's degree in mathematics is not required.

DEGREE REQUIREMENTS: This program is usually offered as a *Plan B* master's degree option requiring twenty-nine credits of course work plus a three credit essay. However, other master's degree options (see above under Major in Mathematics) may be elected with the approval of the Departmental Graduate Committee. Specific requirements for the degree are as follows:

1. A minimum of thirty-two credits.
2. A minimum of twenty credits in mathematics courses not previously completed and numbered 5070 or above (except courses for teachers). At least four of these credits must be elected from the courses listed in requirement 3 for mathematics major cited above.
3. Each student must declare a minor (e.g., one of the areas mentioned above) in which he or she is planning to apply mathematics, and have at least eight credits in that area in addition to those required above.
4. The entire program of study must be a coordinated one that meets with the approval of the student's academic adviser, who will be assigned upon admission.

Each student in this program will ordinarily be required to write a project-type essay for three credits under the direction of a supervisor in the Mathematics Department and an essay adviser from some department related to the minor area, both of whom must approve the essay. (If the chosen minor area is in applied mathematics, the adviser in the major area can be the same as the adviser in the minor area.) The selection of advisers and topics must be approved by the Graduate Committee of the Mathematics Department.

Doctor of Philosophy with a Major in Mathematics

All applicants for the degree of Doctor of Philosophy with a major in mathematics are urged first to study the general University requirements for this degree and to plan their programs so that all those requirements are fulfilled in the proper order and at the proper times. Listed below are the major steps in earning this degree. Specific requirements of the Mathematics Department are included.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Doctoral applicants must have completed a master's degree in mathematics or reached an equivalent level of advancement. The Department Graduate Com-

mittee may make exceptions to this rule in cases where unusual ability has been demonstrated. Admission to the doctoral program will be granted only to those whose records indicate an ability to succeed in advanced study and research.

DEGREE REQUIREMENTS: Candidates for the doctoral degree must complete ninety credits in course work beyond the bachelor's degree, including thirty credits of dissertation direction. Additional specific requirements for this degree in mathematics are as follows:

Preliminary Examinations are two two-hour written tests, covering undergraduate level material in analysis and algebra (from a sophisticated point of view). A student who is admitted to the Ph.D. program must take the Preliminary Examination within the first two scheduled examination sessions after the date of admission. Any delay in taking the examinations must be approved in advance by the Graduate Committee.

Language Examinations: Students are expected to show proficiency, at the level of translating mathematical literature, in two modern languages other than English. Examiners and exam format will be determined on an individual basis by the Graduate Committee. One language exam must be in French, German, or Russian, and this examination must be passed before completion of the written qualifying examinations. The second language may be any language in which there is a substantial body of modern mathematical literature, including computer languages. The second language exam must be passed before the Defense of Dissertation is scheduled.

Course Requirements: In addition to the examinations described above, before advancement to candidacy every student in the Ph.D. program must complete each of the four courses with a grade of 'B' or better: MAT 7400, 7500, 7600, and 6600.

Qualifying Examinations consist of two sections, a written and an oral examination. A student must begin the written qualifying examination by the end of the third year in the Ph.D. program, and must pass all parts of the examination by the end of the fourth year in the Ph.D. program.

Written Qualifying Examinations consist of two 3-hour parts, a *major* and a *minor* area exam. The examination committee will give the student a list of topics in the student's area of specialization. These topics should both reflect the student's particular research interest and be of sufficient breadth to cover the entire area. The committee will also designate a minor area on which the student will be examined. The minor area is to be supportive of the major area but sufficiently different to avoid compromising the diversity of the total two-part exam.

Oral Qualifying Examinations: By University regulations, after passing the written Qualifying Examinations, a student must take an oral Qualifying Examination within thirty days after certification of passing the written exam. The oral examination committee consists of the written examination committee, and a representative of the Graduate Committee. The oral examination will normally cover material similar to that of the written examinations, but may also include material outside the written examination areas which is deemed relevant to the student's research work.

Defense of Dissertation: Candidates must pass a final oral examination covering their research after the candidate's adviser has approved the completed dissertation.

Fellowships, Assistantships, Scholarships

General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 30 of this bulletin.

A number of graduate assistantships and research fellowships are available for graduate students. Requests for information should be addressed to the Chairperson of the Department of Mathematics.

GRADUATE COURSES (MAT)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

5030 Statistical Computing and Data Analysis. Cr. 3

Prereq: MAT 2210 or equiv., 2250 or equiv. Computational aspect of statistics for advanced undergraduate and beginning graduate students. Computation of various statistical quantities by use of known statistical packages such as SAS, SPSS or BMD and the interpretation of their output. (B)

5070 Advanced Calculus. Cr. 4

Prereq: MAT 2030, and 2250 or 2350. The Real Numbers; limits; continuity; sequences and series of functions; uniform convergence; power series; Fourier series; basic properties and topology of Euclidean n -space; transformations, the Jacobian; implicit and inverse function theorems; improper integrals and functions defined by improper integrals; Lagrange multipliers. (T)

5100 Numerical Methods. Cr. 3

Prereq: MAT 2030, 2250 and CSC 1020 or familiarity with a programming language. Topics include: numerical errors, solutions of nonlinear equations, interpolation, approximation, numerical integration and differentiation, and matrices and systems of linear equations. (Y)

5220 Partial Differential Equations and Boundary Value Problems. Cr. 4

Prereq: MAT 5070. Boundary value problems of mathematical physics; Sturm-Liouville problems; eigenvalues and eigenfunctions; Green's functions; variational principles; the Rayleigh-Ritz method. (B)

5230 Complex Variables and Applications. Cr. 4

Prereq: MAT 5070. No credit after MAT 6600. Cauchy-Riemann equations; elementary functions; mappings by elementary functions; the Cauchy integral formula; Morera's theorem; Taylor series; Laurent series; residues and poles; conformal mappings; the Schwarz-Christoffel transformations; potential theory; Fourier and Laplace transforms and applications in differential and integral equations. (B)

5280 Methods of Differential Equations. Cr. 3

Prereq: MAT 2350. Linear n th order differential equations; linear systems of differential equations (constant and periodic coefficients); oscillation and comparison theorems for second order differential equations; boundary value problems; stability theory (Liapunov's direct method and frequency domain stability criteria); asymptotic solutions; autonomous non-linear systems; classification of singularities. (B)

5350 (PHI 5350) Logical Systems I. Cr. 4

Prereq: PHI 1850 or PHI 1860 or MAT 5600 or MAT 5420 or consent of instructor. Metaresults concerning formal systems of sentential and first-order logics; soundness, completeness; independence of

axioms; introduction to recursive functions; formalization of elementary arithmetic; discussion of Godel's incompleteness theorem and Church's Theorem. (B)

5390 (PHI 5390) Logical Systems II. Cr. 4

Prereq: PHI 5350 or MAT 5350 or consent of instructor. Detailed proofs of Godel's incompleteness results, Tarski's Theorem, and Church's Theorem; formal axiomatic treatment of set theory and selected applications. (B)

5400 Elementary Theory of Numbers. Cr. 3

Prereq: MAT 2030 and 2250. Unique factorization theorem; order of magnitude of arithmetic functions; congruences, quadratic residues, law of reciprocity; continued fractions; elements of geometry of numbers; second pearl of number theory. (Y)

5410 Applied Linear Algebra. Cr. 4

Prereq: MAT 2030 and 2250, or consent of instructor. Gaussian elimination, vector spaces, orthogonality, least squares approximation, Householder orthonormalization, definite and semidefinite matrices, Rayleigh's quotient. Applications such as differential equations, Markov processes, linear programming, networks, game theory. (B)

5420 Algebra I. Cr. 4

Prereq: MAT 2030 and 2250. Abstract concepts: sets, mappings, equivalence relations, induction, general methods of proof. Group theory: groups, subgroups, cyclic groups, direct products, cosets, Lagrange's Theorem, quotient groups, homomorphisms, permutation groups. Rings and fields (basic definitions) and vector spaces: basis, dimension, linear transformations. (T)

5430 Algebra II. Cr. 4

Prereq: MAT 5420. Group theory continued: Sylow Theorems, finite abelian groups. Ring Theory: rings, integral domains, fields of quotients, homomorphisms, ideals, quotient rings, P.I.D.s, U.F.D.s, polynomial rings. Advanced topics in linear algebra: canonical forms. Field theory: extensions, splitting fields, finite fields, geometric constructions. (T)

5520 Introduction to Topology. Cr. 3

Prereq: MAT 2030, and 2250 or 2350. No credit toward graduate degree in mathematics or statistics. An introduction to topology, mostly through an intuitive approach. Topics chosen from among: topological equivalence and topological properties, complexes, Euler characteristic, connectedness, compactness, continuity, Brouwer's Fixed Point Theorem, vector fields, Hairy Ball Theorem, n -dimensional spaces, classification of surfaces, cut and paste techniques, the Mobius band, orientability, the Fundamental group. (Y)

5530 Elementary Differential Geometry and its Applications. Cr. 3

Prereq: MAT 2030 and 2250. Introduction to the differential geometry of curves and surfaces in three-dimensional spaces, together with selected applications, such as computational geometry, mathematical elements of computer graphics, as chosen by instructor. (I)

5600 Introduction to Analysis I. Cr. 4

Prereq: MAT 5070 or consent of instructor. Completeness, convergence, compactness and continuity in the context of Euclidean spaces; applications to differential and integral calculus. (T)

5610 Introduction to Analysis II. Cr. 3

Prereq: MAT 5600. Point-wise and uniform convergence of sequences and series of functions; power series; introduction to analytic functions; Fourier series; possible additional topics. (T)

5700 Introduction to Probability Theory. Cr. 4

Prereq: MAT 2030, 2250 or 2350. Only two credits after MAT 2210 or MAT 6150. Probability spaces, combinatorial analysis; independence; discrete and continuous random variables; expectations; normal, Poisson and binomial distribution; joint, marginal and conditional distribution functions; law of large numbers; central limit theorems. (T)

5710 Introduction to Stochastic Processes. Cr. 3

Prereq: MAT 5700 or consent of instructor. Non-measure theoretic introduction to the theory of stochastic processes and its applications, with emphasis on Markov processes and stationary processes with both discrete and continuous parameters. (B)

5770 Mathematical Models in Operations Research. Cr. 3

Prereq: MAT 2030, 2250, and 2210 or 5700 or consent of instructor. Mathematical models (deterministic and/or probabilistic) applied to dynamic programming; games; queues and inventories. (B)

5800 Introduction to Mathematical Statistics. Cr. 4

Prereq: MAT 5700. A one-semester course for senior undergraduate and master's degree students. Introduction to basic mathematical theory of statistics. Topics include sample distributions, estimation theory, data analysis and sample statistics, testing hypothesis, two sample cases, analysis of variance, regression analysis, Bayesian inference. (Y)

5830 Applied Time Series. Cr. 3

Prereq: college courses in statistics and calculus, or consent of instructor. Time series models; statistical analysis in the time domain and examples; statistical analysis in the frequency domain and examples. (B)

5870 Methods of Optimization. Cr. 3

Prereq: MAT 2350. Introduction to basic mathematical theory and computational methods of optimization; optimality conditions in various optimization problems and numerical methods of optimization. (Y)

5890 Special Topics in Mathematics. Cr. 3-4 (Max. 12)

Prereq: MAT 2030, and 2250 or 2350. Material currently of interest to students and faculty. Topics to be announced in Schedule of Classes. (I)

5990 Directed Study. Cr. 1-4 (Max. 8)

Prereq: written consent of adviser and chairperson (and of graduate officer for graduate students). Undergraduates who elect this course must be mathematics majors of honors caliber. Content will vary to satisfy needs of individual student. (T)

6130 (MAT 6130) Topics in Mathematics for High School Teachers I. (MAT 2860) Cr. 4

Prereq: MAT 2020. No credit after MAT 1870. Foundations of mathematics: logic, sets, functions, sequences. Algorithms. The integers. Matrices. Mathematical reasoning: methods of proof, induction, recursive definitions. Combinatorics. Relations: recurrence relations, equivalence relations, orderings. Graph theory and trees. Boolean algebra. Applications to computer science. (Y)

6140 Topics in Mathematics for High School Teachers II. Cr. 3

Prereq: MAT 2030, and 2250 or 2350. Axiomatic geometry: logic, methods of proof, models; Hilbert's axioms; the Parallel Postulate; "Neutral," Euclidean and non-Euclidean geometries; Hyperbolic geometry; Poincare models. (Y)

6150 Topics in Mathematics for High School Teachers III. (MAT 2210) Cr. 4

Prereq: grade of C or better in MAT 1800; 2010 recommended. No credit after MAT 5700. Counting techniques, discrete sample spaces and probability, random variables, mean and variance, joint distributions, the binomial and normal distributions, central limit theorem, estimation and hypothesis testing. (T)

6400 Graph Theory. Cr. 4

Prereq: MAT 5420 or consent of instructor. Basic concepts of graphs and directed graphs; trees; cycles and circuits; connectivity; traversability; planarity; colorability. Further topics from among factorization, line-graph, coverings and independence, graphs and matrices, automorphism groups, enumeration, Ramsey theory, hypergraphs, packing theory, network flows. (B)

6410 Combinatorics. Cr. 4

Prereq: MAT 5420 or consent of instructor. Enumeration: the classical theory, principle of inclusion and exclusion, generating functions, the Moebius function; combinatorial designs including Latin squares,

difference sets, projective geometries, Hadamard matrices, construction problems; transversal theory; Ramsey's theorem; coding theory; partial orders; lattices. (B)

6500 Topology I. Cr. 4

Prereq: MAT 5610 or consent of instructor. Topological spaces and continuous functions; connectedness; compactness; product and quotient spaces; metric spaces; Urysohn's lemma; Tietze extension theorem; homotopy; covering spaces and path lifting; the fundamental group and examples; Brouwer fixed point theorem and applications. (Y)

6600 Complex Analysis. Cr. 2-4

Prereq: MAT 5610 or consent of instructor. Offered for two credits only if student has taken MAT 5230. Complex differentiation; elementary functions; Cauchy's integral theorem; power series; Laurent expansions; singularities; residue theorem; entire and meromorphic functions; Riemann mapping theorem. (Y)

6830 Design of Experiments. Cr. 3

Prereq: MAT 5820. Randomized blocks; Latin and Graeco-Latin squares; factorial designs; confounding; split plot; fractional replication; balanced incomplete blocks. (I)

6840 Linear Statistical Models. Cr. 3

Prereq: MAT 5820 or equiv. Introduction to theory of linear statistical models; for advanced undergraduate or beginning graduate students. (B)

7200 Ordinary Differential Equations. Cr. 3

Prereq: MAT 5420 and 5610 or consent of instructor. Existence and uniqueness of solutions; linear solutions and linearization; linear differential equations in the complex domain; solutions near regular and irregular singular points; autonomous systems; stability theory; limit cycles; perturbation theory; boundary value problems; Green's function; spectral theory. (B)

7210 Partial Differential Equations. Cr. 3

Prereq: MAT 5420 and 5610 or consent of instructor. Linear partial differential equations; fundamental solutions; distributions and their Fourier transforms; hyperbolic equations; Cauchy-Kovalevsky theorem; energy inequalities; weak solutions; propagation of singularities; elliptic equations; maximum principles; Sobolev spaces and inequalities; Garding's inequality; existence and regularity of solutions of Dirichlet problems; fundamental solutions of parabolic equations; strongly continuous semigroups. (B)

7270 Topics in Applied Mathematics. Cr. 3-4 (Max. 12)

Prereq: consent of instructor. Topics of special interest such as differential equations; calculus of variations; elliptic functions; orthogonal functions; numerical methods; systems and control theory. Topics to be announced in Schedule of Classes. (B)

7400 Advanced Algebra I. Cr. 4

Prereq: MAT 5430 or consent of instructor. Permutation groups; Sylow Theorems; Jordan-Holder theorem; solvable and nilpotent groups; free groups; unique factorization domains; principal ideal domains; modules over principal ideal domains; linear transformations; Cayley-Hamilton theorem; free modules; noetherian rings; localization. (B)

7410 Advanced Algebra II. Cr. 3

Prereq: MAT 7400 or consent of instructor. Field extensions; finite fields; Galois theory; classical applications of Galois theory; algebraic closure; tensor and exterior algebras; determinants; alternating, quadratic and hermitian forms. (B)

7470 Topics in Algebra. Cr. 3-4 (Max. 12)

Prereq: MAT 7410 or consent of instructor. Selected topics from linear algebra; homological algebra; group theory; field theory. Topics to be announced in Schedule of Classes. (I)

7500 Topology II. Cr. 4

Prereq: MAT 6500 or consent of instructor. Smooth manifolds and maps; examples from projective spaces, from Lie groups, and from low dimensions; local coordinates; partitions of unity; tangent vectors and tangent bundles; differentials of smooth maps; vector fields; local

one-parameter groups of diffeomorphisms; differential forms; integration and Stokes theorem; definition of deRham cohomology. (B)

7510 Algebraic Topology I. Cr. 3

Prereq: MAT 5430 and 6500. Homology and its applications including fixed-point theorems; Jordan-Brouwer separation theorem; invariance of domain; CW-complexes; Kunnet theorem. (B)

7520 Algebraic Topology II. Cr. 3

Prereq: MAT 7510. Cohomology ring; orientation and duality on manifolds; homotopy theory, Hurewicz theorem. (B)

7600 Real Analysis I. Cr. 3

Prereq: MAT 5610 or consent of instructor. Lebesgue measure; general measures; measurable functions; integration (monotone and dominated convergence theorems); function spaces; Lebesgue spaces; modes of convergence; product measures; Fubini theorem. (B)

7610 Real Analysis II. Cr. 3

Prereq: MAT 7600 or consent of instructor. Differentiation; relationship between differentiation and integration; Radon-Nikodym theorem; Fourier transforms; Hilbert and Banach spaces; selected topics. (B)

7620 Introduction to Functional Analysis. Cr. 3

Prereq: MAT 7610 or consent of instructor. Uniform boundedness, open mapping and closed graph theorems in Banach spaces; convexity, Hahn-Banach theorem, and Krein-Milman theorem; duality, reflexivity, weak topologies; classical Banach spaces; Hilbert space; normed algebras and spectral theory of operators. (B)

7700 Advanced Probability Theory I. Cr. 3

Prereq: MAT 5700 and 7600 or consent of instructor. Probability spaces; random variables; expectations and moments; convergence concepts; product spaces and Kolmogorov extension theorem; separability of random processes; continuity of random processes; stopping times; conditional expectation; independence. (B)

7710 Advanced Probability Theory II. Cr. 3

Prereq: MAT 7700 or consent of instructor. Law of large numbers; characteristic functions; limit theorems; random walks; Markov processes; stationary processes; ergodic theory; martingales. (B)

7770 Special Topics in Probability. Cr. 3-4 (Max. 12)

Prereq: MAT 7710. Topics of special interest such as Markov processes; time series; ergodic theory; random equations; probability measures on algebraic structures; probability measures in Banach spaces; martingales; Brownian motion; stochastic integrals. Topics to be announced in Schedule of Classes. (I)

7810 Advanced Statistics Theory I. Cr. 3

Prereq: MAT 5610, 5700. First of two basic courses for Ph.D. students in the Mathematics Department who are interested in statistics. Topics include sample distribution theory, point and interval estimations, optimal estimates, theory of hypothesis testing, and most powerful tests. (B)

7820 Advanced Statistics Theory II. Cr. 3

Prereq: MAT 7810. Continuation of MAT 7810. Topics include regression analysis, linear models, analysis of categorical data, nonparametric statistics, decision theory, and Bayesian inference. (B)

7870 Topics in Statistics. Cr. 3-4 (Max. 12)

Prereq: MAT 7800 or consent of instructor. Student computer account required. Selected topics such as statistical estimation theory; theory of statistical hypothesis testing; non-parametric methods in statistics; statistical sequential analysis; statistical multivariate analysis. Topics to be announced in Schedule of Classes. (B)

7990 Directed Study. Cr. 1-4 (Max. 12)

Prereq: written consent of adviser and graduate officer. (T)

7999 Master's Essay Direction. Cr. 1-3

Prereq: consent of adviser. (T)

- 8000 Advanced Topics in Mathematics. Cr. 2-4 (Max. 24)**
Prereq: consent of instructor. Topics to be announced in Schedule of Classes. (Y)
- 8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)**
Prereq: consent of adviser. (T)
- 9999 Doctoral Dissertation Research and Direction. Cr. 1-16 (30 req.)**
Prereq: consent of doctoral adviser. Offered for S and U grades only. (T)

Teacher Preparation Courses

- 5160 Mathematics for Elementary School Teachers I. (MAE 5050) Cr. 3**
Prereq: one of following within previous two semesters: satisfactory score on placement exam; or MAT 1050; or 0995. No credit toward a major or minor for secondary mathematics teaching. Graduate credit for MAE 5050 only; undergraduate credit for MAT 5160 only. Sets and Venn diagrams; mathematical systems, including group, ring, and field properties; set of real numbers and its common subsets: their properties, algorithms, and applications; number theory, including fundamental theorem of arithmetic; ratio, proportion, and percents; introduction to the complex number system. (Y)
- 5170 Mathematics for Elementary School Teachers II. (MAE 5060) Cr. 3**
Prereq: MAT 5160. No credit toward a major or minor for secondary mathematics teaching. Graduate credit for MAE 5060 only; undergraduate credit for MAT 5170 only. Geometry, with emphasis on inductive investigations and conjecturing; measurements of two- and three-dimensional figures; introduction to probability and descriptive statistics; relations and functions; elements of algebra; analytic geometry of the line. (Y)
- 5180 Mathematics for Middle/Junior High School Teachers I. (MAE 5100) Cr. 3**
Prereq: MAT 5160 and 5170 or consent of instructor. No credit toward a major or minor for secondary mathematics teaching. Graduate credit for MAE 5100 only; undergraduate credit for MAT 5180 only. Development of Euclidean geometry as a mathematical system; related historical topics; introduction to other geometries; selected topics such as transformations and tessellations. (Y)
- 5190 Mathematics for Middle/Junior High School Teachers II. (MAE 5110) Cr. 3**
Prereq: MAT 5180. No credit toward a major or minor for secondary mathematics teaching. Graduate credit for MAE 5110 only; undergraduate credit for MAT 5190 only. Trigonometry and analytical geometry. (Y)

NUTRITION and FOOD SCIENCE

Office: 3009 Science Hall; (313) 577-2500; Fax: (313) 577-8616
Chairperson: David M. Klurfeld
Administrative Assistant: Laura Lee Birnie-Lindemann

Professors

Mary Jane Bostick (Emerita), David M. Klurfeld, K.-L. Catherine Jen, Leora A. Shelef

Assistant Professors

Thomas Fungwe, Ahmad R. Heydari, Pramod Khosla

Lecturers

Tonia Reinhard, Mary Thiede

Associates

Biochemistry: S.C. Brooks; Chemical Toxicology: R.F. Novak; Internal Medicine: Z. Djuric, G. Grunberger, A. Prasad, J.R. Sowers; Pediatrics: S. Dabbagh, W.K. Koo; Physiology: J. Dunbar

Graduate Degrees

MASTER OF ARTS with a major in Nutrition and Food Science

MASTER OF SCIENCE with a major in Nutrition and Food Science

DOCTOR OF PHILOSOPHY with a major in Nutrition and Food Science and specialization in nutrition or food science

Master's Degrees

Admission to these programs is contingent upon admission to the Graduate School; for requirements, see page 16. Successful applicants usually have honor point averages higher than 3.0. Undergraduate preparation should include a minimum of ten credits in nutrition and food science. One year of introductory chemistry, and at least one semester each of organic chemistry, anatomy and physiology are required for the M.S. degree; biochemistry and statistics are recommended. Persons lacking a limited number of prerequisites may be admitted conditionally, contingent upon completion of certain courses specified by the graduate committee.

The Graduate Record Examination must be taken prior to, or within six months of, admission.

Upon admission, each student should consult with an adviser, obtain the departmental Graduate Handbook, and prepare a preliminary *Plan of Work* based on the degree requirements. Academic standards and procedures, including guidelines for essay and thesis preparation and standards for academic performance, are described in the Department's Graduate Handbook.

DEGREE REQUIREMENTS:

Master of Science with a Major in Nutrition and Food Science:

This degree is offered only as a Plan A master's program requiring thirty-two credits, including an eight-credit thesis based on completion of research study, and eight credits of laboratory course work including NFS 7140.

Master of Arts with a Major in Nutrition and Food Science: This degree is offered only as a Plan B master's program requiring thirty-two credits, including a three-credit essay. The concentration in food service management includes courses in the School of Business Administration.

Scholarship: All course work must be completed in accordance with the regulations of the Graduate School and the College governing

graduate scholarship and degrees; see pages 16-30 and 364-366, respectively.

General Requirements for both Master's Programs Credits

NFS 5130 — Food Chemistry	3
NFS 5230 — Nutrition and Metabolism	4
NFS 7060 — Research Problems in Nutrition and Food Science	4
NFS 6850 — (W) Controversial Issues	2
NFS 7850 — Seminar (two semesters required; one credit per semester)	2
NFS 7140 — Adv. Lab. Tech. in Nutrition and Food Science (M.S. degree)	4
NFS 7999 — Essay (Plan B)	3
NFS 8999 — Thesis (Plan A)	8

Electives

NFS 5220 — Community Nutrition	4
NFS 5250 — Nutrition and Disease	4
NFS 6160 — Food Laws and Regulations	3
NFS 6210 — Nutrition through the Life Cycle	3
NFS 7230 — Nutrition and Physical Performance	3
NFS 7890 — Advanced Workshop: Mineral Metabolism	3
— Advanced Workshop: Vitamin Metabolism	3
— Advanced Workshop: Nutrition and Aging	2

Master of Science Laboratory Requirement (Eight Credits)

Laboratory course credit requirements may be satisfied by courses in nutrition and food science, and from related disciplines. The following may count as laboratory credit at the discretion of the adviser:

NFS 6130 — Food Preservation (CHE 6130)	4
NFS 7140 — Advanced Lab Techniques	4
NFS 7996 — Research	3-6
NFS 8999 — Master's Thesis Research and Direction	7

— Program for Dietetic Interns

Students accepted into an approved dietetic internship may pursue either of the above described plans of work. Applicants may earn up to four credits in supervised field experience (NFS 5992) in association with the dietetic internship experience; grades for this course will be deferred until satisfactory completion of eight credits of general requirement courses in the Department. In addition, upon approval of the academic adviser and the Internship director, qualified students may pursue a directed study (NFS 7990) during an eight week residency program with emphasis on either clinical nutrition, management, or community dietetics.

Doctor of Philosophy

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Applicants to the program usually must have a master's degree in nutrition and/or food science or in a cognate science. Exceptionally well-qualified students may be admitted directly to the doctoral program. A minimum honor point average of 3.0 and the Graduate Record Examination are required. Two letters of reference must be submitted, along with a statement of the applicant's goals and career objectives. Students with a master's degree in nutrition, food science, or related disciplines will have their transcripts evaluated to determine which courses meet the Ph.D. course requirements.

Candidacy: In order to become a candidate for the Ph.D. degree, an applicant must successfully complete both a written and an oral qualifying examination.

DEGREE REQUIREMENTS: A minimum of ninety graduate credits beyond the baccalaureate is required for completion of the Ph.D. program, distributed as follows:

1. At least thirty credits in Nutrition and Food Science. Twenty-two of these credits are required of all students, including four credits in graduate seminar. Eight credits are selected to meet student needs and interests.
2. At least thirty credits in courses from other basic science departments. Seven of these credits are required of all students, and

twenty-three are selected to meet student needs and interests. Eight credits must be completed outside the Department to form a minor. A list of required and elective courses for doctoral studies is available from the Department Office.

3. Thirty credits in dissertation research (NFS 9999), involving independent research under the direction of a faculty member in the Department.

4. Submission of a satisfactory research dissertation.

Scholarship: All course work must be completed in accordance with the regulations of the Graduate School and the College governing graduate scholarship and degrees; see pages 16-30 and 364-366, respectively.

Assistantships

General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 30 of this bulletin.

Graduate assistantships are available for well-qualified students working toward the M.S. or Ph.D. degree. Requests for information should be addressed to the Chairperson of the Department.

GRADUATE COURSES (NFS)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

5130 Food Chemistry. Cr. 3

Prereq: NFS 2130 or equiv., CHM 2220. Study of the chemical constituents of foods, their relationship to the biological and physical properties, and overall food quality. (W)

5140 Laboratory Techniques in Nutrition and Food Science. Cr. 4

Prereq: NFS 2130 and 2210 or equiv.; CHM 2220 or equiv. Basic modern and classical analytical techniques and instruments in nutrition and food science. Background theory to principles of instrumental assays. Procedures for evaluation of macro and micro food components analysis. Physiological functions relevant to nutrition. Material fee as indicated in the Schedule of Classes. (Y)

5200 Advanced Dietetics. Cr. 3

Prereq: NFS 3200, 5230, 5250. Recommended for students in coordinated dietetics program. Development and refinement of dietetic practitioner skills through applications in critical care and speciality practice areas and in community agencies; theoretical basis for individual counseling and group process. (F)

5220 Community Nutrition. Cr. 4

Prereq: NFS 2130, 2140, 2210, 5230, 5250. Introduction to management of nutritional care in healthy and at-risk persons throughout the lifespan. Identifying problems and planning interventions to meet

population nutritional problems and to reduce nutrition-related health risks in community settings. Community assessment; organization and function of community agencies; interventions appropriate to small and large groups, including nutrition education. (F)

5230 Nutrition and Metabolism. Cr. 4

Prereq: NFS 2210, BIO 2870 or equiv. The physio-biochemical properties of nutrients and their bionutritional interrelationships at the cellular and sub-cellular level. Carbohydrate, protein, and lipid metabolism and the role of vitamins and minerals in these metabolic processes. (F)

5250 Nutrition and Disease. Cr. 4

Prereq: NFS 5230. Application of the principles of biochemistry and physiology in the study of nutrient metabolism as altered by disease. The physio-biochemical basis for diet in the treatment of disease. May include some field experiences or clinical assignments. Units on team approach to patient care also included. (W)

5350 Organization and Management of Food Service Systems. Cr. 4

Prereq: NFS 2130, 2140, 2210. Survey of food service systems; factors affecting their successful operation. Components of quality assurance supporting well-being of target markets. Identification of operative management skills. (F)

5360 Management of Nutritional Care and Services. Cr. 2

Prereq: NFS 4200; coreq: 4220. Recommended for students in coordinated dietetics program. Application of management theory and principles in the three areas of dietetic practice; career planning and professional role development. (W)

5990 Honors Directed Study. Cr. 1-4 (Max. 6)

Prereq: College honors standing; 3.3 h.p.a. (T)

5992 Supervised Field Experience. Cr. 2-4

Prereq: consent of instructor. Supervised field experience designed to correlate classroom theory with practical work. (T)

5996 Research in Food Science and Nutrition. Cr. 1-4 (Max. 6)

Prereq: consent of instructor. Minimum of 3 hours of lab research for each credit. Open only to undergraduate students. Research projects under direction of faculty active in research. (T)

6130 Food Preservation. (CHE 6130) (NFS 7130) Cr. 4

Prereq: BIO 2200, NFS 2130, and NFS 5130 or equiv. Fundamentals of food preservation: refrigeration, freezing, thermal processing, dehydration and concentration, salting and smoking, chemical preservation, radiation preservation, fermentation. Material fee as indicated in the Schedule of Classes. (F)

6160 Food Laws and Regulations. Cr. 3

Prereq: NFS 2210. State, federal and international food law; interpretations of regulatory food standards and determination of conformity of food products to them. Methods of food inspection. Role of the food law in assuring food safety, wholesomeness and nutritional quality. (B)

6210 Nutrition through the Life Cycle. Cr. 3

Prereq: NFS 2030 or 2210. Biological growth and nutritional requirements from fetal stages of development through aging. Nutritional standards in light of current epidemiological data and scientific research. (S)

6230 Nutrition and Physical Performance. (NFS 7230) Cr. 3

Prereq: NFS 2030 or 2210. How nutrients affect physical fitness and physical performance; how physical performance can be improved by adopting optimal dietary practice and how exercise and optimal nutrition can prevent human diseases. (B)

6250 Nutrition Instruction for Teachers. Cr. 2

Prereq: consent of instructor. Offered only for graduate credit; for teachers only. Biochemical and physiological bases of nutrition. (Y)

6260 Nutrition Laboratory for Teachers. Cr. 1

Prereq: consent of instructor. Offered only for graduate credit; for teachers only. Laboratory component of NFS 6250. Experiments

which can be performed in a high school setting using students as subjects. (Y)

6850 (WI) Controversial Issues. Cr. 2 (Max. 6)

Prereq: consent of instructor; senior standing. Topics to be announced in Schedule of Classes. (F,W)

7060 Research Problems in Nutrition and Food Science. Cr. 4

Prereq: consent of instructor. Research orientation: acquaintance with published data, principles of design, methods of collecting data, and basic statistical analysis. (B)

7140 Advanced Laboratory Techniques in Nutrition and Food Science. Cr. 4

Prereq: graduate standing; BMB 5010 or CHM 5600 or equiv.; NFS 5140. Laboratory techniques in nutrition and food science research, including: animal experimentation, isotope use and quantitation, radioimmunoassay and receptor assays, atomic absorption; chromatography; microbial assays. Material fee as indicated in the Schedule of Classes. Breakage fee as indicated in the schedule of classes. (Y)

7230 (NFS 6230) Nutrition and Physical Performance. Cr. 3

Prereq: NFS 2030 or 2210. How nutrients affect physical fitness and physical performance; how physical performance can be improved by adopting optimal dietary practice and how exercise and optimal nutrition can prevent human diseases. (B)

7850 Seminar. Cr. 1-3 (2 req.; max. 8)

Prereq: consent of instructor. Topics to be announced in Schedule of Classes. (F,W)

7890 Advanced Workshop. Cr. 2-4 (Max. 8)

Application of theoretical principles to selected areas of nutrition and food science. Topics and prerequisites to be announced in Schedule of Classes. (S)

7990 Directed Study. Cr. 1-4 (Max. 4)

Prereq: consent of adviser and instructor. Offered for each area of specialization. (T)

7996 Research. Cr. 1-8 (M.S.: MAX 6; PH.D.: MAX 20)

Prereq: consent of adviser. Offered for S and U grades only. (T)

7999 Master's Essay Direction. Cr. 1-3 (Max. 3)

Prereq: consent of adviser. Offered for S and U grades only. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of adviser. Offered for S and U grades only. (T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16 (30 req.)

Prereq: consent of doctoral adviser. Offered for S and U grades only. (T)

PHYSICS and ASTRONOMY

Office: 135 Physics Research Building; 577-2721

Chairperson: Thomas M. Cormier

Associate Chairperson: William P. Beres

Assistant Chairperson: Talbert S. Stein

Professors

George B. Beard (Emeritus), William P. Beres, Henry V. Bohm (Emeritus), Jhy-Jiun Chang, Juei-Teng Chen, Thomas M. Cormier, Harry H. Denman (Emeritus), Gerald L. Dunifer, Lawrence D. Favro (Emeritus), David M. Fradkin (Emeritus), Suraj N. Gupta (Distinguished), Paul E. Karchin, Walter E. Kauppila, Paul H. Keyes, Yeong Wook Kim (Emeritus), Pao-Kuang Kuo, William B. Rolnick, Alvin M. Saperstein, Martin Stearns (Emeritus), Talbert S. Stein, Melbourne G. Stewart (Emeritus), Robert L. Thomas, Jogindra M. Wadehra, Lowell E. Wenger

Associate Professors

Rene Bellwied, Giovanni Bonvicini, William E. Dorenbusch, Caroline G. Morgan, Ratna Naik, Karur R. Padmanabhan

Assistant Professors

Simon Bennett (Research), David A. Cinabro, Xiaoyan Han (Research), Robert Harr, James M. Johnson (Research), Ching-Kwan Kwan (Research), Aleksandr Makhlin (Research), Sanjeev Pandey (Research), Claude A. Pruneau, Steven F. Takach, Gerd M. Welke, William K. Wilson (Research)

Graduate Degrees

MASTER OF ARTS with a major in Physics

MASTER OF SCIENCE with a major in Physics

DOCTOR OF PHILOSOPHY with a major in Physics

Physics is the science that describes the behavior of the physical world. It is the most basic of all sciences and as such is responsible for the interpretation of fundamental physical processes which support many other scientific disciplines.

These degree programs are designed to provide the student with the broad-based knowledge and problem-solving skills that are needed in order to be a productive physicist in an academic, government, or industrial environment. The programs can accommodate students with varying undergraduate backgrounds and are designed to provide maximum flexibility for individual students. At the doctoral level, specializations are offered in the areas of: elementary particle physics, nuclear physics, condensed matter physics, atomic physics, materials science, optics, mathematical physics, quantum field theory, and applied physics.

Faculty members are committed to excellence in research and teaching, and work in an open and informal atmosphere which allows effective communication between students and advisors. The faculty hold national and international reputations in their areas of specialization. They organize and participate in conferences, publish extensively, and receive numerous outside grants, contracts and fellowships. In addition, they engage in many collaborations with scientists in both foreign and American universities and national laboratories. The department is housed in a modern physics building containing well-equipped research laboratories.

Master's Degrees

For some students, the master's degree will be used as part of a continuing Ph.D. program; for others, it will be a terminal degree leading to employment in government laboratories, industrial programs, hospitals, teaching positions, and other occupations. The Master of Science with a Major in Physics is offered under Plan A, and the Master of Arts with a Major in Physics is offered under Plan B, as described below.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. In addition, applicants must satisfy the following criteria.

Prerequisite preparation should include a minimum of general college physics with laboratory (equivalent to Physics 2170, 2180, and 3300), fifteen credits in the intermediate physics courses (for example, those equivalent to Physics 5200, 5600, 6300, 6500, 6510, 6600, 6800, 6810, 6850, 6890); mathematics through Mathematics 5070; and Chemistry 1070; or equivalent courses.

The Graduate Record Examination, both the General section and the Physics subject test, is required as a counseling aid in preparing the student's plan of study. Both tests must be taken by the end of the student's first semester of graduate study.

Candidacy must be established by the time twelve credits have been earned.

Scholarship: All course work must be completed in accordance with the academic procedures of the College of Science and the Graduate School governing graduate scholarship and degrees; see pages 364-366 and 16-30, respectively.

MASTER OF SCIENCE REQUIREMENTS: The Master of Science degree is offered by this Department only under the following option:

Plan A: *Twenty-four credits in course work plus an eight-credit thesis.*

Specific requirements include the following:

1. At either the graduate or undergraduate level, Physics 6300, 6500, 6600, 6800, 6810, or equivalent courses, and mathematics through MAT 5070 or an equivalent course.
2. At least twelve credits in physics at the 7000 level or above (exclusive of Physics 7990, 7996, 7999, 8995, 8999) including at least one of the courses Physics 7050, 7060, 7070; and at least one of the courses Physics 7100, 7200.

3. A departmental final oral examination is required of all candidates.

MASTER OF ARTS REQUIREMENTS: The Master of Arts degree is offered by this Department only under the following option:

Plan B: *Twenty-nine credits in course work plus a three-credit essay.*

Course requirements are the same as requirements (1) through (3) in the Master of Science program above.

Doctor of Philosophy With a Major in Physics

Admission Requirements: see above, under 'Master's Degrees.'

DEGREE REQUIREMENTS: Candidates for the doctoral degree must complete ninety credits beyond the baccalaureate, including thirty credits of dissertation research. Students must demonstrate proficiency in the fields of:

- (a) Mechanics
- (b) Electromagnetic Theory
- (c) Quantum Physics
- (d) Thermodynamics and Statistical Mechanics

The following courses or their equivalent will be required of all candidates: Physics 7100, 7110, 7200, 7400, 7410, 7500, 7600, 7610; and two out of three of Physics 7050, 7060, 7070.

In addition, students specializing in experimental or theoretical solid state physics will be required to take Physics 7550 and 7560. Students specializing in any branch of theoretical physics are encouraged to take the quantum theory of fields, or a related directed study. Finally, the student must submit an approved dissertation.

On petition of the student and his/her thesis adviser, the Departmental Graduate Committee may waive any of the above course requirements.

Ph.D. Qualifying Examination: This will normally be taken after the student has completed approximately two years of graduate course work. Its purpose is to investigate the student's knowledge of physics and capacity for creative thought. The examination will be part oral

and part written. The student must submit a *Plan of Work* prior to taking this examination.

Scholarship: All course work must be completed in accordance with the regulations of the Graduate School and the College governing graduate scholarship and degrees; see pages 16-30 and 364-366, respectively.

Physics Colloquium (PHY 8995): It is required that all full-time graduate students register for and attend the Departmental Physics Colloquium each semester they are in residence.

Financial Aid

General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 30 of this bulletin.

Graduate teaching assistant appointments are available to qualified entering and continuing graduate students. A graduate course load of approximately eight credits per semester is usual with such an appointment. Normally about eight to ten contact hours of quiz (recitation) sections or laboratory instruction sessions per week are arranged.

Graduate research assistant appointments, involving no teaching duties, are also available to qualified students. Stipends for these appointments are comparable to the teaching appointment stipends. Research undertaken while holding such an appointment may form the basis of the master's or doctoral thesis.

In addition, various government fellowships, University fellowships, and a Knoller Physics-Chemistry Fellowship are available within the Department. Students applying for either teaching or research appointments are automatically considered for these grants. Application blanks and specific information concerning the above appointments may be obtained by writing the Chairperson.

GRADUATE COURSES

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

ASTRONOMY (AST)

5010 Astrophysics and Stellar Astronomy. (PHY 5010) Cr. 3 (LCT: 3)

Prereq: PHY 2140 or PHY 2180, MAT 2010, or consent of instructor. Electromagnetic radiation and matter; solar characteristics; stellar distances; magnitudes; spectral classification; celestial mechanics; binary stars; stellar motions, structure and evolution; compact and variable stars; Milk Way Galaxy and interstellar medium; galaxies and clusters of galaxies; quasars; Hubble's Law; cosmology. (B:W)

PHYSICS (PHY)

All courses with a laboratory have a non-refundable materials fee and are so indicated in the Schedule of Classes.

5010 (AST 5010) Astrophysics and Stellar Astronomy. Cr. 3

Prereq: PHY 2140 or 2180, MAT 2010 or consent of instructor. Electromagnetic radiation and matter; solar characteristics; stellar distances; magnitudes; spectral classification; celestial mechanics; binary stars; stellar motions, structure and evolution; compact and variable stars; Milk Way Galaxy and interstellar medium; galaxies and clusters of galaxies; quasars; Hubble's Law; cosmology. (B:W)

5030 Plasma Physics. Cr. 3

Prereq: PHY 5600, or 2180 and consent of instructor and MAT 2010. Introduction to plasma physics for students in science and engineering. Motion of charged particles in electromagnetic fields; magnetohydrodynamic theory including electron conductivity and mobility; wave propagation in a plasma; plasma kinetic theory with emphasis on Boltzmann, Vlasov and Fokker-Planck equations; plasma sheaths.

(B:F)

5200 Mechanical Phenomena. Cr. 3

Prereq: PHY 2180, or 2140 with consent of instructor; MAT 2030. Dynamics of particles and systems including central force motion, coupled oscillations and waves in elastic media. (W)

5350 Optics. Cr. 3-5

Prereq: PHY 2180 or 2140, MAT 2030. Only non-physics majors may take course without laboratory. Geometrical and physical optics: wave motion, interference, diffraction, refraction, dispersion, polarization. Material fee as indicated in Schedule of Classes. (F)

5550 Basic Electronics. Cr. 4

Prereq: PHY 2140. Not open to physics majors. Basic electronics for biologists, chemists, high school science teachers and other interested students. D.C. and A.C. circuits, transistor circuits, solid state devices, amplifiers, oscillators, basic logic, and applications to measurement and instrumentation. Material fee as indicated in the Schedule of Classes. (F)

5600 (WI) Electricity and Magnetism I. Cr. 4

Prereq: PHY 2180, or 2140 with consent of instructor; MAT 2350. Electric forces, fields, potentials, Gauss' law, electrostatics, currents, Ampere's and Faraday's Laws, vector potential, Maxwell's equations. (F)

5620 Electronics and Electrical Measurements. Cr. 5

Prereq: PHY 5600 or consent of instructor. Amplifier circuits, operational amplifiers, oscillators, digital electronics, analog and digital measurements. Material fee as indicated in the Schedule of Classes. (W)

5990 Directed Study. Cr. 1-3 (Max. 6)

Prereq: junior standing and consent of adviser and instructor. Primarily for students who wish to continue in a field beyond material covered in regular courses, or who wish to study material not covered in regular courses, including certain research participation. (T)

6040 Principles of Physics for Middle and High School Teachers. Cr. 4

Prereq: PHY 1020 or 2130 or equiv. or consent of instructor. Open only to middle and high school teachers. Understanding nature in terms of energy and the fundamental forces, including: mechanics, vibrations and waves, heat and thermodynamics, electromagnetism, optics, modern physics and astronomy. (I)

6050 Special Topics in Physics for Secondary-School Educators. Cr. 3

Prereq: introductory physics courses in mechanics, and in electricity and magnetism; or consent of instructor. Open only to pre-college or community college teachers. Special topics in physics designed for secondary teachers. Topics offered as needed; may include: astronomy and cosmology, relativity, quantum theory, atomic and nuclear physics, optics. (Y)

6200 Theoretical Mechanics. Cr. 3

Prereq: PHY 5200 and MAT 2350. Accelerated reference frames, centrifugal and Coriolis forces, rigid body dynamics, motion of tops and gyroscopes, Lagrange's equations, constraints, Lagrange multipliers, general central force problem, stability of orbits, relativistic mechanics. (W)

6300 Quantum Theory. Cr. 3

Prereq: PHY 5300; MAT 5070 and MAT 5220. Presentation of quantum mechanics in a self-consistent manner in which basic principles are introduced directly. The concepts of quantum-mechanical states and amplitudes are clearly established before the introduction of wave functions. (W)

6350 Applied Modern Optics. Cr. 3

Prereq: PHY 5350. Coherent radiation, laser physics and optical devices, optical techniques in experimental science, topics in modern optics. (B:F)

6500 Thermodynamics and Statistical Physics. Cr. 4

Prereq: PHY 3300, MAT 2030. Laws of thermodynamics, thermodynamic equilibrium, applications of kinetic theory of gases, basic introduction to classical and quantum statistical description of physical systems with large numbers of particles. (F)

6600 Electricity and Magnetism II. Cr. 3

Prereq: PHY 5600 and MAT 5070. Electromagnetic radiation, electromagnetic waves, magnetic materials, superconductivity, special relativity, 4-vectors, fields in bounded regions, wave guides, resonant cavities. (W)

6800 Atoms, Molecules and Solids. Cr. 3

Prereq: PHY 5300, 5600, MAT 2350. Study of one-electron atoms using solutions of three-dimensional Schroedinger Equation, magnetic moments, transition rates, multielectron atoms, x-ray excitations, LS coupling, Zeeman and Paschen-Bach effects, molecules, bonds, various types of spectra, solids, conductors, semiconductors, band theory, superconductivity. (F)

6810 Nuclei and Elementary Particles. Cr. 3

Prereq: PHY 6800. Basic understanding of subatomic physics. Modern ideas in nuclear and elementary particle physics; emphasis on common concepts and features. Relationships to experimental results. (W)

6850 (WI) Modern Physics Laboratory I. Cr. 2

Prereq: PHY 5300 or consent of instructor. Techniques and experiments in physics of atoms, atomic nuclei, molecules, the solid state and other areas that have advanced our modern understanding of physics. Material fee as indicated in the Schedule of Classes. (W)

6860 Computational Physics. Cr. 3

Introduction to computational languages and local computational environment; description of techniques in numerical analysis including linear algebra, integration, algebraic and differential equations, data analysis and symbolic algebra; optimization and parallel computing. (B:F)

6890 Modern Physics Laboratory II. Cr. 2

Prereq: PHY 6850. Continuation of laboratory procedures learned in PHY 6850. Further presentation of techniques and experiments in the physics of atoms, atomic nuclei, molecules, solid state physics and other areas of current interest. (F)

6991 Special Topics. Cr. 1-4 (Max. 4)

Prereq: consent of instructor. Offered for S and U grades only. Topics and prerequisites for each section to be announced in Schedule of Classes. More than one section may be elected in a semester. (Y)

6992 Physics Graduate Teaching Assistant Training. Cr. 1

Prereq: graduate standing or consent of instructor. Offered for S and U grades only. Students solve and discuss problems from calculus-based general physics courses in front of their peers and instructor, enhancing their ability to analyze, interpret and present the material in a clear, informative way. (Y)

7050 Elementary Solid State Physics. Cr. 3

Prereq: PHY 6300 or equiv. Contemporary solid state physics dealing primarily with experiments in this area and with modern descriptive models of solids. (F)

7060 Survey of Elementary Particle Physics. Cr. 3

Prereq: PHY 6300 or equiv. Fundamental interactions and the basic particles; introduction to quantum mechanical treatment of decay, scattering, spin, internal symmetries; introduction to quantum field theory; gauge theories; the standard model and proposed modifications; experimental evidence; survey of experimental methods, detector, accelerators and colliders. (W)

7070 Survey of Nuclear Physics. Cr. 3

Prereq: PHY 6300 or equiv. Survey of nuclear decay, nuclear structures, nuclear interactions and reactions, nuclear models, conservative laws and subnuclear particles. (F)

7100 Methods of Theoretical Physics I. Cr. 3

Prereq: MAT 5070 or equiv., or consent of instructor. Techniques for solution of physical problems. (F)

7110 Methods of Theoretical Physics II. Cr. 3

Prereq: PHY 7100. Continuation of PHY 7100. (W)

7200 Advanced Mechanics. Cr. 4

Prereq: PHY 6200 or consent of instructor. Variational principles, central forces, transformation theory, Hamilton-Jacobi theory. (W)

7400 Quantum Mechanics I. Cr. 3

Prereq: PHY 7200 or consent of instructor; coreq: 7100. Schrodinger wave equation, its meaning and solutions as applied to simple physical and chemical problems. Perturbation theory. Theory of atomic collisions, matrix mechanics, transformation theory, angular momentum and spin, theory of measurement. (F)

7410 Quantum Mechanics II. Cr. 3

Prereq: PHY 7400. Continuation of PHY 7400. (W)

7500 Statistical Mechanics. Cr. 4

Prereq: PHY 6500, 7400 or consent of instructor. Classical and quantum statistical mechanics and applications. (B:F)

7550 Solid State Physics I. Cr. 3

Prereq: PHY 7400 or consent of instructor. Crystal structure, elastic constants, introduction to band theory, semiconductors, magnetic properties of materials, optical properties of solids. (B:F)

7560 Solid State Physics II. Cr. 3

Prereq: PHY 7550. Continuation of PHY 7550. (B:W)

7600 Electromagnetic Theory I. Cr. 3

Prereq: PHY 6600 or consent of instructor. Microscopic and macroscopic Maxwell's equations, special relativity, Lagrangian and Hamiltonian formulation of EM theory, energy-momentum tensor, conservation laws, radiation, scattering, applications. (B:F)

7610 Electromagnetic Theory II. Cr. 3

Prereq: PHY 7600. Continuation of PHY 7600. (W)

7990 Directed Study. Cr. 1-3 (Max. 6)

Prereq: consent of adviser, instructor, chairperson of graduate studies committee and graduate officer must be obtained prior to registration. Application forms available in department office. Primarily for graduate students in physics who wish to study material not covered in regular courses. (T)

7996 Research in Physics. Cr. 1-4 (Max. 12)

Prereq: consent of adviser and chairperson of graduate studies committee. (T)

7999 Master's Essay Direction. Cr. 1-3 (3 req.)

Prereq: consent of adviser. (T)

8800 Nuclear Physics. Cr. 3

Prereq: PHY 7070, 7110, and 7410. Research topics in nuclear physics such as: relativistic heavy ion physics, nuclear/nucleon models,

and many body theory. Covers both theory and experimental methods. (W)

8810 Particle Physics. Cr. 3

Prereq: PHY 7060, 7110, 7410. Advanced elementary particle physics including weak, electromagnetic, and strong interactions. Rudiments of experimental devices and techniques at level appropriate to both experimentally- and theoretically-oriented students. (F)

8850 Quantum Theory of Fields I. Cr. 3

Prereq: PHY 7110, 7410. Introduction to quantum field theory with quantum electrodynamics. Renormalization, regularization, Feynman diagrams, applications to scattering processes and bound states. Suitable for both students of theory and experiment in the fields of nuclear, particle, and solid state physics. (B:F)

8860 Quantum Theory of Fields II. Cr. 3

Prereq: PHY 8850. Continuation of quantum field theory. Advanced topics; development of strong, electroweak, and gravitational interactions; other topics. Appropriate for students in fields of nuclear, particle, or solid state physics. (B:W)

8991 Special Topics. Cr. 1-3 (Max. 12)

Prereq: consent of instructor, adviser and chairperson of graduate studies committee. Offered for S and U grades only. Topics and prerequisites for each section to be announced in Schedule of Classes. More than one topic may be elected in a semester. (F,W)

8995 Colloquium. Cr. 1

Offered for S and U grades only. Must be elected every semester by all graduate physics students. Lectures given by visitors, graduate staff and advanced graduate students. (F,W)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of adviser. (T)

9999 Doctoral Dissertation Research and Direction. Cr. 1-16

Prereq: consent of doctoral adviser. Offered for S and U grades only. (T)



PSYCHOLOGY

Office: 71 W. Warren, Room 214; 577-2800

Chairperson: Donald V. Coscina

Associate Chairperson: Hilary Ratner

Administrative Assistant: Lauri Belyk

Professors

Ernest L. Abel, Sheldon Alexander, David Asdourian (Emeritus), Alan R. Bass (Emeritus), Donald N. Elliott (Emeritus), Ira J. Firestone, Joseph M. Fitzgerald, Joseph L. Jacobson, Chris-Ellyn Johanson, Kalman J. Kaplan, M. Marlyne Kilbey, Gisela Labouvie-Vief, Sheldon G. Levy, Hilary Ratner, Annette U. Rickel (Emerita), Gerald Rosenbaum (Emeritus), Carolyn M. Shantz, Laurence J. Stettner, Rebecca A. Treiman, R. Douglas Whitman, Alice M. Young

Associate Professors

George Borszcz, Rita Casey, Kenneth Davidson (Emeritus), Sebastiano Fisicaro, Winifred R. Fraser (Emeritus), Melissa G. Kaplan-Estrin, Brian Lakey, Cary M. Lichtman, Mark Lumley, Michael M. Reece (Emeritus), Patricia Siple, Paul Toro, Kathryn Urberg, Glenn E. Weisfeld

Assistant Professors

Boris Baltes, Douglas Barnett, Rodney Clark, Marcus Dickson, Melissa Franks, Michael Marsiske, Lisa Rapport, Lee Wurm

Research Professor

Sandra W. Jacobson

Research Scientist

Ali Naqvi

Adjunct Professors

Kenneth M. Adams, Naomi Breslau, John H. Hannigan, Mitchell Rosenthal

Adjunct Associate Professors

Antonia Abbey, Gregory Brown, Sandra Jacobson, Mark Ketterer, Helene Lycaki, Daphna Oyserman, Timothy Roehrs

Adjunct Assistant Professors

Linda S. Angell, Bradley Axelrod, Rebecca Baird, Jesse Bell, Michael Butkus, Allan B. Dehorn, Jerel E. Del Dotto, Grenae D. Dudley, Lisa A. Fruchtman, Robert Guenther, Melinda Henderson, Pamela Keenan, Mark Kelland, Joan Lessen-Firestone, Ronald Lewis, Ira Lourie, Scott Millis, John O'Leary, Lynn V. Pantano, Steven Putnam, Kenneth Reeder, Joseph Ricker, Robert Rothermel, William Schafer, Richard Smith, Barry Tanner, Marie Waung

Graduate Degrees

MASTER OF ARTS with a major in Psychology (open only to students admitted to the doctoral program)

MASTER OF ARTS with a major in Psychology: Human Development

DOCTOR OF PHILOSOPHY with a major in Psychology and specializations in biopsychology, clinical, cognitive, developmental, industrial/organizational, and social psychology

Master of Arts in Psychology: Human Development

This program is designed for students whose career goals involve work in early intervention, physical or occupational therapy, infant mental health, parenting, and other human service activities that serve infants, children, adolescents, adults, the aged and their families. *Unlike the Master of Arts with a Major in Psychology, this program is NOT a transitional stage leading to doctoral degree candidacy.*

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Students may enter the program in either the Fall or Winter semester. The application deadline for the Fall semester is June 15 and for the Winter semester, October 15. The general portion of the Graduate Record Examination is required. To obtain more information about this program, contact the Department of Psychology, 71 W. Warren Avenue, Detroit, Michigan 48202 (577-2823).

DEGREE REQUIREMENTS: The Master of Arts in Psychology: Human Development is offered under two options:

Plan A: *Thirty-two credits including an eight-credit thesis.*

Plan B: *Thirty-two credits including a three credit essay.*

Required courses include a practicum, a course in research methods, and a developmental seminar as well as courses in infancy, childhood, adolescence, adulthood and/or developmental assessment. An appropriate course in statistics and a final examination are required of all students pursuing Plan A. Upon the adviser's recommendation, students pursuing Plan B may request a waiver of the oral examination, if they have maintained a 3.5 honor point average.

All course work must be completed in accordance with the regulations of the Graduate School and the College governing graduate scholarship and degrees; see pages 16-30 and 364-366, respectively.

Master of Arts with a Major in Psychology

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16.

Only students who have been admitted to the doctoral program in psychology will be considered for admission to this master's program; hence all candidates are considered as doctoral applicants.

Applicants holding bachelor's degrees, master's degrees, and/or other advanced degrees will be considered for admission. At the undergraduate level, applicants must have earned a 3.0 or better average in psychology courses and in total course work. A minimum of twelve semester credits in psychology is required and must include a laboratory course and a statistical methods course in psychology. Courses in college mathematics and biology and familiarity with computers are highly recommended. The Graduate Record Examination, both general and subject (psychology) portions, is required.

DEGREE REQUIREMENTS

The Master of Arts with a major in psychology is offered only as a Plan A master's program requiring thirty-two credits including an eight-credit thesis. In addition to the thesis, a minimum of twenty-four credits in psychology is required and must include PSY 7150 and two of the following: PSY 7010, 7080, 7090, 7120, 7250, 7400, and 7620.

Emphasis is placed on factual knowledge, theory, and research methods in general psychology. The thesis involves the use of laboratory or field data and must be approved by the adviser and two other members of the graduate faculty selected by the Departmental Graduate Committee. A final oral examination pertaining to the thesis and all courses included in the student's degree program is required.

All course work must be completed in accordance with the regulations of the Graduate School and the College governing graduate scholarship and degrees; see pages 16-30 and 364-366, respectively.

Doctor of Philosophy with a Major in Psychology

Admission: Since the doctoral degree offered by this department is viewed as a continuation of the Master of Arts degree program in psychology, students are expected to earn the M.A. degree as a preliminary stage in doctoral study and should refer to the above section, Master of Arts with a Major in Psychology, for admission requirements. The work of students who hold advanced degrees when they enter this program will be evaluated to determine the extent to which it satisfies the requirements of the M.A. degree in psychology.

Applicants must complete a Psychology Department application form and provide at least three letters of recommendation in addition to the transcripts and application form required by the Graduate School. Appropriate forms and instructions are available from the Graduate Office of the Department of Psychology. Students will not be considered for admission until all of the above have been received and evaluated. All forms for applicants intending to pursue doctoral work are due by January 15. Applicants will be notified of the admission committee's decision on or about April 15.

Scholarship: All course work must be completed in accordance with the regulations of the Graduate School and the College governing graduate scholarship and degrees; see pages 16-30 and 364-366, respectively. All graduate students are expected to maintain at least a 'B' average. Students receiving grades of 'C' in more than two courses will be dropped from the doctoral program. No more than two courses at the 6000 level may be applied toward credit for the doctoral degree.

DEGREE REQUIREMENTS

In order that students may acquire a broad background in the factual and theoretical content of psychology, four substantive courses are required of all doctoral candidates: PSY 7150 and 7160, *plus* one additional quantitative analysis course and two of the following: PSY 7010, 7080, 7090, 7120, 7250, 7400, 7620. Each student is expected to select a major and minor area of specialization from among the following list. (Alternate minor areas may be developed in consultation with relevant faculty, subject to the approval of the Department Graduate Committee.)

BIOPSYCHOLOGY: The biopsychology program offers intensive course work and research training in brain-behavior relationships. Research is concentrated in the areas of the neurochemistry and neuroanatomy of learning and seizure activity, the psycho-pharmacology of drugs of abuse, the neuroanatomy and physiology of aging, developmental behavioral toxicology and teratology, and the neurochemical bases of food intake and body weight regulation. All of these research areas are supported with up-to-date equipment and extensive laboratory space. The biopsychology program is affiliated with the University's interdisciplinary program in the neurosciences.

CLINICAL PSYCHOLOGY: Students in this specialty area take courses in clinical research, psychopathology, assessment methods, and therapeutic interventions. Requirements also include supervised experience in assessment and treatment of clients in practicum courses and during an internship. Special opportunities for training and research in neuropsychology, developmental psychopathology, health, and community psychology are available in the clinical program.

COGNITIVE PROCESSES: Students in this program receive training in basic cognitive research and theory and its application to applied problems. Basic theoretical research focuses on the psychology of language and cognition and memory. Special opportunities for applied research are also available.

DEVELOPMENTAL PSYCHOLOGY emphasizes a life-span approach and provides specialization in cognitive and emotional changes from infancy to old age. Emphasis is on general principles of development, but each student may select an age range for special consideration. For research on young children, the Psychology Department's child development laboratories are available. Cooperative arrangements for research exist with the Merrill-Palmer Institute

and the Institute for Gerontology. Research opportunities with normal and exceptional populations are available.

INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY offers concentration in criterion development, performance evaluation, personnel selection, employee training and development, motivation and morale, leadership and executive development, and employee-management relations. Opportunities exist for field experience in major corporations.

SOCIAL PSYCHOLOGY: This program offers concentration in applied social psychology, attitude theory and change, environmental psychology, small-group behavior, political psychology, sociobiology, social equity, and justice. Opportunities exist for field experience in various agencies and organizations in the community.

Residence: All new doctoral students must enroll for their *first academic year* on a full-time basis. Students must complete at least six three-credit courses, exclusive of research and thesis credits, during the first year. Any incompletes in these six courses must be removed prior to the fall semester of the second year.

Examinations: Final qualifying examinations, which include a research design and methodology portion and a written and oral examination covering both the student's major and minor areas, are required. These are normally taken after completion of the master's thesis and sixty credits in graduate coursework. An oral examination on the dissertation topic is also required upon its completion.

Training, Teaching, and Research: Doctoral students are required to participate in a training assignment each academic year they are in residence. This is required of all full-time students, irrespective of whether the training assignment includes a stipend. The student's area committee is responsible for seeing that this requirement is met each year. The training assignment involves appropriate teaching, research (other than thesis or dissertation research) or professional activities.

Financial Support

General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 30 of this bulletin.

Fellowships, tuition scholarships, internships, and teaching and research assistantships in the Department of Psychology, other departments of Wayne State University, and a variety of cooperating agencies (Henry Ford Hospital, Veterans Administration and other hospitals, and institutions and industrial corporations) are available to qualified students. Information about application procedures is available in the Psychology Graduate Office.

GRADUATE COURSES (PSY)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

5050 Physiological Psychology. Cr. 3

Prereq: PSY 1010 or 1020. Physiological mechanisms underlying behavior and mental processes: sensory-motor mechanisms; integrative action of the nervous system; neuro-physiological mechanisms involved in emotional behavior, learning and memory; influences of hormones on behavior. (F,W)

5060 Laboratory in Physiological Psychology. Cr. 3

Prereq: PSY 3120 or 5050 or consent of instructor. Outline of gross neuroanatomy, basic experiments in physiological psychology utilizing brain lesions, chronic electrode implantations in small animals, and measurement of human autonomic responses. Material fee as indicated in the Schedule of Classes. (Y)

5070 Bio-behavioral Bases of Drug Action. Cr. 3

Prereq: PSY 3120 or 5050 or equiv., or BIO 1020 or equiv.. Physiological and behavioral bases of drug action, with emphasis on brain neurotransmitters, psychopharmacology, and substance abuse disorders. (Y)

5100 Applied Statistics in Psychology. Cr. 4

Prereq: PSY 3010 or equiv. or consent of instructor. General linear model, coding techniques, multiple correlation and regression, analysis of variance and covariance, planned and post hoc tests, use of statistical computer packages. (I)

5280 Psychoanalytic Theory. Cr. 3

Prereq: three courses in psychology. Theories, principles, concepts and applications as developed by Freud and his followers in contemporary times. (I)

5490 The Aging Individual in Society. Cr. 3

Prereq: PSY 1010 or 1020. Biological, social, and psychological theories of aging; time-associated changes in behavior; personality changes in later life; social and personal adjustment and psychopathology in later life. (Y)

5540 Motivation in the World of Work. Cr. 3

Prereq: PSY 1010 or 1020. Relationships among motivation, satisfaction, and organizational behavior. Motivational theory and research; organizational influences on motivation and satisfaction; motivational intervention; survey and evaluation. (Y)

5580 Consumer Psychology. Cr. 3

Prereq: PSY 1010 or 1020. Applications of psychological and general behavioral science principles to understanding consumer and buying behavior; research design, sampling, and data collection techniques of use to marketers and consumerists. (Y)

5630 Group Dynamics. Cr. 3

Prereq: PSY 2600 or consent of instructor. Historical and theoretical development of the "group dynamics" movement and contemporary approaches to conceptualization of small group processes. Communication and power structures, group problem solving, intra- and inter-group conflict and cooperation. (Y)

5680 Social Psychology of Personality. Cr. 3

Prereq: PSY 1010 or 1020. Consideration of social, structural and interpersonal determinants of personality formation, functioning and change; social learning, role theory, and cognitive approaches to personality in children and adults. (I)

5700 (AFS 5700) The Psychology of African Americans. Cr. 4

Prereq: upper division standing. Methodological approaches to and theories of Black behavior and personality development. Topics include: race and pathology, life-span and psycho-sexual development, personality formation, social and environmental stress and adaptation. (B)

5710 (PCS 5000) Dispute Resolution. (CRJ 5994) (P S 5890) Cr. 3

Overview of the processes and sectors in the field of dispute resolution including negotiation, mediation, arbitration, and conciliation. (Y)

5750 Engineering Psychology. Cr. 3

Prereq: PSY 3050, 3090, graduate standing; or consent of instructor. Theory and research on people's interaction with machines and sys-

tems in their environment, within framework of cognitive psychology. Product design and skilled performance. (B)

6200 Development of Memory. (LIN 6200) Cr. 3

Prereq: PSY 3080 and 2400 or equiv.; and consent of instructor for undergraduates. Major theoretical models of memory development will be discussed and used to explore various aspects of the memory process from infancy to adulthood. (I)

6420 Psychology of Infant Behavior and Development. Cr. 3

Undergrad. prereq: PSY 2400 and either 2430 or 2440. Not open to psychology doctoral students. Prenatal development and infancy through the toddler years. Major theoretical positions and research relating to motor, perceptual, cognitive, language, social, and emotional development. Implications for parenting, programming, and care. (Y)

6440 Psychological Development in Childhood. Cr. 3

Prereq: one course in developmental psychology. Not open to psychology doctoral students. Theories of development applied to understanding cognitive, social, and emotional changes in childhood. Empirical tests of these theoretical perspectives examined; research paper required. (Y)

6470 Human Development Practicum: Infancy. Cr. 3

Prereq: satisfactory health record. Orientation to infant research, assessment, and programming. Experience in infant observation and testing within the Psychology Child Development Laboratory. (I)

6480 Psychology of Myth, Magic and Religious Experience. Cr. 3

Prereq: PSY 1010, 2400, or consent of instructor. Theoretical and empirical literature on psychological origins and adaptive functions of myth, magic, and religious experiences in individuals and social groups, both historical and modern. (Y)

6490 Developmental Psychology of Death, Dying and Lethal Behavior. Cr. 3

Prereq: PSY 1010 or 1020. Changing relationship to death and finitude throughout the life-cycle; development and function of death cognitions, factors predisposing toward suicide and other premature deaths at various age levels, and the dying process. (Y)

6530 Organizational Psychology. Cr. 3

Prereq: PSY 3500 or 2600, or graduate standing, or consent of instructor. Not open to psychology doctoral students. Application of principles of social psychology to industrial phenomena. Parameters of organization and criteria of effectiveness: profitability, morality. Classical theories of organization. Power, interaction, conflict, and decision theory applied to industrial corporations and unions. (Y)

6540 Organizational Staffing. Cr. 3

Prereq: PSY 3500 or equivalent industrial/organizational psychology course with consent of instructor. Not open to psychology doctoral students. Job analysis, recruitment and screening, prediction and measurement of job performance, selection procedures, principles and methods of testing and measurement. (Y)

6550 Training and Employee Development. Cr. 3

Prereq: PSY 3500 or equivalent industrial/organizational psychology course with consent of instructor. Not open to psychology doctoral students. Theory and practice of organizational training, employee development, and management development; establishment of performance standards, performance appeal process, evaluation of training and development programs. (Y)

6570 Applied Research Methods in Union-Management Relations. Cr. 3

Prereq: one semester of statistics comparable to PSY 3010. Not open to psychology graduate students. Topics include review of scientific methods and research design, measurement issues, ethical considerations in applied research and data collection techniques such as job analysis, training needs assessment, and opinion surveys. (Y)

6710 Psycholinguistics. (LIN 6710) Cr. 3

Prereq: graduate standing or undergraduates with a strong psychology or linguistics background. Theory and research in various topics in psycholinguistics, including language development, speech perception and production, and language comprehension and memory, discussed within the framework of the behaviorist, generative linguistic and information processing approaches to language. (Y)

6995 Advanced Special Topics. Cr. 1-3 (Max. 6)

Prereq: senior standing; psychology major with 3.0 h.p.a. or honors program seniors. Topics to be announced in Schedule of Classes. (Y)

7010 History of Systems in Psychology. Cr. 3

Prereq: admission to doctoral program in psychology or consent of instructor. Historical background of psychoanalytic theory, behaviorism, gestalt and other theoretical trends in modern psychology; developmental trends, major personalities, and criteria for evaluation of psychological systems. (F,S)

7080 Human Cognition. Cr. 3

Prereq: admission to graduate program in psychology, or consent of instructor. Unified approach to human cognitive activity, including perception, attention, memory, language, concepts, and problem solving. (Y)

7090 Theories of Learning. Cr. 3

Prereq: admission to graduate program in psychology. Systematic examination of learning theories. (Y)

7100 Conceptual Behavior. Cr. 3

Prereq: admission to graduate program in psychology, or consent of instructor. History, theory and recent research in the area of concept development and concept utilization. (I)

7120 Biological Basis of Behavior. Cr. 3

Prereq: admission to the graduate program in psychology or consent of instructor. Major literature relating the anatomy of the nervous system to psychological processes. (Y)

7150 Quantitative Methods in Psychology I. Cr. 4

Prereq: PSY 4100 or equiv. and admission to doctoral program or consent of instructor. Introduction to statistical inference for psychologists. Bivariate measures of relationship and associated statistical tests: chi square, t test, F test and selected rank order tests applied to psychological research. Analysis of variance designs: simple randomized, repeated measures, randomized block, factorial and mixed designs. (F)

7160 Quantitative Methods in Psychology II. Cr. 4

Prereq: PSY 7150. Introduction to multivariate analyses for psychologists. Analysis of covariance, multivariate analysis of variance, multiple regression. Psychometric theory and psychological measurement. (W)

7180 Research Design and Methodology. Cr. 3

Prereq: PSY 7160 or consent of instructor. Offered for S and U grades only. Measurement, design and analysis problems typically encountered in behavioral research. A large set of selected research problems will be considered through student presentations and class discussions. (Y)

7190 (ANA 7190) Neuroscience Survey. (BIO 7190) (I M 7190) (PHC 7190) (PSL 7190) Cr. 3

Offered for S and U grades only. Overview of neuroscience as a multifaceted discipline presented by faculty from the Departments of Anatomy, Biochemistry, Immunology and Microbiology, Neurology, Pharmacology, Physiology, and Psychology. A comprehensive critical essay will be required of the student. (F)

7200 Psychological Assessment I. Cr. 4

Prereq: admission to Ph.D. program in clinical psychology or consent of instructor. Psychometric tests emphasizing reliability and validity. Individual supervision and training in interviewing skills, WAIS, MMPI, selected objective tests, and development of report writing skills. (F)

7210 Psychological Assessment II. Cr. 4

Prereq: PSY 7200. Child intellectual and personality testing, including infant testing; WISC-R, Stanford-Binet, Vineland, CAT and other child projectives. Adult projectives with emphasis on the Rorschach and TAT, and individual supervision in report writing. (W)

7230 Assessment Practicum. Cr. 2

Prereq": admission to Ph.D. program in clinical psychology. Offered for S and U grades only. Clerkship in the Psychology Clinic or in one of the clinics cooperating with the University, emphasizing psychological assessment. Weekly diagnostic case conference. (T)

7240 Ethical Issues in Clinical Psychology. Cr. 1

Prereq: admission to Ph.D. program in clinical psychology. Offered for S and U grades only. Required of all clinical students. Crucial problems in various phases of clinical psychology, research, practice and teaching. Consultant presentations by legal and other experts. (F)

7250 Theory of Personality. Cr. 3

Prereq: admission to graduate program in psychology. Major approaches to the study of personality. Current psychological research and issues in the field; implications for psychotherapy and assessment. (Y)

7300 Psychopathology. Cr. 3

Prereq: admission to Ph.D. program in clinical psychology or consent of instructor. Basic psychological concepts of psychopathology. Current theory and research and their implications for clinical practice. (Y)

7330 Clinical Neuropsychology. Cr. 3

Prereq: PSY 7120 and consent of instructor. History of the development of clinical neuropsychology. Current perspectives of theory and empirical foundations of neuropsychological assessment. (F,W)

7370 Therapeutic Interventions I: Introduction and Theories. Cr. 4

Prereq: PSY 7300 and admission to Ph.D. program in clinical psychology or consent of instructor. Survey of systems of psychotherapy; review of therapy research; introduction to techniques of psychotherapy and behavior therapy. (F)

7380 Therapeutic Interventions II: Advanced Applications and Innovations. Cr. 4

Prereq: PSY 7370. Introduction to child and family therapy techniques; therapeutic interventions with special emphasis on covert sensitization; systematic desensitization; implosion; cognitive restructuring. (W)

7400 Introduction to Life-Span Developmental Psychology. Cr. 3-4

Prereq: admission to graduate program in psychology or consent of instructor. Theory, methods and selected content areas; cognitive and social development as they relate to the entire life cycle. (T)

7430 Early Human Development. Cr. 3

Prereq: PSY 7400 or consent of instructor. Seminar on infancy and early child development. Comparison of ethological, environmentalist, and constructivist approaches to development; use of empirical data to evaluate hypotheses derived from these approaches. Substantive topics drawn from both the socio-emotional and cognitive domains. (I)

7440 Development of Intelligence. Cr. 3

Prereq: PSY 7400 or consent of instructor. Current theoretical perspectives and related research on intellectual development in childhood; topics include cognition, memory, concepts, and language. (I)

7450 Psychology of Social Development. Cr. 3

Prereq: PSY 7400 or consent of instructor. Recent perspectives on the psychological and environmental factors influencing social development; attention to ethological and ecological factors. (I)

7460 Developmental Psychology of Adolescence. Cr. 3

Prereq: PSY740 or consent of instructor. Functional interpretations of physiological, psychological and social changes of adolescence. Biological and anthropological perspectives on sex roles. (I)

7470 Research Strategies for Developmental Psychology. Cr. 3

Prereq: PSY 7160 and 7400 or consent of instructor. Topics relating to developmental psychology, including: selection of measures, assessment of reliability and interviews and questionnaires, experimental methods, multivariate correlational analysis. (Y)

7480 Psychological Development in the Adult Years. Cr. 3

Prereq: PSY 7400 or consent of instructor. A life-cycle approach to the adult years, covering biological, social, and psychological changes with age. Lectures, discussion, and individual research projects on salient issues in adult development. (I)

7490 Developmental Psychology of Later Life. Cr. 3

Prereq: PSY 7400 or consent of instructor. Later years of human life from the perspective of developmental psychology; attention to viewpoints in biology, sociology. Personality structure and phenomenological life, and the possibilities of continuous psychological development. (I)

7500 Research Methods in Industrial Psychology. Cr. 3

Prereq: PSY 7150; admission to doctoral program in psychology or consent of instructor. Required of all first-year students in industrial and organizational program. Analysis of methodology and research design problems in the field of industrial psychology; discussion of professional and ethical problems. (Y)

7510 Criterion Development and Performance Evaluation: Theory and Research. Cr. 3

Prereq: admission to doctoral program in psychology or consent of instructor; prereq. or coreq: PSY 7160 and 7500. Nature and kinds of criteria of job performance; development and measurement of criteria; problems and issues in performance evaluation and appraisal. (Y)

7520 Selection and Placement: Theory and Research. Cr. 3

Prereq: PSY 7510; admission to doctoral program in psychology or consent of instructor. Principles in development and evaluation of employee selection procedures; methods for establishing job-relatedness; problems and issues in evaluation and use of employee selection procedures. (Y)

7550 Psychological Analysis of Organizations. Cr. 3

Prereq: admission to doctoral program in psychology or consent of instructor. Required of all first-year graduate students in industrial and organizational program. Psychological concepts of conformity, role, leadership, communication conflict, decision making and bargaining in organizational behavior. (Y)

7560 Theory and Research on Leadership and Executive Development. Cr. 3

Prereq: PSY 7500; admission to doctoral program in psychology or consent of instructor. Selected leadership research studies; theories relating to leadership; principles of training and development. (Y)

7570 Theory and Research on Industrial Motivation and Morale. Cr. 3

Prereq: PSY 7500; admission to doctoral program in psychology or consent of instructor. Meaning of motivation and incentive as used in industry; research methods for study of motivation, job satisfaction, and morale; research data and interpretations in theoretical frameworks. (Y)

7580 Theory and Research on Organizational Change and Development. Cr. 3

Prereq: PSY 7500, 7550; or consent of instructor. Presentation of the major theoretical approaches and frameworks in the area of organizational development; critical evaluation of the relative effectiveness of organizational interventions based on these approaches. Relevant conceptual, professional, ethical and methodological issues. (I)

7610 Research Seminar in Social Psychology. Cr. 3

Prereq: PSY 7150 and 7620. Research design and methodology in social psychology, focusing on measurement issues, data collection techniques and results interpretation issues in both laboratory and field research settings. (I)

7620 Social Psychology: Research and Theory. Cr. 3

Prereq: PSY 2600 or equiv. Graduate-level introduction to the major theoretical and research areas of social psychology; current issues and research. (Y)

7630 Group Processes. Cr. 3

Prereq: PSY 7620 or equiv. or consent of instructor. Contemporary approaches to research on social influence processes, power structures, conformity processes, and problem solving in the small group; methodology. (B)

7650 Social Psychology of Justice, Equity, and Fairness. Cr. 3

Prereq: PSY 7620 or consent of instructor. Contemporary theory and research on psychology of justice, fairness, and equity in interpersonal, group, and organizational settings. Distributive procedural, interactional, organizational justice. (Y)

7670 Attitude Theory and Attitude Change. Cr. 3

Prereq: PSY 7620 or equiv. or consent of instructor. Review of research and theory relevant to understanding processes of attitude formation and change. Measurement issues and structure of attitudes; role of attitudes in prediction of behavior. (I)

7680 Environmental Psychology and Interpersonal Processes. Cr. 3

Prereq: PSY 7620 or equiv. Theory and research pertaining to transactions between individuals and groups, and the physical environmental context in which they function. (I)

7690 Personality Dynamics and Interpersonal Processes: Models and Research. Cr. 3

Prereq: PSY 7620 or equiv. Study of the influence of personality dynamics on interpersonal processes; for example, the relationship between ego strength and capacity for intimacy. Interpersonal distancing theories are stressed. (I)

7990 Directed Study. Cr. 1-9 (Max. 9)

Prereq: written consent of instructor, adviser and graduate officer. For students who wish further study of technical literature of a problem systematically reviewed in a preceding course. Intensive and systematic reading of original literature (particularly journals) dealing with topic or problem. (T)

7996 Research Seminar in Clinical Psychology. Cr. 1

Prereq: admission to the Ph.D. program in clinical psychology. Introductory seminar for first year students in clinical psychology. Both semesters required. (F,W)

7997 Research Problems. Cr. 1-6 (Max. 18)

Prereq: written consent of instructor and adviser. Original research under direction of departmental staff. Final written report and examination. (T)

7998 Field Practicum in Psychology. Cr. 1-6 (Max. 12)

Prereq: admission to graduate program in psychology. Not open to students in Clinical Psychology Training Program; only four credits count toward Ph.D. degree. Practicum experience in an approved training facility. Supervision by faculty members. (T)

7999 Master's Essay Direction. Cr. 1-3

Prereq: consent of adviser. Not open to doctoral students. (T)

8060 Advanced Physiological Psychology. Cr. 4

Prereq: PSY 5050 and consent of instructor. Physiological correlates of behavior. Contemporary literature and techniques used in psychophysiological research in areas of learning, motivation, perception. (Y)

8070 Psychopharmacology. Cr. 3

Prereq: PSY 7120 or equiv., or consent of instructor. Psychological and biological bases of psychopharmacology; emphasis on preclinical models and development of treatments for psychological disorders. (B)

8080 Seminar in Biochemistry and Behavior. Cr. 3

Prereq: consent of instructor. Influence of drugs, hormones, and endogenous chemical processes on behavior; current research in endocrinology, neuroendocrinology and neuropsychopharmacology. (Y)

8150 Multivariate Analysis in Psychology. Cr. 3

Prereq: PSY 7160 or consent of instructor. Extension of the general linear model to multivariate statistical techniques, including: exploratory factor analysis and principal components analysis, confirmatory factor analysis, discriminant function analysis, canonical correlation analysis, and multivariate analysis of variance. (Y)

8160 Advanced Experimental Design. Cr. 3

Prereq: PSY 7160 or consent of instructor. Block designs; Latin squares designs and fractional replications; quasi- and semi-experimental designs; analysis of covariance; analysis of variance for unbalanced designs; generalizability theory; log linear models, meta analysis and validity generalization; other current topics. (Y)

8330 Advanced Clinical Neuropsychology. Cr. 3

Prereq: PSY 712, PSY 7330, consent of instructor. History, research methodologies and current theories regarding brain-behavior relationships and neurological dysfunction. (Y)

8340 Clinical Neuropsychological Assessment. Cr. 3

Prereq: PSY 7210, 7330, 8330; admission to A.P.A. departmental clinical training program. Review of principles and literature on neuropsychological assessment, common neuropsychological tests and test batteries, in context of actual clinical cases. (Y)

8350 Community Psychology. Cr. 3

Prereq: consent of instructor. Current findings, theory, and research in the field of community psychology. Emphasis on current urban problems. (I)

8390 Therapeutic Intervention Practicum. Cr. 1-6 (Max. 12)

Prereq: PSY 7380. Offered for S and U grades only. Weekly group case conference supervised by qualified therapists; video and tape recorded case sessions presented to supervisor in individual case conferences. (T)

8400 Current Issues in Developmental Psychology. Cr. 3 (Max. 9)

Prereq: consent of instructor. Integrative seminar in current theoretical and empirical issues. (Y)

8500 Seminar in Industrial/Organizational Psychology. Cr. 2-3 (Max. 9)

Prereq: consent of instructor. For industrial psychology students. Current topics in industrial psychology; content varies. (I)

8600 Seminar in Experimental Social Psychology. Cr. 3 (Max. 9)

Prereq: PSY 7620 or equiv. or consent of instructor. Review and evaluation of the literature on some current topic of research or theoretical concern. (Y)

8680 Seminar in Physiological Psychology. Cr. 3 (Max. 9)

Prereq: consent of instructor. Critical examination of contemporary research on selected topics concerned with relationships between physiological mechanisms and behavior. (Y)

8720 Seminar in Cognitive Processes. Cr. 3 (Max. 15)

Prereq: consent of instructor. Literature on special topics in human cognition including reading, speech perception, attention and memory. (Y)

8740 Seminar in Psychological Measurement and Statistics.
Cr. 3 (Max. 9)

Prereq: PSY 7160. Topics in measurement and statistical analysis; exploratory data analysis and related problems; multidimensional scaling and clustering techniques; time series analysis; analysis of longitudinal data; item response theory and tailored testing; statistical power. Current topics such as structural equation modelling. (I)

8760 Seminar in Clinical Psychology.
Cr. 1-3 (Max. 12 for psychology majors)

Prereq: consent of instructor. New clinical methods and scientific developments in the field of clinical psychology. Meets with continuing education seminars in clinical psychology. (T)

8810 Program Evaluation. Cr. 3

Prereq: PSY 7150, 7160 and consent of instructor.. An introduction to the theories and methods of program evaluation in such areas as community psychology, mental health systems, criminal justice systems. (I)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of adviser. (T)

9999 Doctoral Dissertation Research and Direction.
Cr. 1-16 (30 req.)

Prereq: consent of doctoral adviser. Offered for S and U grades only. (T)

School of Social Work

DEAN: Leon W. Chestang

Foreword

Social Work

The School of Social Work at Wayne State University has as its mission the teaching of the knowledge, values, and skills of the social work profession. Graduates of the School should understand the needs of vulnerable populations and those for whom the quality of life is threatened. Through research, the faculty of the School contributes to the knowledge base of the social work profession. Faculty and students serve the community by participating in professional societies, civic and community groups, and human service organizations.

The School of Social Work is an integral part of Wayne State University, an urban university in a culturally diverse, industrialized, metropolitan area. The School is committed in its teaching, research, and service activities to address the problems of people living in this environment. Both in class and in the human service organizations which are the sites for field education, students learn how to provide effective social services and to influence social policies.

The School's activities are intended ultimately to alleviate the condition of those affected by poverty, racism, sexism, homophobia, unemployment, and those with emotional disturbances, or physical or developmental impairments, or both. Students learn methods of intervention with individuals, families, groups, communities, and organizations. Consistent with its emphasis on serving people in the Detroit metropolitan area, the School shares with the University a commitment to recruiting students of minority ethnic backgrounds.

Accreditation

The undergraduate program leading to the Bachelor of Social Work degree and the graduate program leading to the Master of Social Work degree are accredited by the Council on Social Work Education, the authorized accrediting body for social work education.

Programs

The School of Social Work offers opportunity for study at the undergraduate and graduate levels to prepare students for practice in the profession. Its principal programs lead to the Bachelor of Social Work degree and the Master of Social Work degree. The Master of Social Work degree program prepares graduates for advanced professional practice in social work. This program includes concentrations in community practice and social action; family, children, and youth services; health care services; and mental health services. A lower division course is available to all students. Post-degree courses are available to those who have been awarded the bachelor's and master's degrees. The School offers a Graduate Certificate Program in Social Work Practice with Families and Couples. The School conducts special institutes and workshops for persons working in the field of social welfare. Continuing education in social work is also offered through the College of Lifelong Learning.

Information Meetings: The School holds information meetings every two weeks on its undergraduate and graduate programs. Potential applicants are encouraged to attend one of these meetings prior to making application. Information about the schedule of meetings may be obtained by calling the School's Office of Admissions and Student Services (313-577-4409).

Graduate Degree and Certificate Programs

MASTER OF SOCIAL WORK

GRADUATE CERTIFICATE PROGRAM IN SOCIAL WORK

PRACTICE WITH FAMILIES AND COUPLES

School Social Work Approval Program

Students in the program leading to the Master of Social Work degree may qualify concurrently for Department of Education temporary approval for social work positions in Michigan school districts. Specific information on approval requirements for students and M.S.W. graduates may be obtained from the Office of Admissions and Students Services, School of Social Work.

SCHOOL OF SOCIAL WORK DIRECTORY

DEAN

201 Thompson Home; Telephone: 577-4400; Fax: 577-6555

ASSOCIATE DEAN

240 Thompson Home; Telephone: 577-4404; Fax: 577-8770

GENERAL INFORMATION

105 Thompson Home; Telephone: 577-4409

ADMISSIONS AND STUDENT SERVICES

105 Thompson Home; Telephone: 577-4409; Fax: 577-4266

BACHELOR OF SOCIAL WORK PROGRAM COORDINATOR

236 Thompson Home; Telephone: 577-4433

MASTER OF SOCIAL WORK PROGRAM COORDINATOR

237 Thompson Home; Telephone: 577-4408

FIELD EDUCATION COORDINATOR

144 Thompson Home; Telephone: 577-4479

RECRUITMENT OF MINORITY STUDENTS

105 Thompson Home; Telephone: 577-4409

STUDENT ORGANIZATION

32 Thompson Home; Telephone: 577-1639

NATIONAL ASSOCIATION OF BLACK SOCIAL WORKERS - WSU

32 Thompson Home; Telephone: 577-1639

STUDENT ORGANIZATION: LATINO/LATINA SOCIAL WORKERS

32 Thompson Home; Telephone: 577-1639

Mailing address for all offices: School of Social Work, Thompson Home, 4756 Cass, Wayne State University, Detroit, Michigan 48202.

FACULTY and ADMINISTRATION

Dean: Leon W. Chestang
Associate Dean: Phyllis I. Vroom
Assistant to the Dean: Mary Anne Cotton
Director of Admissions: Cecille Y. Dumbrigue
Academic Services Officer: Janet M. Clerk
M.S.W. Academic Adviser: Anwar Najor-Durack
Administrative Officer: Edrene R. Teahan
Assistant to Administrative Officer: Juanitta D. Hill

Professors

Creigs C. Beverly, Jerrold Brandell, Leon W. Chestang, David P. Moxley

Associate Professors

Beverly Black, Ronald L. Jirovec, Alice E. Lamont, Brenda McGadney, Durrenda Onolemhemen, Carolyn Pryor, Melvyn C. Raider, Anna M. Santiago, Sue M. Smock, Mavis M. Spencer, Zulema Suarez, Eileen Trzcinski, Phyllis I. Vroom, Susan Whitelaw

Assistant Professors

Ann Alvarez, Loren J. Hoffman (Clinical), Christine Hyduk, James Tripp (Clinical), Arlene Weisz, Annette Woodroffe

Senior Lecturer

Margaret O. Brunhofer

Lecturers

Roxanne Barzone, Cecille Y. Dumbrigue, Lois Garriott, Anna Genus, Sally Jo Large, Anwar Najor-Durack

Instructor

Charlla Allen

Emeriti Professors

Sidney Dillick, Joseph P. Hourihan, Charles N. Lebeaux, Leon Lucas, Maryann Mahaffey, Betty Rusnack, Betty Welsh

Emeriti Associate Professors

Helen Francis, Theodore Goldberg, Edna S. Harrison, Carl Hartman, Edna P. Miller, Elizabeth J. Phillips, Lois L. Quig, Marian I. Reavey, Sandy G. Reid, Kurt Spitzer

Adjunct Professors

C. Patrick Babcock, Paul A. Koonter, Robert M. Wills

MASTER OF SOCIAL WORK

The School offers full-time and part-time study programs leading to the Master of Social Work degree. This program prepares graduates for advanced professional practice in social work. The full-time degree program consists of four semesters of study in which field work is concurrent with class work. Students spend three full days a week in the field and two days in classes for two consecutive years. Required classes in the full-time program may be offered in day, evening, and Saturday sessions.

The part-time program permits students to complete degree requirements over a four-year period. Part-time study is open only to students who have been formally admitted to the program by the Admissions Director. Details of the several phases of class and field work involved in this program, as well as specific information on admissions requirements, may be obtained from the Office of Admissions and Student Services, School of Social Work.

ADMISSION

Applications for admission for full-time or part-time study in the program leading to the Master of Social Work degree may be submitted as early as one year in advance of the term in which the student wishes to enter the School. Applications are reviewed only when all supporting materials have been received. New students admitted into the core year of the Master of Social Work degree program are enrolled in September. Applications and all supporting materials for the full-time or part-time program beginning in September must be submitted by **February 28**. Applications received after that date cannot be guaranteed processing. Applications and all supporting materials for admission with advanced standing must be submitted by **January 31**. Applications received after that date cannot be guaranteed processing.

Applicants to the full-time or part-time program leading to the Master of Social Work degree must: (1) complete and forward to the Office of University Admissions, Wayne State University, the *Application for Graduate Admission*; (2) submit to the Office of University Admissions, Wayne State University, directly from their college or university, official transcripts of all credits previously earned, whether in one or several educational institutions; (3) complete and forward to the School of Social Work, Office of Admissions and Student Services, the completed form, *Application for Admission to Graduate Study, School of Social Work*, and related materials; (4) have completed thirty semester credits in academic work, distributed in the social and biological sciences, and in the humanities; (5) show evidence to the Director of Admissions of the School of Social Work of suitability and fitness for the profession and the ability to undertake successfully graduate professional education in social work. Experience in the social services is given greater weight in the decision for admission to the part-time program. The responsibility for deciding whether a student shall or shall not be admitted rests with the School. An applicant who wishes a review of an admissions decision may obtain specific information on the procedure for review from the Office of the Dean, School of Social Work.

NOTE: Students who have already been admitted to and registered in the Graduate School of Wayne State University should omit steps one and two above and should have sent directly to the School of Social Work, Office of Admissions and Student Services, official transcripts from their college or university of all credits previously earned, whether in one or several institutions. Students should request that an adviser's copy of their Wayne State University transcript be sent from the University Records Office, 1 West, Joy Student Services Center, to the School of Social Work, Office of Admissions and Student Services.

Applications for admission to the School of Social Work for the program leading to the Master of Social Work degree are given careful review in order to select those students best able to fulfill the requirements for professional education in this field.

Admission with Advanced Standing

An applicant for admission to the Master of Social Work degree program who holds a baccalaureate degree from an undergraduate social work program accredited by the Council on Social Work Education, if admitted, shall be given advanced standing. The responsibility for deciding whether the holder of a baccalaureate degree from an accredited undergraduate social work program shall or shall not be admitted to the graduate program rests with the School.

An applicant for admission to the program leading to the Master of Social Work degree who holds a baccalaureate degree from an undergraduate social work program accredited by the Canadian Association of Schools of Social Work (CASSW) may be admitted and given advanced standing as an exception to the general rule that only graduates of undergraduate programs accredited by the Council on Social Work Education may be considered for admission.

Applications and all supporting materials for admission with advanced standing must be submitted by January 31. Applications received after that date cannot be guaranteed processing.

Students admitted to advanced standing are required to complete seven graduate credits toward the M.S.W. degree during the summer term following admission, and subsequently an additional thirty credits in the advanced curriculum of the graduate program, as prescribed within the student's concentration. The summer term curriculum for these students is: S W 7070 (Interpersonal Concentrations) or S W 7200 (Community Practice and Social Action Concentration), S W 7500, and S W 7998. Students must complete the following summer curriculum before enrolling in courses in the advanced curriculum:

Credits

S W 7070 or S W 7200	
— Social Work Practice with Individuals, Families, and Groups	2
— Social Work Practice with Organizations and Communities	2
S W 7500 — Psychosocial Adaptation	2
S W 7998 — Field Work	3
Total:	7

Students admitted to advanced standing who request and receive a practicum in a school setting, will defer three credits of summer term field work to the following winter term.

A limited number of students admitted to advanced standing may be permitted to complete the requirements for the Master of Social Work degree on a part-time basis. Students admitted to such a planned part-time program are required to complete seven graduate credits toward the M.S.W. degree during the summer term immediately following admission. The additional thirty credits may be completed in subsequent semesters. The School does not grant credit for life experience or previous work experience.

Transfer of Graduate Credits

Credits for professional social work courses earned at other graduate programs accredited by the Council on Social Work Education may be accepted toward the Master of Social Work degree. Students, however, must meet all of the specific course requirements or equivalencies in the program leading to the Master of Social Work degree at this School. A maximum of thirty credits may have been completed in another accredited school of social work. Transfer students must be in good standing in the school from which they transfer, must meet all other requirements of this School, and earn a minimum of thirty credits at this School, and must be in residence during the final semester prior to graduation.

A maximum of six graduate credits from the social work curriculum or from curricula closely related to social work earned in an accredited graduate program may be accepted toward the Master of Social Work degree if, in the judgment of the faculty, the credits are appropriate as elective credits in the social work curriculum. Students who elect the Community Practice and Social Action Concentration will have reduced credits for electives, from six to three credits.

Transfer credit must be of a 'B' grade or better and certified as graduate level credit on an official transcript. Courses approved for transfer

from outside or within the University cannot have been applied as credit toward a prior degree. Extension credits earned at other than Michigan institutions cannot be applied toward a graduate degree.

Transfer credits do not alter the residency policy and time limitations governing School of Social Work degrees. Students may petition for the transfer of graduate credit only after they have been admitted to the M.S.W. degree program.

Withdrawal from the B.S.W. and M.S.W. Programs

A student who has been admitted to the Bachelor of Social Work or the Master of Social Work degree program shall be considered to have withdrawn from the program if the student is not enrolled in a course and/or field work during any semester of a planned program of study within the framework of the plan which has been approved. In order to terminate in good standing, students who withdraw from any degree program permanently or temporarily, for whatever reason, must formalize their withdrawal with the Director of Admissions. A copy of the procedure for withdrawal may be obtained from the Office of Admissions and Student Services, School of Social Work.

Readmission

Students who had been enrolled in a planned program leading to the Master of Social Work degree, who have withdrawn from the program and who wish to be considered for readmission to complete degree requirements, must follow regular procedures for admission to the School. Generally, students are required to complete two continuous terms of field work; readmitted students who had previously completed one term of field work will be required to repeat this term, and may be required to enroll concurrently in a course or courses in social work practice methods.

Admission to Non-Degree Study

Students may enroll in certain classes as pre-master's registrants and will be permitted to accumulate a maximum of twelve credits in this status. Pre-master's students may not enroll in the field work courses and certain other courses in which specific prerequisites and/or corequisites preclude their registration. If the student is subsequently admitted to a program leading to the Master of Social Work degree, credits earned in a pre-master's classification may be applied toward the degree.

Applicants for pre-master's, non-degree study must hold a baccalaureate degree from a college or university of recognized standing and have completed a minimum of thirty semester credits of academic work distributed in the social and biological sciences and in the humanities.

Applicants must: (1) complete and forward to the Office of University Admissions, Wayne State University, the *Application for Graduate Admission*, indicating non-degree status in the School of Social Work; (2) arrange to have official transcripts of all credits previously earned (whether in one or several educational institutions) submitted directly from their college or university to the Office of University Admissions, Wayne State University.

Students applying for pre-master's study in the School of Social Work who have already been admitted and registered in the Graduate School of Wayne State University should consult the School of Social Work Office of Admissions and Student Services regarding the procedure for a change of college and/or status.

DEGREE REQUIREMENTS

The Master of Social Work degree requires a minimum of sixty credits of graduate course work, completed in accordance with the regulations of the Graduate School and the School of Social Work; see pages 16-30 and 414, respectively. The program includes a core curriculum at the first level, and at the second level, one of four concentrations: Community Practice and Social Action; Family, Children and Youth Services; Health Care Services; and Mental Health Services. The core curriculum provides the foundation for the advanced curriculum.

Students may complete the master's degree requirements by successfully completing S W 8810, Research Seminar, or S W 8996, Group Project Research and Direction, under Plan C; or complete a six-credit individual thesis, under Plan A. (See master's degree requirements, page 27.)

Core Curriculum

The core curriculum is structured to provide the knowledge, values, and skills that are essential for beginning practice of social work as well as a base from which the core content may be extended into advanced concentrations. In the core curriculum, emphasis is placed on the integration of content in the five major curricular areas: social work practice, human behavior and the social environment, social welfare policy and services, research, and field education. The core curriculum stresses fundamentals and knowledge of social work practice as they relate to individuals, families, small groups, organizations, and communities. In field education, theory is translated into practice and includes experiences for students in interpersonal practice and practice in organizations and communities.

Credits

S W 7040—Methods of Social Work Practice I	2
S W 7050—Methods of Social Work Practice II	4
S W 7060—Laboratory in Methods of Social Work Practice	1
S W 7560—Human Behavior in the Social Environment I	3
S W 7660—Human Behavior in the Social Environment II	2
S W 7720—Introduction to Social Welfare in the United States	3
S W 7820—Research Methods in Social Work I	2
S W 7830—Research Methods in Social Work II	3
S W 7998—Field Work for Social Workers	10

Total: 30

During the core year, students declare their interest for an advanced curriculum concentration. Students must complete the core curriculum before enrolling in advanced curriculum courses.

Advanced Curriculum

The advanced curriculum builds on the knowledge, values, and skills gained in the core curriculum, with the objective of increasing the student's competence to deal with greater complexities of social work practice through a focus on areas of social concern. This advanced portion of the M.S.W. degree program is designed to provide specific knowledge and practice skills.

Credits

Advanced Practice Methods courses ¹ (three credits are concentration specific)	6
Human Behavior and Social Environment course (concentration specific)	2
Social Welfare Policy Analysis and Formulation course (concentration specific)	3
S W 8810 and 8820—Research Seminar ²	3
S W 7998—Field Work for Social Workers (concentration specific)	10
Electives	6

Total: 30

Students must meet the requirements for a concentration by: (a) satisfactory completion of a specific concentration course in the curricular areas of: human behavior and the social environment, social welfare organization and policy services, and practice methods; (b) satisfactory completion of a field education placement in the concentration for each of the semesters of the advanced curriculum. Students choose one of the following four concentrations:

1. Students who elect the Community Practice and Social Action concentration will be required to take an additional two-credit course each semester which will reduce credits for electives from six to three. Students in the Community Practice and Social Action Concentration must select S W 8820.

2. Students may elect a four-credit group research project (S W 8996) or a six-credit individual thesis (S W 8999) in lieu of the three-credit Research Seminar.

Community Practice and Social Action focuses on interventions in social agencies, institutions, and neighborhoods of the community and society to enhance the quality of life. Community Practice and Social Action students will be in practicums which relate to urban social planning, community development, comprehensive community mental health planning and development, coordination and planning for the aged, juvenile justice, social change, and political internships. Examples of sites for social work employment include community-based organizations, social welfare planning agencies, planning departments in governmental units, advocacy organizations, political offices, and human resource departments.

Family, Children and Youth Services include interpersonal services related to families who may be experiencing problems ranging from the expected strains of family life to serious dysfunction resulting in abuse, neglect, and separation of family members. Examples of sites for social work employment include family service agencies, schools, family mediation clinics, and specialized children's services.

Health Care Services include interpersonal services to people as they cope with illness, disease, disability, or trauma. Social workers are engaged in work at all levels of prevention: health promotion, specific protection, diagnosis and treatment, disability limitation, and rehabilitation. Examples of social work employment in health care services include such settings as acute and rehabilitation hospitals, home health care, and maternal and child health clinics.

Mental Health Services include interpersonal services to populations who may experience a range of problems from mild adjustment reactions to severe psychoses, emotional crises pertaining to transitions such as loss of a job, divorce, or death of a loved one, issues in the workplace, and the chronicity of institutionalization requiring after-care services. Students planning to work with chemically dependent clients or who plan to attend to the human and social needs of the workplace community should enroll in this concentration. Examples of social work employment in mental health services include outpatient clinics, short-term residential care in general and mental hospitals, community placements, transitional residences, sheltered workshops, after-care treatment centers, private practice settings; employee assistance programs and personnel services within industrial, corporate and human service organizations such as hospitals and schools, as well as in contracted programs external to the workplace; and mental health planning agencies.



GRADUATE CERTIFICATE PROGRAMS

— Interdisciplinary: Alcohol and Drug Abuse Studies, Developmental Disabilities, Gerontology, Infant Mental Health

Students in the program leading to the Master of Social Work degree may also participate in the following graduate certificate programs: 1) alcohol and drug abuse studies, offered in cooperation with the Addiction Research Institute; 2) infant mental health, offered in cooperation with the Merrill-Palmer Institute; 3) gerontology, available through the Wayne State University Institute of Gerontology; and 4) developmental disabilities, offered in cooperation with the Developmental Disabilities Institute. Students will be required to take courses beyond the sixty credits required for the Master of Social Work degree in order to meet the requirements. Work to complete a graduate certificate program extends beyond the time necessary to fulfill Master of Social Work degree requirements. Specific information for these certificates may be found in the University Centers and Institutes section, beginning on page 34.

— School of Social Work: Social Work Practice with Families and Couples

The Social Work Practice with Families and Couples Certificate Program is designed to provide current knowledge and skills for social work practice in the Detroit metropolitan area. Research and practice innovations also will be explored. Historically, social workers have worked with families affected by social injustice and adverse conditions; this is a legacy of the profession. These families encounter difficult problems, fueled by issues such as poverty, racism, substance abuse, and domestic violence.

Admission: Applicants must meet the admissions standards of the Graduate School (see page 16) and the School of Social Work (see page 407). Eligibility for this certificate is limited to persons holding a Master of Social Work (M.S.W.) degree or persons actively enrolled in the advanced portion of the M.S.W. program.¹ For students currently enrolled in the degree and certificate programs, only nine of the seventeen graduate credits required for the certificate may be applied toward the M.S.W. degree. Work to complete a graduate certificate program extends beyond the time necessary to fulfill Master of Social Work degree requirements. Application materials and information may be obtained from the Office of Admissions and Student Services, School of Social Work.

Certificate Requirements: Candidates for the certificate must hold a Master of Social Work degree, achieve a minimum honor point average of 3.0, and complete seventeen credits in designated graduate courses. These courses include offerings in social work theory, social work practice, and social work ethics. The certificate must be earned within three years of entering the program. All course work must be completed in accordance with the regulations of the Graduate School and the School of Social Work; see pages 16-30 and 414, respectively.

<i>Required Certificate Curriculum</i>	<i>Credits</i>
THEORY:	
SW 8540 — Family Theory	2
SW 8550 — Social Functioning: Human Sexuality	2
SW 8780 — Social Work: Families in a Multi-Ethnic, Multi-Cultural Society	3
PRACTICE:	
SW 8610 — Advanced Interpersonal Practice with Families	3
SW 8620 — Advanced Interpersonal Practice in Marital Therapy	2
SW 8790 — Social Work Practice with Diverse Family Structures	3
ETHICS:	
SW 8710 — Seminar on the Profession of Social Work	2

1. Individuals holding a master's degree in a related human service field may be permitted to enroll in some graduate certificate courses with the approval of the Graduate Officer, School of Social Work; these individuals may not apply for the graduate certificate.

Graduate Courses (S W)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 507.

- 5720 Social Services for the Aged. Cr. 2-3**
Identification, description and analysis of the problems of the aged; development of social work services to meet their needs. (Y)
- 5880 (SOC 5880) Family Violence: Intervention. Cr. 1-2**
Prereq. or coreq: SOC 5870. Open to PACT students; others by consent of instructor. Application of theory and intervention techniques in the family experience of maltreatment. (Y)
- 6440 (SOC 6440) Urban Family Intervention. Cr. 1**
Prereq. or coreq: SOC 6430. Open to PACT students; others by consent of instructor. Application of theory and practice technique in the helping process of urban, minority families in poverty. (Y)
- 6460 (SOC 6460) Family-Based Intervention Techniques. Cr. 4**
Open to PACT students; others by consent of instructor. Appropriate theories and strategies for working with families on an in-home basis to change family interaction, child-rearing patterns, health practices and management behavior. Focus on high-risk, urban families. (Y)
- 6500 Social Work and the Law. (ULM 6600) Cr. 2**
Study of the relationship between law and social work practice. Emphasis on understanding the legal processes, the relationship and interdependence of law and social work practice and the knowledge and skill needed to help integrate law into social work practice. (W)
- 6510 Social Work and the Black Community. (AFS 6510) Cr. 2**
An examination of the variety of points of view and trends within the black community as a background for social work assessment and intervention. (Y)
- 6540 Effects of Drugs and Alcohol on Social Functioning. Cr. 2**
Prereq: senior or graduate standing. Types of substances most frequently abused, their effects on physiological, psychological and social functioning, and patterns of use among different age groups and populations. (T)
- 6550 Social Work Issues in the Work Place. Cr. 2**
The nature and causes of occupational stress and other work-related behavior; existing and needed social work services in work settings, union programs, and community social agencies. (Y)
- 6560 Social Work and Sexual Orientation. Cr. 2**
Prereq: senior or graduate standing. Theories of human behavior that relate to sexual orientation; impact of gay, lesbian, bisexual sexual orientation on social functioning; transference and counter-transference issues and homophobia, assessment of their impact on practice and policy. (Y)

6720 Social Services in Schools. Cr. 2

Structure and history of education in relation to social work and school social work practice; implications of current legislation; the roles of social work in relation to emerging patterns of education; trends and issues and implications for practice. (F,S)

6991 Special Topics in Social Work. Cr. 2-4

Topics of current interest to be announced in Schedule of Classes. (F,W)

7010 Intervention Strategies in Infant Mental Health. Cr. 1

Prereq: consent of instructor. Intervention strategies to enhance normal infant development as an aspect of parenting skills. (F,S)

7040 Methods of Social Work Practice I. Cr. 2

Coreq: S W 7060 and 7998. Basic principles of social work practice with emphasis on initial phases of service, including exposure to the range of practice theories and interventions used by social workers. (F)

7050 Methods of Social Work Practice II. Cr. 4

Prereq: S W 7040 and 7060; coreq: 7998. Emphasis on practice issues with people and institutions as they cope with stress associated with life transitions and social change. Focus on middle and ending phases of service, and including content on family, group and community modalities. (W)

7060 Laboratory in Methods of Social Work Practice. Cr. 1

Coreq: S W 7040 and 7998. Analysis of student experiences in the practicum with individuals, families, and groups in their environments; use of simulations, videotapes, role-playing, and discussions. (F)

7070 Social Work Practice with Individuals, Families and Groups. Cr. 2

Prereq: B.S.W. degree and admission to a planned program in School of Social Work. Methods, techniques and strategies for problem-solving in social work practice. Assistance with transition to the graduate program. (S)

7200 Social Work Practice with Organizations and Communities. Cr. 2

Prereq: B.S.W. degree and admission to planned program in School of Social Work. Methods, techniques, and strategies for problem-solving in social work practice with organizations and communities. Assistance with transition to graduate program. (S)

7500 Psychosocial Adaptation. Cr. 2

Prereq: B.S.W. degree and admission to planned program in School of Social Work. Integration of biological, psychological and social perspectives on human behavior within a psychosocial frame of reference, as background for assessment and intervention. (S)

7510 Topical Seminar in Developmental Disabilities. Cr. 1-2

Prereq: consent of instructor. Current and emerging issues pertaining to the delivery of services to people with developmental disabilities. (Y)

7560 Human Behavior in the Social Environment I. Cr. 3

Open only to students admitted to a planned program in the School of Social Work. Development of the individual from prenatal period through adolescence using an ecological perspective. Emphasis on individual's interaction with the immediate and distant environments relative to risks and opportunities in developing competence, identity and relatedness in social functioning. (F)

7570 Psychosocial Functioning of Women. Cr. 3

Open only to students admitted to a planned program in School of Social Work. Ecological perspective on development, life crises, problems, dysfunction, and treatment issues for women. Knowledge presented to inform social work practice, policy and research regarding women. (Y)

7580 Application of Behavioral Modification Theory to Interpersonal Helping. Cr. 2

An examination of behavior modification theory with emphasis on the specific adaptability of the theory to social work practice. (Y)

7590 Developing Responsive Human Service Organizations. Cr. 2

Analysis of human service organizations; emphasis on designs sensitive to the characteristics and values of commodities. Consumerism, multicultural and diversity factors and their relation to access and utilization. (F)

7600 Advocacy in the Practice of Social Work. Cr. 3

Prereq: S W 7050 or 7070 or M.S.W. degree; coreq: 7998 or M.S.W. degree, or consent of instructor. Advocacy in social work: history, ethics, models, personal and organizational issues; skill development in application organizationally in understanding and supporting individuals and evaluating outcomes. (Y)

7660 Human Behavior in the Social Environment II. Cr. 2

Prereq: S W 7560. Open only to students admitted to a planned program in the School of Social Work. A socio-cultural perspective of human development within families and groups. Study of the social functioning and lifestyles of diverse ethnic populations, and minority and oppressed groups. These are viewed as an expression of the groups' unique socio-cultural values, norms, and beliefs within evolving social policies and societal change in the United States. (W)

7720 Introduction to Social Welfare in the United States. Cr. 3

Historical development of social welfare viewed dynamically as a function of social, economic, political and cultural transitions. Evolution of professional social work. Framework of analysis for social welfare programs and agencies. (Y)

7820 Research Methods in Social Work I. Cr. 2

Open only to students admitted to a planned program in School of Social Work. First of two courses focused on basic concepts and methods of scientific inquiry as utilized in building knowledge for social work practice. (Y)

7830 Research Methods in Social Work II. Cr. 3

Prereq: S W 7820. Second of two courses focused on basic concepts and methods of scientific inquiry as utilized in evaluating service delivery and in enhancing the performance of social work practitioners. (Y)

7990 Directed Study. Cr. 1-4 (Max. 4)

Prereq: written consent of adviser and graduate officer. Individual direction in reading and research on selected topics. (T)

7998 Field Work for Social Workers. Cr. 1-10 (Max. 25)

Coreq: one course in a social work method. Offered for S, M and U marks only. Open only to M.S.W. students. The ratio of clock hours to credits is 64 to 1. Practicum of M.S.W. program integrated with courses in social work method, human behavior and the social environment, social welfare organization and policy, and research. Field placements assigned by Coordinator of Field Education. (T)

8070 Application of Practice Theories in Interpersonal Practice. Cr. 3

Prereq: S W 7050 or 7070; coreq: 7998. Presentation and analysis of theoretical orientations guiding social work practice with individuals, families and groups. (Y)

8200 Seminar for Field Instructors. Cr. 1-2

Prereq: M.S.W. degree. Open only to current field instructors. Concepts related to field instruction: determining objectives, developing a contract and plan of work, use of resources and structured formats to enhance the educational process, and criteria and procedures for evaluation. Emphasis on the functions and responsibilities of the field instructor, and coordination of field and classroom teaching. (Y)

8250 Application of Models of Community Practice I. Cr. 3

Prereq: S W 7050 or 7200; coreq: 7998 and consent of instructor. Models of community development and community work and translation of these into practice approaches; preparation for practice in institutions, neighborhoods, and communities. (F)

8260 Application of Models of Community Practice II. Cr. 2

Prereq: S W 7050, 8250; coreq: 7998. Continuation of S W 8250; community development and community work. (W)

8270 Resource Development in Community Practice. Cr. 2

Prereq: S W 7050 or 7200; coreq: 7998. Resource development approaches and integration into community and organizational practice. Budgeting within context of organizational and program development. (F)

8280 Planned Change in Community Practice and Social Action. Cr. 2

Prereq: S W 7050 or 7200; coreq: 7998. Examination of models, typologies and strategies of planned change in communities, institutions, organizations and society. (W)

8290 Seminar in Social Administration. Cr. 2

Prereq: S W 7050 or 7070 or 7200 or M.S.W. degree. Administrative and organizational practice in human services; new forms of management in context of social welfare administration in public nonprofit and for-profit sectors. (Y)

8300 Policy Change and Social Action. Cr. 2

Prereq: S W 7050 or 7070 or 7200 or M.S.W. degree. Social policy development at state, local, and federal levels; use of policy to achieve community development aims. (Y)

8310 Community Practice with Vulnerable Populations. Cr. 2

Prereq: S W 7050 or 7070 or 7200 or M.S.W. degree. Constructs of vulnerability and risk applied to community practice with populations whose development is sensitive to the quality of community life: children, the elderly, the disabled. (Y)

8330 Psychosocial Assessment of Children and Youth. Cr. 3

Prereq: S W 7830 or advanced standing in M.S.W. program, or M.S.W. degree. Holistic approach to assessment of children and youth; focus on objective testing and rating scales. (T)

8510 Psychopathology in Children. Cr. 2

Prereq: S W 7500 or 7660. Basic concepts of psychopathology within a genetic and dynamic view of child development from birth through adolescence, as a background for social work intervention. (Y)

8520 Psychopathology: Psychoneurotic Reactions and Personality Disorders. Cr. 2

Prereq: S W 7500 or 7660. Psychoneurotic reactions and personality disorders in adults as background for social work assessment and intervention. (F)

8540 Family Theory. Cr. 2

Prereq: S W 7500 or 7660 or M.S.W. degree; coreq: 7998. Family theory as a background for learning family diagnosis and treatment. (T)

8550 Social Functioning: Human Sexuality. Cr. 2

Prereq: admission to a planned program in the School of Social Work, or M.S.W. degree. Human sexuality as it affects individuals in their relationships to others in terms of development, orientation and dysfunction. (T)

8560 Children with Educational Disabilities and their Families. Cr. 2

Prereq: admission to a planned program in the School of Social Work or M.S.W. degree. Identification of educational disabilities; understanding of impact on children and families. Programs and services to remediate disabilities and assist students and families. (Y)

8570 Families, Children and Youth: Problems in Social Functioning. Cr. 2

Prereq: S W 7500 or 7660 or M.S.W. degree. Ecological perspective used to understand the etiology of child maltreatment, including parental and child characteristics, family interaction patterns, societal stressors, environmental deprivation, and cultural beliefs and attitudes. Possible points of intervention for prevention or treatment are identified. (F)

8580 Health and Disease: Impact on Social Functioning. Cr. 2

Prereq: S W 7500 or 7660 or M.S.W. degree. Study of biological, psychological, social, and environmental factors which influence the

promotion of health, the diagnosis and treatment of disease, rehabilitation, disability limitation, and the termination of life. (F)

8590 Application of Behavioral Interventions in Interpersonal Practice. Cr. 2

Prereq: S W 7050 or 7070 or M.S.W. degree; coreq: 7998 or M.S.W. degree. Behavioral applications to interpersonal helping, including operant and respondent conditioning approaches, cognitive restructuring, systematic desensitization, relaxation training, and assertive training applied to practice with individuals, families and groups. (Y)

8600 Advanced Interpersonal Practice in Group Treatment. Cr. 2

Prereq: S W 7050 or 7070 or M.S.W. degree; coreq: 7998 or M.S.W. degree. Creation and implementation of therapeutic group services; worker roles, group properties and development, and common challenges in group treatment. (Y)

8610 Advanced Interpersonal Practice with Families. Cr. 3

Prereq: S W 7050 or 7500 or M.S.W. degree; coreq: 7998 or M.S.W. degree. Application of interpersonal practice theories in working with families throughout life cycle of the family, from formation to termination; transitional phases experienced by its members; obstacles to normal growth and development. Practices employed by social workers in family practice field, application of working paradigm for interpersonal practice in variety of settings. (Y)

8620 Advanced Interpersonal Practice in Marital Therapy. Cr. 2

Prereq: S W 7050 or 7070 or M.S.W. degree; coreq: 7998 or M.S.W. degree. Application of interpersonal practice theories in marital therapy utilizing behavioral and social science content in relation to marriage, the functional and dysfunctional aspects of marital relationships and their effects on the couple and other affected family members. (Y)

8640 Interpersonal Practice in Aging. Cr. 2

Prereq: S W 7050 or 7070 or M.S.W. degree; coreq: 7998 or M.S.W. degree. Presentation and application of interpersonal practice theory in social work with aging persons. Social science and behavioral content applicable to elderly persons and their social/institutional milieu. (Y)

8650 Interpersonal Practice with Children. Cr. 3

Prereq: S W 7050 or 7500 or M.S.W. degree; coreq: 7998 or M.S.W. degree. Current theories applied to practice methods and techniques with preschool and latency-age children and adolescents and their families. Communication, assessment and intervention skills explored. (Y)

8660 Social Work Practice Methods in the Workplace. Cr. 3

Prereq: S W 7050 or 7500 or M.S.W. degree; coreq: 7998 or M.S.W. degree. Theories of organizational and interpersonal social work interventions in the workplace, designed to identify and deal with needs of employees with work-related and/or mental health or family problems. Special problems such as substance abuse, needs of working mothers, minorities in the workplace. (Y)

8670 Interpersonal Practice in Health Care. Cr. 3

Prereq: S W 7050 or 7500 or M.S.W. degree; coreq: 7998 or M.S.W. degree. Current theories applied to a variety of social work interventions to meet the needs of clients and populations-at-risk in health care; impact of health care organizational settings on service delivery. (Y)

8680 Interpersonal Practice in Mental Health. Cr. 3

Prereq: S W 7050 or 7500 or M.S.W. degree; coreq: 7998 or M.S.W. degree. Current theories about mental illness and application to social work treatment methods with clients in mental health settings. Direct and indirect intervention techniques and the use of support systems. (Y)

8690 Interpersonal Practice in Substance Abuse. Cr. 3

Prereq: S W 7050 or 7500 or M.S.W. degree; coreq: 7998 or M.S.W. degree. Application of interpersonal practice theories to social work interventions with substance abuse related problems; procedures

and strategies for assessment and planning; methods of intervention with individuals, families, and groups; prevention and education. (Y)

8700 Interpersonal Practice and Sexual Orientation. Cr. 2

Prereq: S W 6560, 7050, or 7070; or M.S.W. degree; coreq: 7998 or M.S.W. degree; or consent of instructor. Relevant theories; diagnostic tools; treatment techniques; skills in coordinating resources and services; and/or for changes in organizations and policies in work with gays, lesbians, and bi-sexuals. (Y)

8710 Seminar on the Profession of Social Work. Cr. 2

Prereq: S W 7050 or 7070 or 7200. Graduate seminar on social work as a profession. Articulation of professional practice issues in such areas as: competencies, standards, professional organization, social sanction, ethics, autonomy, accountability, interprofessional practice, social action. (W,S)

8720 Family, Children and Youth Services: Policy Analysis and Formulation. Cr. 3

Prereq: S W 7050 or 7070 or 7200. Components of social welfare program and policy analysis and formulation illustrated by content derived from the field of services for family, children and youth, including guardianship, family-based services, protective services, foster care, adoption, day care, school and youth employment, income security, and child advocacy at various system levels. (Y)

8730 Health Care Services: Policy Analysis and Formulation. Cr. 3

Prereq: S W 7050 or 7070 or 7200. Components of social welfare program and policy analysis and formulation illustrated by content derived from the field of health care services. (Y)

8740 Mental Health Services: Policy Analysis and Formulation. Cr. 3

Prereq: S W 7050 or 7070 or 7200. Components of social welfare program and policy analysis and formulation illustrated by content derived from the field of mental health services. (Y)

8760 Occupational Social Services: Policy Analysis and Formulation. Cr. 3

Prereq: S W 7050 or 7070 or 7200. Components of social welfare program and policy analysis and formulation illustrated by content derived from the field of occupational social services. (Y)

8780 Social Work with Families in a Multi-Ethnic, Multi-Cultural Society. Cr. 3

Prereq. or coreq: S W 8540. Examination of the major family therapy models and social work theories in social work, incorporating an expanded view of recognizing biculturalism and a dual perspective of specific minorities (e.g., Arabs, Asians, Blacks, Hispanics, Native Americans and other subcultures). (Y)

8790 Social Work Practice with Diverse Family Structures. Cr. 3

Prereq. or coreq: S W 8610. Advanced application of theories and conceptual frameworks for change to social work intervention with diverse family structures. (Y)

8810 Research Seminar. Cr. 3

Prereq: S W 7830 or admission to advanced standing in School of Social Work. No credit after S W 8850, C M 7850 or SOC 7850. Review and analysis of selected social work research studies to sharpen research utilization skills. (T)

8820 Action Research in Community Practice. Cr. 3

Prereq: S W 7830 or admission to advanced standing in School of Social Work. No credit after S W 8850, C M 7850, or SOC 7850. Action research models and their relevance to problem formulation and identification, planning and development, implementation of responses to problems, and evaluation of effectiveness and impact. (Y)

8850 (SOC 7850) Seminar in Applied Gerontology. (C M 7850) Cr. 3

Prereq: completion of three gerontology courses, consent of instructor. Open only to students in gerontology or community health services M.S. program. No credit after S W 8810. Approaches to

evaluation of applied research in gerontology from multi-disciplinary perspective. Topics include: research design, program evaluation methods, assessment of research related to multi-disciplinary facets of applied gerontology. (Y)

8991 Advanced Special Topics in Social Work. Cr. 2-4

Prereq: S W 7050 or 7070, or M.S.W. degree; coreq: 7998 or M.S.W. degree; or consent of instructor. Topics of current interest for students in advanced year of M.S.W. program. Topics to be announced in Schedule of Classes. (T)

8996 Group Project Research and Direction. Cr. 1-4 (4 req.)

Prereq: S W 7830 or admission to advanced standing in School of Social Work. (T)

8999 Master's Thesis Research and Direction. Cr. 1-6 (6 req.)

Prereq: S W 7830 or admission to advanced standing in School of Social Work. (T)



ACADEMIC REGULATIONS

For complete information regarding academic rules and regulations of the Graduate School, students should consult the section of this bulletin beginning on page 16. The following additions and amendments pertain to the School of Social Work.

Students in the School of Social Work are responsible for informing themselves of all rules, regulations, and requirements, complying with all official policies and procedures, and fulfilling all course and degree requirements in proper sequence with satisfactory scholarship. The student should consult the Academic Services Officer or the M.S.W. Academic Adviser concerning any academic matter. Students should consult the Academic Services Officer or the M.S.W. Academic Adviser when developing a *Plan of Work* or selecting electives. The primary responsibility for counseling with the Academic Services Officer or Academic Adviser and for seeking information on policies, procedures, degree requirements, and all academic matters rests with the student.

The faculty of the School of Social Work has the responsibility to require a student to withdraw at any time prior to receipt of the degree when, in its judgment, the student fails to do satisfactory work. Such decisions may be based on deficiencies in performance in class or field or in personal fitness for the profession. The faculty has adopted a set of criteria and procedures for academic termination. Every effort is made to assist students whose work suffers as a result of conditions beyond their control such as personal illness, serious illness in the immediate family, or similar emergencies.

Scholarship

To be awarded a Master of Social Work degree, the student must achieve an overall grade point average of 3.0. At the discretion of the faculty, a student whose grade point average falls below 3.0 may be permitted to graduate after passing an oral examination. An oral examination may be required of any student at the discretion of the faculty.

Degree Application

Application for the degree must be filed no later than on the first day of classes for the semester in which students expect to complete the requirements for the degree. Candidates must be recommended for the degree by the faculty. Candidates are requested and expected to attend the commencement at which the degree is conferred.

Time Limitation

Students have a nine-year time limit to complete requirements for the Master of Social Work degree. The nine-year limit begins at the end of the last term in which the student was enrolled.

Attendance

Students are expected to attend all sessions of courses for which they are registered and to notify the instructor or the instructor's secretary prior to the class session, if possible, when the student may be absent due to illness or similar emergency. Each instructor may specify an attendance policy in the course syllabus, and announce it at the beginning of a course. Consistent or extended absences may jeopardize the student's grade in the course.

Field Education

All students enrolled in S W 7998, Field Work for Social Workers, are required to carry professional liability insurance as a condition of field placement. The Field Education Manual contains a description of the field education program, and the policies and procedures related to the program. Students are responsible for observing the procedures governing field work practice which are detailed in the manual. The Field Education Manual is distributed to each student enrolled in S W 7998, Field Work for Social Workers.

Field Education Health Clearances Policy

The School may require students in field placement to obtain assessments of their physical or mental health from health or mental health professionals approved by the School. The School of Social Work reserves the right to refuse to place or direct a student in field education if the physical or mental health status of the student indicates such action is warranted in order to safeguard clients, agencies, the student, other students, or the School.

Non-Discrimination and Equal Opportunity

The School endorses and is bound by the University policy on non-discrimination and equal opportunity (see page 9) in its operation, employment opportunities, educational programs, admissions policy, and related activities. The School does not discriminate against persons because of their political orientation.



FINANCIAL AID

General sources of financial aid for graduate students may be found in the section on Graduate Financial Aid, beginning on page 30 of this bulletin.

Scholarships, fellowships and other financial aids are available to social work students on a limited basis. The School expects students to utilize their own resources as much as possible to cover educational costs, and financial aid through University resources should be considered as supplementary. For additional information, inquiries should be directed to the School of Social Work Office of Admissions and Student Services.

Applications for student aid are evaluated by the University Office of Scholarships and Financial Aid based on financial need as reflected in the information provided by the students and/or their families on the appropriate forms. All requests for applications should be sent to the Office of Scholarships and Financial Aid, Wayne State University. Information on Guaranteed Student Loans may be obtained by contacting that Office. Students seeking graduate and professional scholarships should consult the Graduate School.

When financial aid is necessary, the School of Social Work will cooperate with the University Office of Scholarships and Financial Aid to develop the best possible student aid plan from the various scholarships, stipends, grants, or loans available. Such financial assistance will not be assigned or awarded until the student has confirmed his or her intention to enroll after being notified of admission. Some awards are administered directly by the School of Social Work Office of Admissions and Student Services. Contact this office for specific information about the application process, forms, and deadlines. The following scholarships and awards apply to the School:

Dean's Scholar Program. Full tuition scholarship awarded on the basis of outstanding academic achievement and on student's urban commitment and willingness to assist the Dean in the recruitment and retention of minority students.

Elizabeth N. Brehler Memorial Scholarship. Award of \$1,000 for manuscript competition. Students submit a seven- to ten-page paper on social work values and practice to be judged by a panel of faculty and students.

Patricia L. Dillick Memorial Scholarship. Merit scholarship of variable amount, for graduate students with a high academic achievement record.

Annette Sniderman Freedman Scholarship. Award of \$500 based on scholastic achievement, and history of efforts to return to school after an interruption in education, such as to raise a family.

Fred and Freda Gentsch Scholarship. Award of variable amount, based on merit and financial need.

Harold and Carolyn Robison Scholarships. Award of variable amount, made on the basis of academic achievement and financial need.

School of Social Work Alumni Association Scholarships. Award of variable amount, made on the basis of merit and financial need.

School of Social Work Scholarship. Awarded on the basis of scholastic achievement, character, leadership, and financial need.

Maldo Talick Memorial Scholarship: Award of variable amount based on merit and financial need.

Shirley P. Thrasher Memorial Scholarship: Award of variable amount given on the basis of academic achievement, financial need and history of service to minority and vulnerable populations.

Mary Turner Scholarship. Award of variable amount, made to female students on the basis of academic achievement and financial need.

Ella Zwerdling Memorial Scholarship. Award of \$1000 based on evaluation of M.S.W. thesis according to standards of thesis approval, including originality, adequacy, accuracy, significance, methodology, justification of conclusions, and correctness of style.

SCHOOL ACTIVITIES

Student Organization

The Student Organization is a vital component of the programs of the School of Social Work. In existence since 1949, it is the student's voice in matters regarding School and profession. It is involved with School issues as well as broader educational and social concerns. All students currently enrolled in undergraduate or graduate programs in the School of Social Work are members of the Student Organization. A student newspaper, biweekly meetings, social and recreational activities, assistance in attendance at relevant conferences, and participation in the National Association of Social Workers are among student activities.

National Association of Black Social Workers

The Wayne State University School of Social Work student chapter of the National Association of Black Social Workers is identified as NABSW-WSU. This student association involves itself in educational, research, and community service activities on a year-round basis. NABSW-WSU assists black and African American students in making the adjustment to the School of Social Work and provides students with supportive educational services. NABSW-WSU also works closely with the Detroit Chapter of the National Association of Black Social Workers (NABSW) in sponsoring forums, luncheons, conventions, and fund raising events, as well as a schedule of social and leisure time activities.

Student Organization for Latino/Latina Social Workers (S.O.L.A.S.W.)

The Student Organization for Latino/Latina Social Workers is the organization of students in the School who are interested in Latino/Hispanic affairs. The objectives of S.O.L.A.S.W. are to increase the number of Latino/Hispanic students and faculty in the School, to integrate the Latino/Hispanic experience into the School's programs and academic setting, to link the Latino/Hispanic community with the School, and to provide a Latino/Hispanic-related student forum in the University community. Membership in the S.O.L.A.S.W. is for students of Latino/Hispanic origin, but others with interest may join the group with affiliation status.

Special Interest Groups

Each year there are students with special interests who organize themselves into student activity groups around their interests, such as groups for gay/lesbian/bisexual students, Jewish students, Christian students, and Arab/Chaldean students.

Alumni Association

The Alumni Association serves to enhance School and professional identification. To this end, the Association publishes a newsletter, sponsors forums, institutes and workshops that encourage professional development, conducts special activities in support of the work of the School, and promotes fellowship among alumni, faculty and students through its social programs. It also provides scholarships and financial support to the School through fund-raising efforts. Graduates are informed about one another and the School of Social Work through the Association's newsletter.

FIELD EDUCATION

The following agencies and persons have worked with members of the Faculty in field instruction during the academic year 1996-1997:

ACCESS: Nancy Adadow-Gray

AGAPE HOUSE: Arthur Antisdell

AGENCY FOR JEWISH EDUCATION: Bruce Friedman, Howard Gelberd

AIDS PARTNERSHIP MICHIGAN: Martha Kerr, H. C. Millbourne

ALLEN PARK PUBLIC SCHOOLS: Noreen Brohl

AMERICAN RED CROSS: Dorthaer Norwood

ARBOR HOSPICE: Janet Simon

ASSOCIATION FOR RETARDED CITIZENS: Luanne DeGuissippe, Maryann Fenwick

AURORA COMMUNITY PROGRAMS: Stephanie Anderson, Cynthia Kohler

AURORA YOUNG ADULT SERVICES: Mary Roxburg, Marilyn Sanders

BARAT HUMAN SERVICES: Pam Cuthbert

BAY MEDICAL CENTER: Elizabeth Vietti

BEAUMONT HOSPITAL: Linda Caudry-Bess, Robert Dale, Dolores Reese, Sarajane Schafer

BIG BROTHERS/BIG SISTERS: Leslie Cole, Tracy Frentz, Judy Geisler, Candy Hivika, Joe Szykowski, Cynthia Williams

BLACK FAMILY DEVELOPMENT: John Andrews, Carolyn Fuller, Joanne Perry-Stokes, Alice Thompson, Dana Whitney

BLACK UNITED FUND OF MICHIGAN, INC.: Brenda Rayford

BON SECOURS NURSING CARE CENTER: Coleen Giniel, Kathy Kilgus, Tracy Turpin

BOTSFORD HOSPITAL: Michael Morey, Alma Skillon

BOYS AND GIRLS REPUBLIC: Noreen Haggerty, Maryjane Peck

BOYSVILLE OF MICHIGAN: Ed Overstreet

BRIGHTMOOR COMMUNITY CENTER: Peter Lisiecki

BUENA VISTA SCHOOL DISTRICT: Sherry Baron

BURTON CENTER: Vince Little

CSS OF FLINT: Barbara Jubar

CSS OF MONROE CO.: Barry Eitel

CSS OF OAKLAND CO.: Marsha Moran-Saket

CSS OF ST. CLAIR CO.: Edward Cieslinski, Mary Faulkner

CSS OF WAYNE CO.: Sondra Forest, Kevin Meyers, Randall Vorhees

CAMP OAKLAND YOUTH PROGRAMS, INC.: Carol Teachworth

CAREGIVERS: Ladora Barnett

CARING MANAGEMENT: David Ballenberger, Cassandra Bowers

CATHOLIC SERVICES OF MACOMB: Patricia Finn

CATHOLIC YOUTH ORGANIZATION: Michael Chateau

CENTER FOR HUMAN RESOURCES: Laurie Goetze, Kate Powell

CHILDREN'S CENTER OF WAYNE CO.: Martha Bauman, Robin Bromley, Allison Kaye, Josette Lucci

CHILDREN'S HOME OF DETROIT: Yoliswa N. Akpan, Martha Maxwell, Margareta Olsson

CHILDREN'S HOSPITAL OF MICHIGAN: Shirley Gray

CHIPPEWA VALLEY SCHOOLS: Charlene McGunn

CHRIST CHILD HOUSE (THE): Amy Peckham, Julia Winston

CLINTON VALLEY CENTER: Ronald Baranski, Mary Bergman, Peggy Kurz, Vivian Malleck, Brenda Mitchell

COMMON GROUND: Marcy Haney

COMMUNITIES IN SCHOOLS INC., DETROIT: Monica Schmit

COMMUNITY CARE SERVICES: Bill Walsh

COMMUNITY HUMAN SERVICES, INC.: Mark Loush

COMMUNITY SERVICES OF OAKLAND: Paula Hampton

CORNELL CENTER: Jane Diehl

CRESTWOOD SCHOOL DISTRICT: Barbara Speranza

CROSSROADS OF MICHIGAN: Eileen Karrer, Susan Silverest-Bonan

DETROIT BOARD OF EDUCATION: Diane Hurst, Harriet Kirk, Faustina Loper, Jackie Marshall, David Sanderson, Vikkie Tucker, Ken Warren

DETROIT CITY COUNCIL: Sara Gleicher, Joyce Henderson

DETROIT HEALTH DEPARTMENT: Arletha Kerns, Olivia Ramsey, Vernice VanHook

DETROIT INSTITUTE FOR CHILDREN: Debra Springfield

DETROIT PSYCHIATRIC INSTITUTE (DPI): Kathrine Gamma, Carrie B. Patterson, Elliot Rosen

DETROIT RIVERVIEW HOSPITAL: Hardish Verma

DETROIT SENIOR CITIZENS HOMELESS COORDINATION: Barbara Fisher-Mays

DETROIT - WAYNE COUNTY CMH: Odeather A. Hill

DEVELOPMENT CENTERS, INC.: Lynn Deyell, Steven S. Nims, Joyce Pringle, Susan A. Reynolds, Barbara Zolondek

DIVERSIFIED YOUTH SERVICES, INC.: Tonya Fleming, Toni Proby, George Winn

DON BOSCO HALL: Eleanor Quails

DOWNRIVER COMMUNITY SERVICES, INC.: Penny Hader

DOWNRIVER GUIDANCE CLINIC: Carol Oleksiak, Mark Small

EAST CHINA TOWNSHIP SCHOOL DISTRICT: Linda Rebert-Breckner

EASTWOOD COMMUNITY CLINIC: Peggy Andreovich, Steve Candella, Donna Dilloway, Tammie Glenn, Don Healy, Robin Kahler, Margaret Little, Rosalie Schwartz, Carol West

EASTWOOD MANAGED CARE: Sandra Monast

EASTWOOD/OXFORD NETWORK OF CARE: Penny Sakis

ENNIS CENTER FOR CHILDREN: Melissa Gibbs

EVERGREEN CHILDREN'S SERVICES: Rosemary Insley, Shirley Yopp-Skelton

FAIRLANE BEHAVIORAL SERVICES: Cheryl Anderson-Smith, Francis Biondo, Karen Jordan, David Peradatto, Carlos Ruiz

FAMILY INDEPENDENCE AGENCY: Vaira Rozentals, Patricia R. Smith

FAMILY SERVICE OF DETROIT AND WAYNE COUNTY: Jeffrey Cape, Renae Flack, Carl Herrell, Sylvia Thompson

FARMINGTON AREA COUNSELING: Sheri Kaplan

FARMINGTON PUBLIC SCHOOLS: Lynn M. Levin

FIRST STEP: Judith Barr

FITZGERALD PUBLIC SCHOOLS: Michelle Edery, Polly Hardy

FLINT ODYSSEY HOUSE, INC.: William Harshman

FRANKLIN-WRIGHT SETTLEMENTS, INC.: Shirley C. Flannigan

GARDEN CITY HOSPITAL: Karen Neuman

GENESEE COUNTY CMH SERVICES: Paul Johnson, Susan MacPherson, Gail Stimson

GIRLSTOWN FOUNDATION, INC.: Mitchell Rosenzweig

GRACE HOSPITAL: Rosemary Bell, Barbara Tunstall

HAVEN: Barbara Domina, Jeanne Fry, Claudia Nafsu, Renee Rathke, Margaret Yellin

THE HARBOR: Sally Curry

HARPER HOSPITAL: Barbara Broesamle, Betty Brown, Paul Halloway, Mary Kraft, Debra McNamara, Nancy Nichols

HARPER HOUSE: Cynthia Reynolds

HEALTH MANAGEMENT SYSTEMS OF AMERICA: Dwight Vander, Helaine Zack

HEART OF THE CITY CAREGIVERS: Sandy Marchi, Patricia Tomich

HENRY FORD CONTINUING CARE: Marla Ruhana

HENRY FORD COTTAGE HOSPICE: Diana Tomezak

HENRY FORD HEALTH SYSTEMS - BEHAVIORAL SERVICES: Larry Campbell, Darhyl Garrett, Marie Gougeon, Christy Miller, Sylvia Oglesby, Kathy Ransome

HENRY FORD HOME HEALTH CARE: Marla Hull

HENRY FORD HOSPICE: Mary St. Clair

HENRY FORD HOSPITAL: Joan Ellis, Suzanne Hyama-Ross, Kevin Larry, Madelyne Markowitz, Pamela Theisen

HENRY FORD MIDDLE SCHOOL: Anna Genus

HIGHLAND PARK SCHOOL DISTRICT: Odevia Brown

HOLT CENTRAL HIGH SCHOOL: Karlene J. Gehler

HOLY TRINITY SOCIAL SERVICES: Sister Annette Zipple

HOPE, UNITY AND GROWTH (HUG): Maisha Kenyatta

HOSPICE OF SOUTHEASTERN MICHIGAN: Elena Cripple, Mary Murphy, Virginia Palge, Delphine Tessmar, Teri Thoman

HUNGER ACTION COALITION FOR SOUTHEAST MICHIGAN: Nida Donar

I HAVE A DREAM FOUNDATION: Hartford Smith, James Tripp

THE INFORMATION CENTER, INC.: Sam Manzo

INTERNATIONAL INSTITUTE : Valerie White

JEWISH FAMILY AND CHILDRENS' SERVICE: Susan Wasserman

JEWISH FAMILY SERVICE: Jan Bayer, Carolyn Davidson, Judy Kotzen, Mindi Silver-Weiss, Ellen Yashinsky

JEWISH FEDERATION APARTMENTS: Karen Amber, Steve Popkin, Andrea Rosner, Sandy Smith

JUDSON CENTER: Marn Myers

KADIMA: Janette Shallal

LAPEER COUNTY CMH CENTER: Lauren J. Emmons

LIVONIA PUBLIC SCHOOLS: Tonia Busch

LULA BELLE STEWART CENTER: Marilyn Baum, Ruth Brownstein, Debra Dreon

LUTHERAN CHILD AND FAMILY SERVICES - BAY CITY: Gordon Kukulis, Mary-Lou Stewart

LUTHERAN CHILD AND FAMILY SERVICES OF MICHIGAN: Kirk Bradford, Sue Henderson, Edna Walker

LUTHERAN SOCIAL SERVICES OF MICHIGAN: Marion McCarthy, Mary Lane

MACOMB COUNTY CMH: George Stouter

MACOMB FAMILY SERVICE: Owen Pfaendtner, Alice Ruopp

MACOMB HOSPITAL CENTER: Georgia Beltz, Patricia Gibbs, Sandra Wing, Maryann Woodard

MACOMB INTERMEDIATE SCHOOL DISTRICT: Nadine Lovell, Phyllis O'Brien

MADISON COMMUNITY HOSPITAL: Elaine Baugh

MAXEY TRAINING SCHOOL: Linda Schwartz

MCLAREN HOSPICE SERVICES: Mary Lou Martin

MCLAREN REGIONAL BEHAVIORAL HEALTH CENTER: Lois Barnett, Patricia Johns

MERCY HOSPITAL OF DETROIT: Marilyn Cohen, Kim Gusse, Jane Savoy

METHODIST CHILDREN'S HOME SOCIETY: Karen Webb

MICHIGAN SUPPORTED EDUCATION RESEARCH PROJECT: Phyllis Levine

MIDLAND-GLADWIN CMH SERVICES: Michael DuRussell

MONROE COUNTY INTERMEDIATE SCHOOL DISTRICT: Sherry Gearhart, Nancy Scott

MOSAIC YOUTH THEATRE: Annette Madias

MT. CLEMENS GENERAL HOSPITAL: Angel Marsiglio

NEW CENTER CMH SERVICES: Gerald Caughey, Roberta Sanders, Sharon Worth

NONPROFIT ENTERPRISE AT WORK: Kathy Fahi

NORTHEAST GUIDANCE CENTER: Cheryl Coleman

NORTHVILLE PSYCHIATRIC HOSPITAL: Patricia Green

NORTHVILLE PUBLIC SCHOOLS: Carolyn Pryor

OAKLAND COUNTY CHILDREN'S VILLAGE: Clarence Craft, Suzanne P. Farran, Theresa Krolczyk

OAKLAND FAMILY SERVICES: Rosellen Loye, Julie Mison

OAKLAND-LIVINGSTON HUMAN SERVICE AGENCY: Cecelia Livingston

OAKWOOD HOME CARE SERVICES: Cheryl Morris, Regina Vezosi

OAKWOOD HOSPITAL: Kathleen Haack

OCCUPATIONAL HEALTH CENTERS OF AMERICA, INC.: Michael Hamlin

ORCHARDS CHILDREN'S SERVICES: Trudy Fortino, Kathleen Ott

OXFORD AREA COMMUNITY SCHOOLS: Anthony Bronzo, Fern Fosgate

PARENTS AND CHILDREN TOGETHER (PACT): Perry Ohren

PONTIAC AREA URBAN LEAGUE: Cassandra Nelson-Pruitt

PONTIAC SCHOOL DISTRICT: Jessica Woods

PORT HURON HOSPITAL: Patti Sullivan

PROPELLED THERAPEUTIC SERVICES: Cecelia Wallace

PROVIDENCE CANCER CENTER: Kathleen Hardy

RAPE COUNSELING CENTER: Althea Grant

REHABILITATION INSTITUTE: Sandy Bohanon, Patrick Donnellon, Eric Drown

RESTORATION TOWERS: Betty Roberts

ROSE HILL CENTER, INC.: James Speir

ROYAL OAK SCHOOLS: Nancy Adair, Sid Kardon, Phil McPeck, Dayle Prinstein, Mary Sutton

SAGINAW GENERAL HOSPITAL: Arletta Kushion

ST. CLAIR COUNTY CMH: Denni Lesinski, Tim Wittstock

ST. CLAIR COUNTY FAMILY INDEPENDENCE: Ivan Benedict

ST. JOSEPH MERCY HOSPITAL: Deb Moffat, Lawrence Voight

SALVATION ARMY HARBOR LIGHT: Michael Wolf-Branigin

THE SANCTUARY : Barbara Broesamle, Steve Overstreet, Ann Serra

SHUMARD COUNSELING, PC: Lisa Schneider

SINAI HOSPITAL: Carol Babb, Smith Claire, Rose Hirsch, Deanna Lautner, Judy Nowinski, Ramona Rukstele

SOUTHFIELD PUBLIC SCHOOLS: Karen Weiner

SOUTHGATE COMMUNITY SCHOOL DISTRICT: Beverly Baroni-Yeglic, Barbara Gniewek
TAYLOR SCHOOLS: Pat Collins
TAYLOR TEEN HEALTH CENTER: Janice Fialka
TRAINING AND TREATMENT INNOVATIONS: Jeffrey Creech, Jean Pfaendtner, Wendy Taggart
TUSCOLA INTERMEDIATE SCHOOL DISTRICT: Rebecca Ducham
UNIVERSITY MIDDLE SCHOOL — FORDHAM PROJECT: Roxanne Barzone
UNIVERSITY PSYCHIATRIC CENTER: Ken Kish, Lynn Margolis
UPWARD BOUND: Marlene Harper
UTICA COMMUNITY SCHOOLS: Bev Solomon
VA MEDICAL CENTER — ANN ARBOR: John A. Comfort, Roderick Fitch
VA MEDICAL CENTER — DETROIT: Mary German, Jerry Harms, Pat Reed, Sandy Wilson
VAN DYKE PUBLIC SCHOOLS: Joe Fedorczyk, Patricia Magas, Mary Reilly
VANTAGE POINT/NLC: Linda Woodward
VISITING NURSES' ASSOCIATION OF SOUTHEAST MICHIGAN: Stephanie Dennis, Judith Lewis, Jeannette Longairc
VISTA MARIA: Candice Kidd
WALLED LAKE SCHOOLS: Cheryl Abel
WALTER P. REUTHER PSYCHIATRIC HOSPITAL: David Barry, Joyce Skinner
WARREN CONSOLIDATED SCHOOLS: Diane Bracciano, Bill Guisinger, Bob Sperrick
WARREN/CONNER DEVELOPMENT COALITION: Dawn Zachow
WATERFORD SCHOOL DISTRICT: Kim Foo
WAYNE CENTER: Cheryl Betz, Susan Erspamer, Julia Kirby, Mark Mitchell
WAYNE COUNTY JUVENILE DETENTION FACILITY: Janice Pearson
WAYNE COUNTY NEIGHBORHOOD LEGAL SERVICES: Cecille Barnhill
WAYNE COUNTY PROSECUTOR'S OFFICE: Judith Boggs
WAYNE COUNTY CLINIC FOR CHILD STUDY: Delores Guye, Priscilla Wells
WAYNE STATE UNIVERSITY COUNSELING AND PLACEMENT SERVICES: Amy McCollum
WEDGEWOOD ACRES: Judith Walton
WESTLAND COUNSELING CENTER: Doreen Lightner
WESTWOOD COMMUNITY SCHOOL DISTRICT: Michael Nathan
WHITMORE LAKE ELEMENTARY SCHOOL: Terry Bond-Manville
WINDSOR GROUP THERAPY PROJECT: Dale Swaisgood
WOLVERINE HUMAN SERVICES: Diane Devins, Kathleen Neuman
WOMEN'S JUSTICE CENTER: Norman Tucker
WOODWARD HILLS NURSING HOME: Ann Kelly
WYANDOTTE HOSPITAL AND MEDICAL CENTER: Wendy Lyon, Kristin Schaeffer
YMCA OF METRO DETROIT: Rick Crawford, Ed Essa
YWCA : Mary Lu Lewis
YOUTH LIVING CENTERS: Paul A. Dube, Lee Hammontree, Mary Ellen Rehse

**College of Urban,
Labor, and Metropolitan Affairs**

DEAN: Sue Marx Smock

Foreword

The College of Urban, Labor, and Metropolitan Affairs (CULMA) was approved by the Board of Governors, effective Fall Term 1987. The primary mission of the College is to promote, stimulate and engage in pure and applied research on urban and workplace issues; to provide instructional programs (credit and non-credit curricula) in urban and labor affairs; and to develop and conduct programs of service to public and private institutions and to individuals, consistent with the overall mission of the University.

The major context of the College's work is the urban setting of metropolitan Detroit. Utilizing an interdisciplinary and interdepartmental approach, the College will draw upon numerous departments in the University for its programs of study, research, and public service.

The College of Urban, Labor, and Metropolitan Affairs includes the Center for Chicano-Boricua Studies; the Center for Peace and Conflict Studies; the Department of Geography and Urban Planning; the Labor Studies Center; the Center for Urban Studies; the Archives of Labor and Urban Affairs; the University Professors for Labor Studies; the Skillman Center for Children; and the Detroit Orientation Institute. CULMA has two interdisciplinary programs: the Master of Arts Program in Dispute Resolution (MADR), and the Master of Arts Program in Industrial Relations (MAIR).

Graduate Degrees and Certificate Programs

MASTER OF ARTS with a Major in Geography

MASTER OF ARTS (Interdisciplinary) in Dispute Resolution

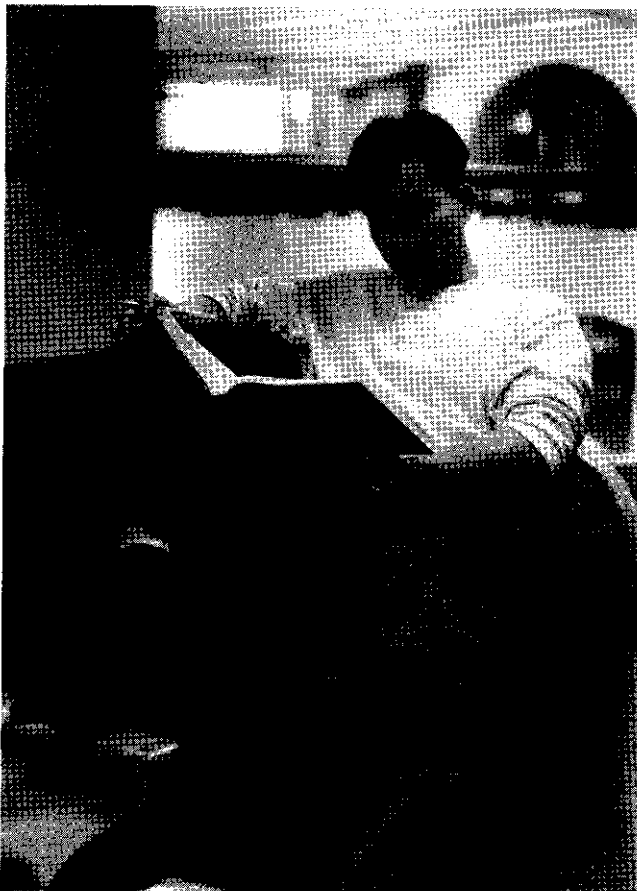
MASTER OF ARTS (Interdisciplinary) in Industrial Relations

MASTER OF URBAN PLANNING

GRADUATE CERTIFICATE in Dispute Resolution

GRADUATE CERTIFICATE in Economic Development

GRADUATE CERTIFICATE in Archival Administration



DIRECTORY OF THE COLLEGE

OFFICE OF THE DEAN

Dean: Sue Marx Smock
 Associate Dean: Robin Boyle
 Assistant Dean: Carlton Maley
 Business Manager: Mary Serowik
 3198 Faculty/Administration Building 577-5071
 Fax: 577-8800

OFFICE OF INSTRUCTIONAL PROGRAMS

Academic Services Officer: Linda Johnson
 1262 Faculty/Administrative Building 577-6092

ARCHIVES OF LABOR AND URBAN AFFAIRS

Associate Director: Patrice Merritt
 231 Reuther Library 577-4024

CENTER FOR CHICANO-BORICUA STUDIES

Director: Jose Cuello
 Assistant Director: Diana Rosario
 3324 Faculty/Administration Building 577-4378

CENTER FOR PEACE AND CONFLICT STUDIES

Director: Fred Pearson
 2319 Faculty/Administration Building 577-3453

CENTER FOR URBAN STUDIES

Director: David Fasenfest
 3040 Faculty/Administration Building 577-2208

DISPUTE RESOLUTION

Academic Director: Loreleigh Keashly
 3261 Faculty/Administration Building 577-3221

FRASER CENTER FOR WORKPLACE ISSUES

Director: William N. Cooke
 225 Reuther Library 577-2100

GEOGRAPHY AND URBAN PLANNING

Chairperson: Gary Sands
 225 State Hall 577-2701

INDUSTRIAL RELATIONS

1262 Faculty/Administration Building 577-4380

LABOR STUDIES CENTER

Director: Hal Stack
 3168 Faculty/Administration Building 577-2191

SKILLMAN CENTER FOR CHILDREN

Director: Ernestine Moore
 3198 Faculty/Administration Building 577-5225

STATE POLICY CENTER

Director: Peter Eisinger
 3231 Faculty/Administration Building 577-0635

UNIVERSITY PROFESSORS

Irving Bluestone, University Professor of Labor Studies
 Douglas Fraser, University Professor of Labor Studies
 Ernest Savoie, University Professor of Industrial Relations
 253 Reuther Library 577-5196

FACULTY OF URBAN AND LABOR STUDIES

3198 Faculty/Administration Building 577-5071

Professors

Timothy M. Bates, Diane Brown, William N. Cooke, Peter Eisinger,
 Phillip P. Mason

Associate Professors

Michael Goldfield, Loreleigh Keashly, Thomas L. Thompson

Clarence B. Hilberry Endowed Chair Of Urban Affairs

George C. Galster

Coleman A. Young Endowed Chair Of Urban Affairs

Alma H. Young

Student Services

The Office of Instructional Programs is responsible for credential evaluation, admissions processing, advising, and graduation certification of CULMA students. Students are assisted in choosing their programs of study and offered basic counseling about course loads, and other academic-related matters. In addition, the Office of Instructional Programs prepares and distributes the *Plan of Work* for students enrolled in CULMA's graduate programs.

Center for Chicano-Boricua Studies

3324 Faculty/Administration Building; 577-4378; Fax: 577-1274

The Center for Chicano-Boricua Studies (CBS) is a multi-service unit engaged in teaching, research, and service, and thereby plays an important role in the urban mission of Wayne State University. The Center's own mission has four components:

Recruitment, Academic Development, and Retention: The Center recruits Latino students into the University through a two-year program designed to facilitate the transition between high school and college and to increase retention. It also provides support services for Latino students outside of the program.

Research: The Center promotes research on a) issues relevant to the Latino community, especially in the urban and workplace environment; and b) Latin American history and current issues.

Community Outreach: The Center creates and fosters the interaction and exchange of personnel and resources between the University and the Latino community; and it serves as a source of expertise on Latino issues to the larger metropolitan community.

University Advocacy: As an advocate for the awareness and advancement of Latino issues within the University, the Center contributes to the University's continuing efforts to create a richer multicultural campus environment.

Scholarships: The Center grants 100,000 dollars in scholarships to Latino students each year. Contact the Center for information.

Archives of Labor and Urban Affairs

Walter P. Reuther Library; 577-4024; Fax: 577-4300
www.reuther.wayne.edu

The Archives of Labor and Urban Affairs, a unit of the College of Urban, Labor, and Metropolitan Affairs, enjoys an international reputation as the largest and finest labor archives in the world. In all, the Archives has some 95 million documents in addition to 20,000 books, monographs, union publications and proceedings; 1,000,000 photographs; and 20,000 films and tape recordings. A unique portion of the holdings is the labor journal and newspaper collection, which has nearly 1,600 current and non-current titles dating from the late 1800s to the present.

The Archives was established in 1960 to collect and preserve records of the American labor movement, related social, economic, and political reform groups, and twentieth century urban America. The Archives has since become the official depository for the inactive files of the the United Auto Workers, the Congress of Industrial Organizations, the American Federation of Teachers, The Newspaper Guild, the United Farm Workers, the Service Employees International Union, the American Federation of State, County and Municipal Employees, the Air Line Pilots Association, the Association of Flight Attendants, the Industrial Workers of the World, and many state and local labor organizations. Records have also been received from such groups as the Citizens Crusade Against Poverty, the Michigan Chapter of the American Civil Liberties Union, the Detroit Branch of the National Association for the Advancement of Colored People, the United Community Services of Detroit, United Way for Southeastern Michigan, and New Detroit, Inc. Many individuals who played leading roles in labor and urban affairs have also placed their papers in the Archives.

University Archives

Walter P. Reuther Library; 577-4024

The University Archives, a unit of the College of Urban, Labor and Metropolitan Affairs, was established in 1958 as a research/reference center for the University's historical records. In addition to being the official repository for records of Wayne State and its predecessor institutions, the Archives also collects faculty papers and the records of student and professional organizations which document the development of the University and higher or professional education.

The Archives' holdings of over 6,000 cubic feet include manuscripts, minutes, publications, photographs and reports. There are over 500 current and non-current titles, extensive vertical and biographical files, catalogs from 1868 to present, and the student newspaper from 1918 to present. Topics range from House Un-American Activities Committee, Michigan Academy of Pharmacy, occupational health and safety, and teacher training to student activities. Tours of the University Archives and the Reuther Library may be scheduled upon request.

Center for Peace and Conflict Studies

2323 Faculty/Administration Building; 577-3453; Fax: 577-8269

The Center for Peace and Conflict Studies was established in 1965, and provides programs devoted to the resolution of conflict in all contexts, from the local community to the international system. Under the faculty director and an interdisciplinary executive committee, research projects are developed that contribute to the exploration of the social and political problems of our time. Conferences and speaker series are organized and occasional papers issued. The Center serves as the base for an undergraduate co-major and minor in peace and conflict studies, and participates in the interdisciplinary Master of Arts in Dispute Resolution program in conjunction with the College of Urban, Labor, and Metropolitan Affairs. The Center director also co-directs the Program in Mediating Theory and Democratic Systems, sponsored by the Hewlett Foundation, one of sixteen national centers investigating theories and approaches to ethnic, racial, gender, or religious dispute settlement.

Detroit Council for World Affairs: The Council is the community arm of the Center for Peace and Conflict Studies and presents activities for a broad audience on crucial world issues and domestic and international conflict. The Council serves as a link between the University and the community in the greater Detroit metropolitan area. Members of the public may join the Council to participate in Center and Council activities.

Skillman Center for Children

3235 Faculty/Administration Building; 577-5225; Fax: 577-8800

The Skillman Center for Children, created in 1991 by a Skillman Foundation endowment, is located in the College of Urban, Labor, and Metropolitan Affairs. Its mission is to utilize University expertise and resources to support the work of existing agencies, citizen/parent groups, organizations and governmental units concerned with needs of urban children, youth and families in the metropolitan Detroit area.

To implement this mission, the Skillman Center for Children: 1) serves as a central resource for information about best practices and model service delivery programs for urban children and families and makes these resources available to the academic policymaker and practitioner communities through the Skillman Center/Urban Families Resource Center; 2) develops information and strategies to address contemporary issues facing urban children and families; 3) conducts national searches on best practices in identified cases; 4) produces a bi-yearly Status of Detroit Area Youth report; 5) disseminates findings and reports via conferences, workshops, forums, publications and technical assistance.

The Skillman Center for Children functions to unite faculty around common themes and research thrusts, to share knowledge, to build interdisciplinary networks and to connect the University community to the service delivery community. It is co-directed by the Center for Urban Studies and the Merrill-Palmer Institute.

Center for Urban Studies

3040 Faculty/Administration Building; 577-2208; Fax: 577-1274

The Center for Urban Studies responds to pressing urban challenges and opportunities through research, policy and program innovation, training, capacity-building, technical assistance, and partnership-building. Located in the College of Urban, Labor and Metropolitan Affairs, the Center brings communities, institutions, and leaders together with University faculty and resources to transform the knowledge gained from research into action. It also seeks to participate in defining and influencing national, state and regional urban policy.

The Center is organized into eight specialized program areas: *Urban Families Program*: designs and implements model programs to strengthen parents' ability to nurture and guide their children; *Michigan Metropolitan Information Center*: a university research and service program specializing in urban housing and population issues; *Urban Transportation Institute*: conducts basic and applied research on transportation planning and engineering issues; *Southeast Michigan Business Assistance Consortium*: consists of a cluster of business assistance agencies working together to provide small businesses with a variety of services; the goal of the Consortium is to stimulate the state's economy by helping firms and entrepreneurs manage growth, generate profits, and create and retain jobs; *Urban Linkage Program*: provides Detroit metropolitan area city and community officials with graduate and undergraduate student internships and faculty consultations to help resolve urban government problems; *Survey and Evaluation Services*: provides survey research and program evaluation expertise to a variety of business, education, government and human service agencies throughout the state; *Urban Safety Program*: conducts applied research on crime and safety issues in Detroit and Wayne County; *Multicultural Experience in Leadership Development (MELD)*: trains and supports a network of leaders to work across institutional lines within culturally-, ethnically-, and racially-diverse communities.

Labor Studies Center

3178 Faculty/Administration Building; 577-2191; Fax: 577-8800

Established in 1957, the Labor Studies Center's mission is to contribute to the effectiveness of organized labor through teaching, technical assistance, and the diffusion of the results of academic research, while strengthening the University's ability to conduct interdisciplinary research and teaching on labor and industrial relations issues. Its activities include: (1) an interdepartmental major in Labor Studies leading to a Bachelor of Arts degree, preparing students for careers in the labor movement, related government agencies, the labor relations profession, and graduate study in labor and industrial relations; (2) applied research conducted for unions and interdisciplinary research within the University on labor and industrial relations issues; and (3) technical assistance and a wide range of non-credit education and training programs for unions and their members throughout southeast Michigan, including six-week courses in labor law and collective bargaining, and the two-year Labor School, designed to strengthen workers' leadership and communication skills and to increase their understanding of the complex issues confronting workers and unions in contemporary society. The Center also provides training and technical assistance in implementing joint labor-management programs and mutual gains bargaining.

ACADEMIC REGULATIONS

ADMISSION REQUIREMENTS

Admission to any graduate degree program is contingent upon meeting the admission requirements of the Graduate School. For further information on these requirements, see page 16.

Preference is given to those students who have achieved superior undergraduate scholastic records and who have evidenced superior abilities.

All prerequisite credits must be earned prior to or concurrently with the first graduate credits. If undergraduate preparation for the major field is considered deficient, additional work may be required at the undergraduate level. Many programs have additional individual admission requirements. Students should consult the subsequent departmental sections in this bulletin for specific requirements in each field of study.

Graduate Record Examinations

The Graduate Record Examination (GRE) is used to assist advisers in evaluating educational preparation and to serve as a basis for planning future study. There is no uniform policy concerning GREs; some departments require GRE scores from all applicants for admission, while others require scores only from students in specified classifications. Students should consult the department in which they wish to major to determine which examinations must be taken.

Students required to take these examinations must apply at the Testing and Evaluation Office, 698 Student Center, either prior to or at the time of admission. Students who previously have taken the examination may have transcripts of these scores submitted. After the initial registration, no subsequent enrollment will be permitted nor will candidacy be authorized until examination requirements have been fulfilled.

DEGREE REQUIREMENTS

Graduate degrees are conferred not merely upon the completion of a prescribed number of courses nor necessarily after a given period of residence, but rather in recognition of each candidate's outstanding ability and high attainments as evidenced in all course work, research, scholarly writing, examinations and personal fitness for a chosen profession. All course work must be completed in accordance with the academic procedures of the Graduate School (see pages 16-30) and the regulations of the College of Urban, Labor, and Metropolitan Affairs. In addition to the general Graduate School requirements for degrees and to the information provided below, other requirements are specified by the individual graduate departments. Students should consult the programs and requirements of the departments in which they plan to major.

Candidacy

Candidacy is an advanced status recommended by student advisers and authorized by the Graduate School or the College Graduate Office upon evidence of superior scholarship, appropriate personal qualities and promise of professional competence. Students should note that admission as an applicant does not assure acceptance as a candidate for a degree, and that candidacy is a necessary but not sufficient requirement for graduation.

To be eligible for candidacy, students must file officially approved *Plans of Work*. Master's applicants should file their *Plans of Work* with the graduate officer of the College. In preparing a *Plan*, students should evaluate with care their personal and professional objectives as well as all degree and departmental requirements. Normally, a student enrolled in master's degree programs is expected to file a *Plan of Work* by the time twelve graduate credits or their equivalent have been earned.

Commencement

Information concerning commencement announcements, caps and gowns, invitations, tickets, time and place, assembling and other relevant items will be mailed to graduates by the Alumni Office prior to the event. Candidates for advanced degrees are requested and expected to attend the commencement at which the University confers upon them the honor of the degree earned.

Master's Degree Requirements

In most master's degree programs, the minimum requirement for the degree is thirty-two credits under either Plan A or Plan B or Plan C as cited below. At least twenty-four credits must be taken in residence. At least six credits of work in the major field, in addition to the essay or thesis, must be in courses open only to graduate students (courses numbered 7000 and above).

Plan A requires twenty-four credits of course work plus an eight credit thesis.

Plan B requires twenty-nine credits of course work plus a three credit essay.

Plan C requires thirty-two credits of course work. Essay or thesis not required. Authorized only in selected areas. Most departments require a final comprehensive examination. Students should consult adviser.

These requirements vary slightly by departments; see listings under the individual departments for exact information.

Essays and Theses

There is no prescribed form for the Master's essay. Essay guidelines, indicating standard style manuals for each department and title-page samples, are available in the College Graduate Office.

Master's degree candidates under the essay plan register for the course numbered 7999, Master's Essay Direction, in the department of their major; a total of three credits must be elected.

The original copy of the essay should be submitted to the College Graduate Office after it is approved and signed by the adviser. This copy will be returned to the department.

The thesis *must be an original work, either in or definitely related to the student's major area of specialization.* If proper standards of quality, objectivity, originality, and independence are maintained, candidates may use data which they have derived from their University research. Neither the results of the research nor the publication of findings can be restricted by any non-university agency nor can they be published prior to acceptance by the Graduate School, unless prior approval of such publication has been secured from both the adviser and the Graduate School. Advisers have primary responsibility for approval of the essay or thesis.

Master's candidates under the thesis plan register for the course numbered 8999 in the department of their major. This course is entitled *Master's Thesis Research and Direction* and must be elected for a total of eight credits.

Outline and Record Form

Before students begin working on theses, they must file thesis outline and record of approval forms. Master's candidates must prepare three copies which, after receiving departmental approval, will be forwarded to the College Graduate Office.

INTERDEPARTMENTAL GRADUATE PROGRAMS

Graduate Certificate in Economic Development

The Graduate Certificate Program in Economic Development is administered by the College of Urban, Labor, and Metropolitan Affairs in conjunction with the following graduate programs: Applied Sociology, Business Administration, Economics, Industrial Relations, Public Administration, and Urban Planning.

The Certificate is designed for students who wish to combine a graduate degree (master's or doctoral) with a specialty in urban, regional and state economic development. It will be awarded only in conjunction with the completion of a graduate degree or to those already holding such a degree.

Admission: Applicants must meet the admission standards of the Graduate School; for requirements, see page 16. Eligibility for this program is limited to persons holding a graduate degree from an accredited educational institution or those actively pursuing a graduate degree at Wayne State University. Applicants must submit a completed application form, personal statement of interest in the program, and *Plan of Work*.

CERTIFICATE REQUIREMENTS: Students must complete twelve credits in designated graduate courses, including the required course comprising Core Area I, and courses (at least three credits) from two of the Core Areas II, III, and IV. Additionally, ECO 6450 in Area IV is required; this course may be waived if the student has successfully completed an equivalent course, or if it is a requirement for the graduate degree being pursued; but waiver of this course will not reduce the number of credits required nor substitute for the Area IV requirement. At least one course at the 7000 level must be elected, and at least one course (in addition to the Area I course) must be elected from outside the student's graduate program.

Students in the certificate program must maintain an honor point average of at least 3.0. Transfer of credit from other institutions may not be applied toward the credits required for the certificate. If a student is concurrently enrolled in a graduate degree program at the University, no more than nine credits from the certificate program may be applied toward that degree.

CORE AREA I:

Theory and Practice of Economic Development Credits

U S 6210— Regional, State and Urban Economic Development:
Policy and Administration (P S 6440) (ECO 6650) (U P 6550)..... 3

CORE AREA II:

Economic Development Policy, Politics and Institutions

ECONOMICS:

ECO 5600 — Introduction to Development Economics 4
ECO 6420 — Labor Relations, Institutions, and Public Policy 3

POLITICAL SCIENCE:

P S 5220 — Issues in Urban Public Policy and Mgt (U P 5150)..... 4
P S 7240 — Urban Public Policy (U P 7650) 3

SOCIOLOGY:

SOC 5500 — Urban and Metropolitan Living (U P 5210) 3

URBAN PLANNING:

U P 6350 — Housing Policy and Programs 3

BUSINESS ADMINISTRATION:

MKT 7460 — International Business 3
MGT 7750 — Labor Relations and Collective Bargaining 3

INDUSTRIAL RELATIONS:

I R 7400 — Labor Relations Law in North America 3
I R 7450 — Employment Relations Law in North America 3

CORE AREA III:

Economics and Finance of Economic Development

ECONOMICS:

- ECO 5520 — State and Local Public Finance (U P 6750) 4
- ECO 5800 — Urban and Regional Economics I (U P 5820) 4

URBAN PLANNING:

- GEG 6130 — Adv. Urban Geography (U P 6010) (GPH 6130) . . . 4
- GEG 6240 — Industrial Geography (U P 5520) (GPH 6240) . . . 4
- U P 6310 — Housing Development 3

BUSINESS ADMINISTRATION:

- FBE 5350 — Real Estate Finance 3
- FBE 7830 — Business Conditions Analysis 3
- FBE 7870 — International Business Finance 3

CORE AREA IV:

Economic Development Management and Analysis Technique

ECONOMICS:

- ECO 6450 — Economic Analysis and Public Administration¹ 3

POLITICAL SCIENCE:

- P S 7250 — Seminar in Urban Administration (U P 7250) 3
- P S 7460 — Policy Analysis and Program Evaluation 3

SOCIOLOGY:

- SOC 6580 — Applied Sociology I: Policy Research & Analysis 3

URBAN PLANNING:

- U P 6650 — Planning and Development Law 2 or 3

BUSINESS ADMINISTRATION:

- ACC 7100 — Financial Reporting Framework I 3
- B A 7020 — Corporate Financial Management 3
- MGT 5650 — The Entrepreneur and Venture Creation² 3
- MGT 7660 — Entrepreneurial Management 3

For further information about this certificate program, contact the graduate adviser of the program in which you are enrolled or wish to enroll. Students who are not in a graduate program in applied sociology, business administration, economics, industrial relations, public administration, or urban planning, or who do not already possess a graduate degree in one of these areas, should contact the Academic Services Officer, College of Urban, Labor, and Metropolitan Affairs: 577-5071.

Graduate Certificate in Dispute Resolution

The Graduate Certificate Program in Dispute Resolution is designed to provide professional study and certification, for individuals holding or pursuing advanced degrees, in the interdisciplinary field of dispute resolution. The Program is administered by a Program Director.

Admission: Applicants must meet the admission standards of the Graduate School; for requirements, see page 16. Eligibility for this program is limited to persons holding a graduate degree from an accredited educational institution or those actively pursuing a graduate degree at Wayne State University. Applicants must submit a personal statement of 200 words outlining their interest in the program, and three letters of recommendation.

CERTIFICATE REQUIREMENTS: Students in the certificate program must complete a minimum of fifteen credits as outlined below and maintain an honor point average of at least 3.0. Transfer of credit from other institutions may not be applied toward the credits required for the certificate. The Certificate Program must be completed within three years. The following courses are required:

1. All students are required to take ECO 6450 or an equivalent. ECO 6450 will NOT count toward the certificate for students pursuing a master's degree in economics or public administration.

2. For M.B.A. students, FBE 4290, FBE 5320, and MGT 5650 will NOT count toward the certificate.

P S 7550 — Topics in the History of Political Thought:

- Democratic Theory & Conflict Resolution 3
- DR 7100 or DR 6120
 - Roots of Social Conflict 3
 - Human Diversity and Human Conflict 3
- DR 7210 (MGT 7780)— Dispute Resolution I:
 - Negotiating Theory & Practice 3
- DR 7220 — Dispute Resolution II:
 - Neutral Intervention Theory & Practice 3
- DR 7890 — Seminar in Dispute Resolution 3

Graduate Certificate in Archival Administration

The archival profession has experienced rapid growth in recent years as many institutions such as colleges and universities, federal, state and local units of government, businesses, churches, and professional organizations have recognized the importance of maintaining their inactive historical records. In addition to the expansion of existing archives, many organizations are establishing archives. This has created a demand for individuals with undergraduate degrees in history or the humanities, who have advanced training in archival administration. In large archival establishments, archivists can become specialists in such areas as appraisal, conservation, exhibits, publications, reference service, oral history, records management, processing and public relations.

The Graduate Certificate Program in Archival Administration serves the needs of those who wish to enter the archival profession as well as those who have responsibility for overseeing archival programs. The program is open to students with baccalaureate degrees from accredited universities, students with advanced degrees, and students enrolled in other Wayne State University graduate programs. **Admission:** See requirements for admission to the Master of Library and Information Science, page 260 .

CERTIFICATE REQUIREMENTS

Students in graduate certificate programs at Wayne State must maintain a minimum honor point average of 3.0. Students must complete twelve credits selected from the following:

Credits

- LIS 6780 — Records Management 3
- LIS 7710 — (HIS 7840) Introduction to Archival Methods I³ 3
- LIS 7720 — (HIS 7850) Introduction to Archival Methods II³ 3
- LIS 7730 — (HIS 7890) Conservation & Admin. of Photo. Collns. 3
- LIS 7750 — Intro. to Archival & Library Conservation (HIS 7810) 3
- LIS 7770 — (HIS 7860) Oral History: A Methodology
 - for Research (ANT 6360) 3
- LIS 7780 — Computer Applications for Archives & Records Mgt. 3
- HIS 7880 — Administration of Historical Agencies 3

Master of Arts in Dispute Resolution (MADR)

This is an interdisciplinary master's degree program administered by the College of Urban, Labor, and Metropolitan Affairs, which is designed to provide meaningful academic knowledge and professional skills for individuals interested or engaged in conflict resolution activities. Dispute resolution is an interdisciplinary field of theory and endeavor unified by a paradigm of the peaceful resolution or management of conflict through a range of techniques, such as negotiation and third-party neutral intervention methods including mediation and arbitration, which are applied to a diverse range of issues. The field applies to professional activities such as labor mediation, commercial arbitration, family counseling, legal negotiation, and international diplomacy. Students will be prepared for employment opportunities in a variety of areas such as mediation firms, neighborhood justice centers, private and public bureaucracies, educational institutions, and the criminal justice system. This Master of Arts program is open to recent recipients of undergraduate degrees as well

3. LIS 7710 and LIS 7720 are required courses.

as to mid-career professionals whose work involves them in conflict resolution activities. MADR courses may also constitute a compatible cognate area for graduate degree programs in criminal justice, education, hazardous waste management, public administration, urban planning, sociology, social work, and law.

Admission: Applicants must meet the admission standards of the Graduate School; for requirements, see page 16. Applicants must submit a personal statement of 200 words outlining their interest in the program, GRE scores or equivalent in LSAT or GMAT scores, and three letters of recommendation.

Scholarship: All course work must be done in accordance with the regulations of the Graduate School governing graduate scholarship and degrees; see pages 16-30. A 3.0 h.p.a. is required; if a grade below 'B' is received in any core course, the course must be repeated promptly and a grade of 'B' or above obtained. A grade of 'C' or below in any two graduate courses will constitute a sufficient basis for dismissal from the program.

DEGREE REQUIREMENTS: This master's degree is offered under Plan C only. It requires the completion of the core curriculum (twenty-four credits) plus a minimum of three elective courses.

Prerequisite: Students who have been admitted to the program must possess credit in statistics equivalent to any of the following courses, or must remedy the deficiency (the credit does not apply toward the graduate degree) before graduate courses are taken in the MADR Program: SOC 6280 or P S 5630 or EER 7630 or PSY 7150 or B A 6090.

<i>Core Curriculum (Twenty-four credits):</i>	<i>Credits</i>
P S 7550 — Topics in the History of Political Thought: Democratic Theory & Conflict Resolution	3
D R 6350 — (SPC 6350) Communications, Culture, and Conflict	3
D R 6120 — Human Diversity and Human Conflict	3
D R 7100 — Roots of Social Conflict	3
D R 7210 — (MGT 7780) Dispute Resolution I: Negotiating Theory & Practice	3
D R 7220 — Dispute Resolution II: Neutral Intervention Theory & Practice	3
D R 7310 — Practicum in Dispute Resolution	3
D R 7890 — Seminar in Dispute Resolution	3

Waiver of Core Course: A core course may be waived only if the student demonstrates, to the satisfaction of the Academic Policy Committee, that he/she has completed an equivalent course with a grade of 'B' or better *and* elects an additional approved elective in its place.

Electives: Students must elect a minimum of three courses (eight to ten credits). Electives are selected with the cooperation and approval of the program adviser. Students must ordinarily satisfy any prerequisites for elective courses; waivers of any prerequisites must be obtained from the unit offering the course. Suggested areas of elective study include: workplace, environmental and hazardous waste; family gerontology; health care.

Candidacy: Students are expected to file a *Plan of Work* upon successful completion of nine graduate credits. Upon approval of the *Plan*, the student's rank will be changed from 'applicant' to 'candidate,' provided the applicant's honor point average is at least 3.0

COURSES OF INSTRUCTION (D R)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number.

(Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

6120 Human Diversity and Human Conflict. Cr. 3

Relationship of human differences and conflict, and ways to peacefully resolve them; differences as defined by ethnicity, race, gender, class, age, etc. (Y)

6350 (SPC 6350) Communication, Culture, and Conflict. (D R 6350) Cr. 3

Prereq: SPC 6250 or graduate standing. Overview of communication theory and practice as it relates to issues of culture, conflict and dispute resolution. (Y)

6992 Special Topics in Dispute Resolution. Cr. 3

Dispute settlement in numerous contexts: business, family, legal system, community, education, church, and employment. History of dispute resolution; current trends as applied to topic areas. (Y)

7100 (D R 7100) Roots of Social Conflict. (P S 7850) Cr. 3

Prereq: graduate standing. Background and immediate causes of social conflict, from interpersonal to national to international settings, from ethnic to gender conflict; review of destructive and constructive aspects of conflict. (Y)

7210 (MGT 7780) Concepts and Processes of Dispute Resolution I: Negotiating Theory and Practice. Cr. 3

Prereq: graduate standing. Theoretical foundations of processes of negotiation and multi-party collaborative problem solving. Skill building simulation to integrate theory and practice. (Y)

7220 Concepts and Processes of Dispute Resolution II: Neutral Intervention Theory and Practice. Cr. 3

Prereq: MGT 7780 or D R 7210. Dispute resolution growth and methods; mediation, facilitation, conciliation, fact-finding, arbitration; hybrids; dispute resolution institutions and practitioners. (Y)

7310 Practicum in Dispute Resolution. Cr. 3

Prereq: 24 credits in Dispute Resolution courses, consent of academic adviser. Field placement in dispute resolution. (Y)

7890 Seminar in Dispute Resolution. Cr. 3

Prereq: completion of all core courses except D R 7310. (Y)

7990 Directed Study in Dispute Resolution. Cr. 1-4

Advanced independent readings and writing under supervision of graduate faculty member, in areas of special interest. (Y)

GEOGRAPHY and URBAN PLANNING

Office: 225 State Hall; 577-2701; Fax: 577-0022
Chairperson: Gary Sands

Professors

Robert M. Boyle, Fred E. Dohrs (Emeritus), Robert J. Goodman (Emeritus),
George J. Honzatko (Emeritus), Laura Reese, Robert Sinclair

Associate Professors

Eugene E. Perle, Gary Sands

Adjunct Faculty

George Galster, Adiele Nwankwo, Robert Vieweg, Alma H. Young

Graduate Degrees

MASTER OF ARTS with a Major in Geography

MASTER OF URBAN PLANNING

Geography is concerned with analyses of environmental and social systems, their variations over the earth's surface and their interactions in different regions. The program has three major goals: (1) to prepare students for many occupations in which geographic understanding is essential, including industrial and retail locational analysis, community and regional development, resource conservation and management, cartography, urban and environmental planning, and numerous government positions; (2) to train students for advanced geographic research, and (3) to provide students with a basis for understanding local, regional and global scale problems and issues. Students are invited to consult with geography faculty members concerning the content of the discipline, as well as employment opportunities available for geographers.

The profession of urban planning takes major responsibility in the development of comprehensive plans and programs for local communities as well as larger regional units. These plans visualize future conditions of social, economic, and physical change, and provide an estimate of the community's long-range needs for various facilities and services. Professional urban planners perform a variety of tasks such as developing plans for housing, transportation, rehabilitation of blighted metropolitan areas, and improving the appearance and efficiency of communities. The program seeks to prepare individuals for working with local community planning agencies and regional groups.

Accreditation: The Master of Urban Planning program is accredited by the Planning Accreditation Board.

Master of Arts

With a Major in Geography

This program provides students with a broad foundation in geography enabling them to qualify for professional employment or to pursue doctoral work. Informal discussions help to acquaint students with various opportunities to specialize in geography, particular disciplinary strengths of the Department, job opportunities, and program suggestions, as well as related matters.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Prerequisite for admission to the Department of Geography is the completion of at least twelve credits in geography and an honor point of 2.6 or above for the upper division of undergraduate course work. An undergraduate major in geography is not mandatory. A student may complete prerequisites while earning graduate credit.

Candidacy must be established by the time twelve credits have been earned. An official *Plan of Work* must be filed at that time.

DEGREE REQUIREMENTS: The Master of Arts with a Major in Geography is offered by this department under the following options:

Plan A: Thirty-two credits including an eight credit thesis.

Plan B: Thirty-two credits including a three credit essay.

All master's programs must include GEG 7800 and 7990. An oral examination is required before the thesis or essay is undertaken. All course work must be completed in accordance with the academic procedures of the Graduate School and the College governing graduate scholarship and degrees, see pages 16-30 and 422, respectively.

Master of Urban Planning

Admission to this program is contingent upon admission to the Graduate School, for requirements, see page 16.

DEGREE REQUIREMENTS: The Master of Urban Planning is offered by this department under the following options:

Plan A: Forty-eight credits including an eight credit thesis.

Plan B: Forty-eight credits including a three credit essay.

The distribution of the forty-eight credits is as follows: twenty-four credits in required courses (listed below), which build the core of the program; selection of elective courses (between twelve and seventeen credits) to form a topic concentration; and the completion of a capstone component that includes an integrative project (U P 7700, four credits), and a master's essay (U P 7999, three credits) or master's thesis (U P 8999, eight credits).

<i>Required (Core) Courses (Twenty-four credits)</i>	<i>Credits</i>
U P 5010 — Resources and Communication in Planning	2
U P 5110 — Urban Planning Process	4
U P 6120 — Planning Studies and Methods	4
U P 6320 — Quantitative Techniques I	4
U P 6510 — Urban and Regional Systems	4
U P 6650 — Planning and Development Law	3
U P 7010 — Planning and Decision Theory	3

Electives: Following completion of at least twelve credits in required courses, students will, in consultation with a permanent adviser, devise a *Plan of Work*, selecting elective courses that constitute one of three topic concentrations: Housing and Community Planning, Urban Economic Development, or Planning and Public Policy. With the approval of the Director of the Urban Planning Program, a student may design his/her own topic concentration based on courses offered within the program. All *Plans of Work* must include at least six credits in courses at the 7000 or 8000 level excluding the capstone requirements.

Prior completion of courses equivalent to the program requirements may form a basis for reducing credits in any individual *Plan of Work*. Possession of a master's degree in an area of study determined to be related to urban planning by the Graduate Program Committee may allow an applicant to elect a program of thirty-two credits, inclusive of capstone requirements.

Academic work will begin with courses at the 5000 or 6000 level. Core areas in which applicants must take courses are planning background and processes, urban structure and analysis, and planning implementation. All *Plans of Work* will include at least six credits in courses at the 7000 or 8000 level, excluding the essay or thesis.

Scholarship: All course work must be completed in accordance with the academic procedures of the Graduate School and the College governing graduate scholarship and degrees; see pages 20-30 and 422, respectively.

Fellowships and Assistantships

Each year the Department offers an assistantship to a qualified student. Details and applications may be obtained from the Chairperson of the departmental Graduate Study Committee.

(Sources of financial aid for graduate students are enumerated in the section on Graduate Financial Aid, beginning on page 30 of this bulletin.)

GRADUATE COURSES

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

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GEOGRAPHY (GEG)

5650 Metropolitan Detroit. (GPH 5650) Cr. 4

Comprehensive geographic analysis of metropolitan Detroit: city, suburbs and surrounding region. Historical development, physical foundations, economic and political expansion, ethnic and cultural areas, geopolitical infrastructure, social change, present-day problems and current events shaping the area's spatial structure. (Y)

5700 Urban Canada. (GPH 5700) (U P 5700) Cr. 4

Geographic introduction to Canada; emphasis on urban topics, including: images of the Canadian city; evolution of the urban system; internal characteristics of cities; urban regions; specific cities; comparisons between cities in Canada and the United States. (B)

5750 Social and Economic Geography of the United States and Canada. (GPH 5750) Cr. 4

Human geography of North America: population distribution and change, economic geography and economic restructuring, the urban system and urban development, and changing social patterns and problems. (Y)

5810 Locational Issues in Hazardous Waste Management. (CHE 5810) (GPH 5810) (HWM 5810) Cr. 3

Analyses of spatial aspects of hazardous waste sites; corporate and public considerations and reactions; regulatory impacts. (B)

6130 Advanced Urban Geography. (GPH 6130) (U P 6010) Cr. 4

Urbanization in its broader spatial context: theoretical and conceptual approaches to urban systems. City systems in advanced societies. Recent regional shifts in American urbanization; metropolitan restructuring; urban decline; evolution of the 'world' city; urbanization in the Third World. (B)

6150 Internal Structure of the City. (GPH 6150) (U P 5420) Cr. 4

Perception of the urban environment, spatial interaction and movement, models of structure and growth, migration to and within the city, ethnic and social areas, community extension, social processes and spatial form. (Y)

6280 Marketing Geography. (GPH 6280) (U P 5620) Cr. 4

Factors underlying retail location and shopping center development; evaluation of population, income levels, access and competition for location decisions; techniques applicable to sales potential/rent-up/sell-out estimates for retail units, housing developments, recreation facilities, office buildings; retail impact on urban land use; crime and commercial location; considerations for the elderly in commercial locations. (B)

6350 (GPH 6350) Ethnic Groups in the United States and Canada. Cr. 4

Ethnic settlement patterns in the United States and Canada from 1800 to the present. Topics include: meaning of ethnicity, migration theory, immigration, community formation and growth, urban spatial structure, ethnic Detroit, ethnic characteristics of selected Canadian cities including Toronto. (B)

6420 (U P 6320) Quantitative Techniques I. (GPH 6420) Cr. 4

Statistical inference with emphasis on applications including control tendency, dispersion, hypothesis testing, correlation and regression. (Y)

6510 (U P 6510) Urban and Regional Systems. (GPH 6510) Cr. 4

Theory course dealing with concepts, processes and organization of urban and metropolitan regions, primarily focusing on the western world experience. Some comparative perspective derived from non-western experiences. Primary focus on system structure and change. (Y)

6520 Independent Field Study. (GPH 6520) (U S 6050) Cr. 2-4

Prereq: consent of instructor; for Urban Studies students: U S 4010 and consent of instructor. Observation and interpretation of data in the field. (Y)

6650 Computer Assisted Mapping. (GPH 6650) (U P 6720) Cr. 4

Science of computer assisted mapping and hands-on computer assisted map production; geo-management issues. (B)

6720 Computer Applications for Spatial Analysis. (GPH 6720) (U P 6820) Cr. 4

Prereq: course in elementary statistics recommended. Introduction to computer software for spatial analysis, including spatial statistics, computer graphics, and computer cartography. (Y)

7800 Seminar in Geography. Cr. 3

Philosophy and methodology of geography. New developments and recurrent problems in geographic thought. (Y)

7990 Directed Study. Cr. 2-3 (Max. 8)

Readings and research. (T)

7999 Master's Essay Direction. Cr. 1-3

Prereq: consent of instructor. (T)

8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)

Prereq: consent of adviser. (T)

URBAN PLANNING (U P)

5010 Resources and Communication in Planning. Cr. 2

Introduction to the use of basic tools and techniques of professional planning practice, including data resources, computer applications, map and plan preparation, presentation techniques. (Y)

5100 Field Studies on Urban Problems. Cr. 2-4 (Max. 6)

Field research on selected urban problems. Preparation of applied research report based on agency data, census data, or analyses of public documents. (Y)

5110 Urban Planning Process. Cr. 3-4

Scope and historical development of planning. Topics relevant to the practice of planning: theory, planning practice, social and physical development policy. (Y)

5310 Current Planning Practice. Cr. 3-4

Practical application of planning theory to current issues of planning and community development, including land use, economic development, and environmental concerns. (B)

5420 (GEG 6150) Internal Structure of the City. (GPH 6150) Cr. 4

Topics include: perception of the urban environment, spatial interaction and movement, models of structure and growth, migration to and

within the city, ethnic and social areas, community extension, social processes and spatial form. (Y)

5620 (GEG 6280) Marketing Geography. (GPH 6280) Cr. 4

Factors underlying retail location and shopping center development; evaluation of population, income levels, access and competition for location decisions; techniques applicable to sales potential/rent-up/sell-out estimates for retail units, housing developments, recreation facilities, office buildings; retail impact on urban land use; crime and commercial location; considerations for the elderly in commercial locations. (B)

5700 (GEG 5700) Urban Canada. (GPH 5700) Cr. 4

Geographic introduction to Canada; emphasis on urban topics, including: images of the Canadian city; evolution of the urban system; internal characteristics of cities; urban regions; specific cities; comparisons between cities in Canada and the United States. (B)

5820 (ECO 5800) Urban and Regional Economics I. Cr. 4

Prereq: ECO 2010 or consent of instructor. Introduction to the economic foundations of urban problems; land use, housing, poverty, transportation, local public finance; regional industry mix, income, growth and development; the national system of cities and location of firms. (Y)

5999 Special Topics. Cr. 1-4 (Max. 8)

Open only to graduate students. (Y)

6010 (GEG 6130) Advanced Urban Geography. (GPH 6130) Cr. 4

Selected themes in urban geography: current theoretical developments, city systems in advanced societies, the evolution of urban patterns, recent regional shifts in American urbanization, the metropolis as a social unit. (B)

6100 Comparative Planning Systems. Cr. 3

Comparative analysis of planning systems; examples from North America, Europe, and Japan. (Y)

6120 Planning Studies and Methods. Cr. 4

Economic base, population, and land use studies. Discussion of approaches used to solve selected community development problems. (Y)

6210 Urban Design Elements. Cr. 3

Introduction to the role of urban design and the concept of design criteria, design variables, and terminology. (B)

6310 Housing Development. Cr. 3

Process of urban residential development; emphasis on housing market analysis, the construction industry, and residential finance. (Y)

6320 Quantitative Techniques I. (GEG 6420) (GPH 6420) Cr. 4

Statistical inference with emphasis on applications including control tendency, dispersion, hypothesis testing, correlation and regression. (Y)

6350 Housing Policy and Programs. (ULM 6400) Cr. 3

Governmental housing policies and programs at the Federal, state and local levels. Role of community-based organizations in housing activities. (Y)

6400 Planning Issues. Cr. 2-4 (Max. 6)

Studies of urban policy issues as they affect land use. Social and economic determinants of the physical composition of urban areas. (B)

6420 Quantitative Techniques II. Cr. 4

Student computer account required. Multivariate analysis with emphasis on applications, including matrix algebra, vector spaces, linear and non-linear models, principal components analysis, and programming approaches. Material fee as indicated in the Schedule of Classes. (B)

6510 Urban and Regional Systems. (GEG 6510) (GPH 6510) Cr. 4

Theory course dealing with concepts, processes and organization of urban and metropolitan regions, primarily focusing on the western world experience. Some comparative perspective derived from non-western experiences. Primary focus on system structure and change. (Y)

6520 Transportation and Planning. Cr. 4

Introduction to the role of transportation in the planning process involving both regional and urban considerations. (Y)

6550 (ULM 6210) Regional, State, and Urban Economic Development: Policy and Administration. (ECO 6650) (P S 6440) Cr. 3

Prereq: graduate standing. Examination of regional, state, and local economic development theory, analysis, policy and administration. (B)

6650 Planning and Development Law. Cr. 2-3

Techniques available to guide land development. Concepts in zoning, subdivision regulations, timing and sequence of land development. (Y)

6670 (ULM 6150) Political Economy of the Urban Ghetto. (ECO 6810) (SOC 6850) Cr. 3

Prereq: graduate standing; upper division undergraduates by consent of instructor. Examination of the economic, social and political transformation of U.S. cities; particular attention to the formation, dynamics, economics and social sub-systems of urban ghettos and their relationship to broader contexts. (B)

6680 (ULM 6680) Neighborhood Decline and Revitalization. Cr. 3

Examination of reasons for neighborhood change and how plans and policies can be specified and implemented for neighborhood improvement. (B)

6720 (GEG 6650) Computer Assisted Mapping. (GPH 6650) Cr. 4

Science of computer assisted mapping and hands-on computer assisted map production; geo-management issues. (B)

6750 (ECO 5520) State and Local Finance. Cr. 4

Prereq: ECO 2010. Taxation, expenditure and debt management problems of state and local governments; grants-in-aid, subsidies, shared revenues and coordination of the financial policies of federal, state and local governments. Attention to problems, policies, and practices of governmental units in Michigan and neighboring states.

6820 (GEG 6720) Computer Applications for Spatial Analysis. (GPH 6720) Cr. 4

Prereq: course in elementary statistics recommended. Introduction to computer software for spatial analysis, including spatial statistics, computer graphics, and computer cartography. (Y)

6850 Cost-Revenue Workshop. Cr. 3-4

Offered for S and U grades only. No credit after U P 6050. Evaluation of the fiscal impacts of land use projects as they affect community tax revenue. Presentation of methods for assessing costs and revenues associated with residential and nonresidential growth. (B)

7010 Planning and Decision Theory. Cr. 3

Materials addressing the function of planning as a rationalizing of social decision making processes. Theories of the planning process as a human decision activity. (B)

7020 Urban Development Costs Workshop. Cr. 3

Spatial study of urban areas, with special reference to land use, circulation, and design concepts for such functional units as residential neighborhoods, shopping centers, and open space. (Y)

7030 (ULM 6100) Class, Race, and Politics in America. (AFS 6100) (HIS 5110) (P S 6050) (SOC 7330) Cr. 3

Prereq: senior standing or consent of instructor. Historical and analytic investigation into the role of class and race in American politics. (Y)

- 7100 Seminar in Michigan/Ontario Planning Issues. Cr. 3**
Local, organizational, and procedural differences in public land use planning in Michigan and Ontario. (B)
- 7250 (P S 7250) Seminar in Urban Administration. (ULM 7250) Cr. 3**
Public administration in agencies with urban-related policy and program functions. Focus on: public services delivery; urban systems development; program-project design, implementation and evaluation; and intergovernmental relations. (B)
- 7260 (ULM 7260) Urban Poverty and Racial Segregation. (AFS 6600) (ANT 7260) (P S 7260) (SOC 7350) Cr. 3**
Prereq: graduate standing. Review of theories of poverty from various economic/political perspectives; historical intervention policies; current literature on interplay of racial, economic, and spatial factors on growing economic inequality among urban whites and African-Americans. Political rationale and meaning of 'underclass' debate. (Y)
- 7550 (P S 7300) Public Administration in the United States. Cr. 3**
Examination of the development of public bureaucracy in the United States and the political, legal and social forces shaping it. Emergence and evolution of public administration as both a profession and a field of study. Major normative concerns underlying public administration theory and practice. The role of public bureaucracies in the policy-making process and efforts to achieve an effective and accountable public bureaucracy. (Y)
- 7650 (P S 7240) Urban Public Policy. Cr. 3**
Influences on urban policy makers, policy making and implementation, service distribution and policy impacts. Applications to substantive policy areas. (B)
- 7700 Projects in Urban Planning. Cr. 4**
Offered for S and U grades only. Development and application of research design to specified urban problems. (B)
- 7800 Internship in Planning. Cr. 3**
Prereq: urban planning major, written consent of instructor. Practicum for MUP Program. Field placement with public or nonprofit agency assigned by Urban Planning Intern Coordinator. (Y)
- 7990 Directed Study. Cr. 1-4 (Max. 8)**
Independent reading and research. (T)
- 7995 Seminar in Urban Planning. Cr. 3**
Prereq: urban planning major. Selected topics in study of housing and community development, local economic development and planning policy. (Y)
- 7996 Research Topics. Cr. 1-4 (Max. 6)**
Individual problems in urban planning. (T)
- 7999 Master's Essay Direction. Cr. 1-3**
Prereq: consent of adviser. (T)
- 8999 Master's Thesis Research and Direction. Cr. 1-8 (8 req.)**
Prereq: consent of adviser. (T)

URBAN STUDIES (U S)

- 6000 (CRJ 6000) Internship. Cr. 1-8 (Max. 8)**
Undergraduate credit only. Comprehensive internship program involving various criminal justice agencies. Placement may be made in court, corrections, police, juvenile justice, and other agencies at the state, county and local levels; opportunities include agency procedure and policy, patrol, case analysis, report writing and research. (T)
- 6010 Supervised Field Experience. Cr. 3**
Prereq: U S 4010. Undergraduate credit only. Field experience correlating theory with practical work. Meets with FAC 5992. (Y)

- 6050 (GEG 6520) Independent Field Study. (GPH 6520) Cr. 2-4 (Max. 4)**

Prereq: U S 4010 and consent of instructor. Observation and interpretation of data in the field. Preparation, use and evaluation of classroom units in K-12; for pre-college teachers taking course for credit towards an advanced degree. Class preparations prior to travel; for K-12 teachers, classroom unit use and evaluation. (Y)

URBAN, LABOR and METROPOLITAN AFFAIRS (ULM)

- 5999 Special Topics. Cr. 1-4 (Max. 8)**
Prereq: junior, senior, or graduate standing. (Y)
- 6100 Class, Race, and Politics in America. (AFS 6100) (HIS 5110) (P S 6050) (SOC 7330) (U P 7030) Cr. 3**
Prereq: senior standing or consent of instructor. Historical and analytic investigation into the role of class and race in American politics. (Y)
- 6150 Political Economy of the Urban Ghetto. (ECO 6810) (SOC 6850) (U P 6670) Cr. 3**
Prereq: graduate standing; upper division undergraduates by consent of instructor. Examination of the economic, social and political transformation of U.S. cities; particular attention to the formation, dynamics, economics and social sub-systems of urban ghettos and their relationship to broader contexts. (B)
- 6210 Regional, State, and Urban Economic Development: Policy and Administration. (ECO 6650) (P S 6440) (U P 6550) Cr. 3**
Prereq: graduate standing. Examination of regional, state, and local economic development theory, analysis, policy and administration. (B)
- 6350 Sociology of Urban Health. (SOC 6750) Cr. 3**
Prereq: graduate standing; undergraduates by consent of instructor. Review of theories and research on health status and health care delivery issues in urban communities. (Y)
- 6400 (U P 6350) Housing Policy and Programs. Cr. 3**
Governmental housing policies and programs at the Federal, state and local levels. Role of community-based organizations in housing activities. (Y)
- 6500 Challenges to an Aging Society in an Urban Environment. Cr. 3-4**
Prereq: graduate standing or consent of instructor. Impact of population aging and diminution of public policy-based social safety net on older individuals living in an urban environment. Impacts on housing options, urban space, quality of life (transportation, crime). (Y)
- 6600 (S W 6500) Social Work and the Law. Cr. 2**
Study of the relationship between law and social work practice. Emphasis on understanding the legal processes, the relationship and interdependence of law and social work practice and the knowledge and skill needed to help integrate law into social work practice. (W)
- 6680 Neighborhood Decline and Revitalization. (U P 6680) Cr. 3**
Examination of reasons for neighborhood change and how plans and policies can be specified and implemented for neighborhood improvement. (B)
- 6999 Special Topics. Cr. 3**
Open only to graduate students. (I)
- 7220 Seminar in Survey Research Methods. (ANT 7220) (P S 7620) (SOC 7220) Cr. 3**
Prereq: advanced undergraduate or graduate training in general research methods and statistics; open to upper level undergraduates with consent of instructor. Hands-on approach to understanding the strengths and potential pitfalls of the survey method. Topics include: design of survey research (including theory, measurement and eth-

ics), sampling (including special populations), questionnaire development and survey administration. (F)

7250 (P S 7250) Seminar in Urban Administration. (U P 7250) Cr. 3

Public administration in agencies with urban-related policy and program functions. Focus on: public services delivery; urban systems development; program-project design, implementation and evaluation; and intergovernmental relations. (B)

7260 Urban Poverty and Racial Segregation. (AFS 6600) (ANT 7260) (P S 7260) (SOC 7350) (U P 7260) Cr. 3

Prereq: graduate standing. Review of theories of poverty from various economic/political perspectives; historical intervention policies; current literature on interplay of racial, economic, spatial factors on growing economic inequality among urban whites and African-Americans. Political rationale and meaning of 'underclass' debate. (Y)



INDUSTRIAL RELATIONS

Office: 1262 Faculty/Administration Building; 577-4380;
Fax: 577-9969

Master Of Arts in Industrial Relations (MAIR)

The Master of Arts in Industrial Relations (MAIR) is an inter-college as well as an interdisciplinary graduate degree program administered by the College of Urban, Labor, and Metropolitan Affairs. The program is jointly sponsored by the Departments of Economics in the College of Liberal Arts, Psychology in the College of Science, and Management in the School of Business Administration. Policy direction is provided by the Academic Policy Committee comprised of one representative of each sponsoring department.

MAIR is designed to provide professional preparation for a career in human resource management and labor-management relations. Students will be prepared in this discipline for positions in government, business and union organizations, and the program staff will assist in the appropriate job placement of its graduates. MAIR will also provide knowledge and skills for persons who contemplate entering or who are already engaged in self-employment involving industrial relations, such as labor arbitration.

Admission

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 16. Admission is limited to holders of baccalaureate degrees from regionally accredited institutions and is granted only to those applicants who evidence promise of success in industrial relations study.

Admission to the program requires three letters of recommendation and completion of the program application form, in addition to the transcripts and application form required by the Graduate School. The letters of recommendation must be written by college or university professors the applicant has studied under, and/or current or former employers. The Graduate Record Examination (GRE) or the Graduate Management Admissions Test (GMAT) is required of all applicants. In the evaluation of applications, the Academic Policy Committee will consider: (1) the overall or upper-division honor point average; (2) GRE and GMAT scores; (3) applicant's performance in previous graduate courses, if any; (4) the quality of applicant's employment experience at increasing levels of responsibility; and (5) other appropriate indicators of successful performance as a graduate student, including the content of reference appraisals.

Prerequisites

Students who have been admitted but who do not possess all of the following prerequisites must remedy any deficiency, without graduate credit, before graduate courses are taken in the MAIR program: statistics (equivalent to ECO 4100 and 5100, or FBE 3300 and 4400); introductory micro- and macroeconomics (such as ECO 2010 and 2020). A grade of 'C' or better is required of all prerequisite courses.

Degree Requirements

MAIR requires the satisfactory completion of at least thirty-seven credits in graduate study, including a Core Curriculum of eight three-credit courses and one four-credit course. Two options are available:

Plan B: Nine core courses and two electives, plus a three-credit Master's Essay.

Plan C: Nine core courses and two electives, plus three additional credits for Internship and/or a Directed Study. Or: Nine core courses and three electives.

The Core Curriculum is as follows:

ECO 6420 — Labor Relations: Institutions and Public Policy	3
ECO 7370 — International Trade, Investment, and Labor Markets	3
PSY 6570 — Applied Research Methods in Union-Management Relations	3
I R 7450 — Employment Relations Law in North America	3
I R 8500 — Strategic Analysis of North American Labor	3
and Human Resources Issues (Capstone course: prerequisites include all other Core Courses.)	3
MGT 7640 — Management of Human Resources	3
MGT 7750 — Labor Relations and Collective Bargaining	3
MGT 7780 — Concepts and Processes of Dispute Resolution I: Negotiating Theory and Practice (D R 7210)	3
MKT 7600 — The North American Economy	3

Selection of electives will be guided by the student's prior preparation and career objectives and will require the approval of the student's graduate adviser. Electives are not limited to courses offered by the sponsoring departments.

I R 8500 is to be taken in the last nine credits of the program and only after the completion of the other eight Core Courses.

The topic and methodology of an *Essay or Directed Study* must have the prior approval of the Director, who must also approve the appointment of the faculty member who will supervise the project.

Scholarship: All course work must be completed in accordance with the academic procedures of the Graduate School and the College governing graduate scholarship and degrees; see pages 20-30 and 422, respectively.

Retention

Graduate students in the MAIR program will be required to earn a 'B' (3.0) average to satisfy degree requirements. *If a grade below 'B' is received in a core course, that course must be repeated promptly and a grade of 'B' or better obtained. A grade of 'C' in two graduate courses will constitute a sufficient basis for dismissal from the program.*

Candidacy

Students are expected to file a *Plan of Work* when nine graduate credits in the MAIR curriculum have been earned. Upon approval of the *Plan of Work* the student's rank will be changed from 'applicant' to 'candidate' provided the applicant's honor point average is at least 3.0.

Waivers

A Core Course may be waived only if the student demonstrates, to the satisfaction of the Academic Policy Committee, that he/she has completed an equivalent graduate-level course with a grade of 'B' or better and elects an additional approved elective course in its place.

Advising

All academic advising and the signing of Schedule Request forms will be done by the Director. Students should call the MAIR Office (577-4380) for information on advising hours.

Financial Aid

General sources of financial aid for graduate students may be found in the section on Graduate Financial Aid, beginning on page 30 of this bulletin. Those listed below pertain to the Industrial Relations Program:

The Michigan Public Employer Labor Relations Association Scholarship. Available to any student admitted to or enrolled in the MAIR program, it amounts to tuition reimbursement at the resident rate for up to nine credits for two consecutive semesters. The student must remain in good academic standing to obtain continued funding. Contact the Industrial Relations Program for details.

The Irving Bluestone Quality of Work Life Endowed Scholarship Fund: \$500 scholarship open to any full-time student majoring in

Labor or Labor-Management Relations. Recipients are selected based on scholastic achievement and financial need. Application deadline is May 15. Contact the University Office of Scholarships and Financial Aid for details.

U.A.W. National Retired Workers Council/Dave Miller Fund Scholarship: An award of \$500 open to any MAIR student who has satisfactorily completed a minimum of nine credits in course work and who is not the recipient of a tuition grant or scholarship award from any other source for the period covered by this award. Contact the Industrial Relations Program for details.

GRADUATE COURSES (I R)

Effective with the Winter Term 1998, the University converted the course numbering system from three digits to four digits. In order to make the equivalencies between the two numbering systems clear to students who have accrued academic records in both systems, the conversion has been done by simply appending a zero to each three-digit course number (220 becomes 2200, 575 becomes 5750, etc.) except in cases where the three-digit number ends in 90 to 99. In all instances where the number ends in 90 to 99, the last digit of the three-digit number is preserved as the last digit in the new four-digit number, and a nine is inserted as the third digit of the new number. (Thus, in these special x90 - x99 cases, 490 becomes 4990, 593 becomes 5993, 697 becomes 6997, etc.) All of the course numbers have been standardized to four digits in this edition of the Bulletin.

The following courses, numbered 5000-9999, are offered for graduate credit. Courses numbered 5000-6999 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 0900-4999). Courses in the following list numbered 5000-6999 may be taken for undergraduate credit unless specifically restricted to graduate students as indicated by individual course limitations. For interpretation of numbering system, signs and abbreviations, see page 509.

7400 Labor Relations Law in North America. Cr. 3

Federal and provincial regulation of union organizing, collective bargaining and union contract administration in the private sector. Content, administration and judicial interpretation of labor relations legislation in the United States, Mexico, and the Canadian province of Ontario. (Y)

7420 (P S 6070) Labor and American Politics. Cr. 3

Role of organized labor in American politics. Historical background, including rise of the UAW and its role in Detroit and Michigan politics. Recent declines; future of organized labor as a force in American politics. (B)

7430 Public Sector Labor Relations. (P S 6340) Cr. 3

Prereq: graduate standing. History, present functionings, problems and current controversies surrounding public sector unions. (B)

7450 Employment Relations Law in North America. Cr. 3

Federal and state legislation affecting employee-employer relations: discrimination, pension, occupational safety and health, fair labor standards. Implementation of these policies, effect on worker-manager relations: Canada, Mexico, United States. Required core course. (S)

7550 Selected Topics in Industrial Relations. Cr. 3

Various topics to be offered on a limited basis to meet needs of students with special interests not covered by regular course offerings. (I)

7600 Internship in Industrial Relations. Cr. 1-3 (Max. 4)

Prereq: enrollment in MAIR and consent of director. Active involvement in industrial relations duties for an employer, union, government agency, or industrial relations professional; apprenticeship to a labor arbitrator; or other appropriate opportunity for industrial relations experience. At least eight hours per week; may be paid or unpaid. (T)

7700 Current and Future Trends in Collective Bargaining.
Cr. 3

Prereq: four MAIR core courses or consent of instructor. Collective bargaining, current and future directions; emphasis on joint union-management approach to developing programs improving the quality of work life through workers' involvement in the decision-making process; examination of practical procedures to initiate and implement such programs. (F)

7990 Directed Study. Cr. 1-3

Prereq: MAIR course in relevant field; prior approval of MAIR director for topic and instructor. Intensive study of significant industrial relations topic against background of more general course work. Preparation of term paper required. (T)

7999 Master's Essay Direction. Cr. 3

Prereq: enrollment in MAIR; completion of 24 credits in MAIR program; consent of adviser. Plan B alternative to a three-credit elective course. Opportunity for intensive research and writing experience on relevant subject matter. (T)

8000 International Industrial Relations and Human Resources. (MGT 7810) Cr. 3

Prereq: MGT 7640, MGT 7750. Industrial relations and human resource management from an international perspective. Topics include: international investment, industrial relations strategies of U.S. multinationals, international relations systems in North America, Western Europe, and Asia-Pacific regions. (I)

8050 Workshop in Urban Employment Policy Analysis. Cr. 3

Prereq: SOC 6580. Student teams work with public, non-profit, and private organizations attempting to manage or solve urban employment problems. (Y)

8500 Strategic Analysis of North American Labor and Human Resources Issues. (ECO 7490) Cr. 3

Prereq: completion of all core courses; must be taken as part of last nine credits in MAIR program. Analysis on micro (game theory) and macro (planning) levels; integration of skills; student teams work as consultants for client organization on strategic labor or human resource problem. (Y)

FACULTY OF THE UNIVERSITY

FACULTY OF THE UNIVERSITY

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- ZAMORANO, LUCIA: B.S., M.D., Catholic University of Chile; Ph.D., Freie Universitat Berlin; Associate Professor of Neurosurgery.
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- ZDZINSKI, STEPHEN: B.M., University of Cincinnati; M.Ed., Ph.D., Indiana University; Assistant Professor of Music.
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- ZWAS, FRED: B.E.E., City College of New York; Ph.D., M.S.E., University of Michigan; Associate Professor of Ophthalmology.

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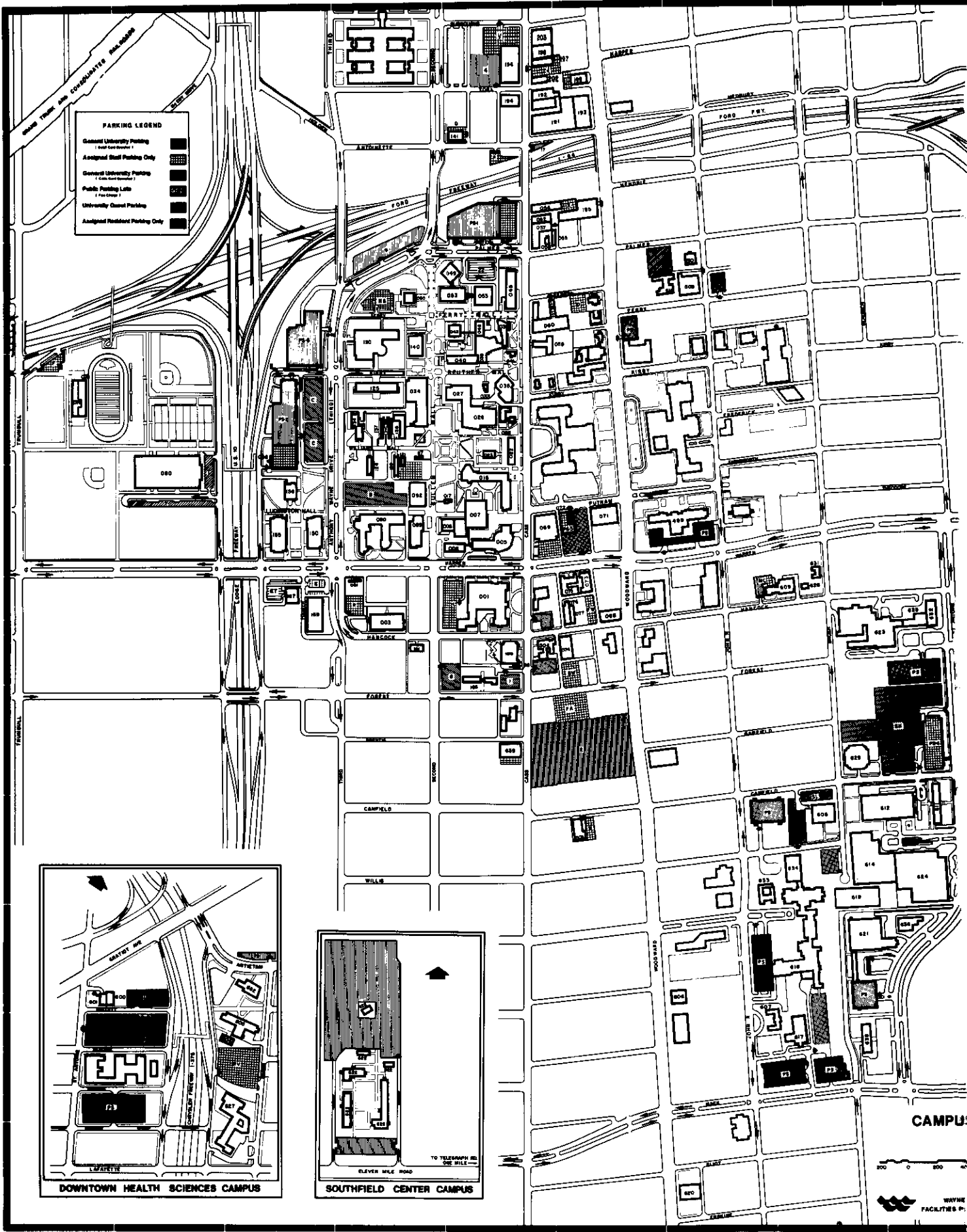
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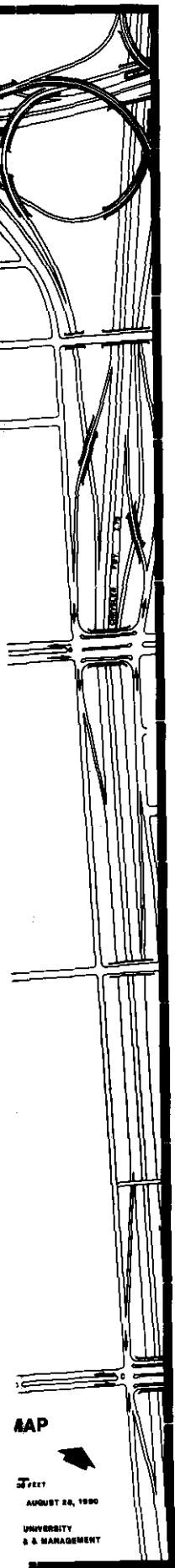
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SIGNS and ABBREVIATIONS,
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LEGEND OF UNIVERSITY AND ASSOCIATED BUILDINGS



- 001 Old Main – 4841 Cass Ave.
- 003 Physics Building – 666 West Hancock Ave.
- 005 Science Hall – 5045 Cass Ave.
- 006 Life Science Building – 5000 Gullen Mall
- 007 Chemistry Building – 5101 Cass Ave.
- 008 Science & Engineering Library – 5048 Gullen Mall
- 016 State Hall – 5143 Cass Ave.
- 017 Frederick Linsell House – 5104 Gullen Mall
- 022 Meyer & Anna Prentis Building – 5201 Cass Ave.
- 023 Helen L. DeRoy Auditorium – 5203 Cass Ave.
- 026 G. Flint Purdy Library – 5244 Gullen Mall
- 027 Kresge Library – 5294 Gullen Mall
- 028 William C. Randa House – 5229 Cass Ave.
- 033 Max Jacob House (Art History Bldg.) – 451 Reuther Mall
- 034 Student Center Building – 5221 Gullen Mall
- 036 W. P. Reuther Library of Labor & Urban Affairs – 5401 Cass Ave.
- 038 Emma Lazaroff Schaver Music Building – 5451 Cass Ave.
- 039 Community Arts Center – 450 Reuther Mall
- 040 Art Building – 5400 Gullen Mall
- 041 Music Annex – 5415 Cass Ave.
- 042 Alumni House – 441 Ferry Mall
- 043 McGregor Memorial Conference Center – 495 Ferry Mall
- 045 Parking Structure #5 – 5501 Anthony Wayne Dr.
- 048 Richard Cohn Building – 5557 Cass Ave.
- 049 Law School Annex – 495 West Palmer Ave.
- 050 Natural Science Building – 5501 Gullen Mall
- 051 Parking Structure #1 – 450 West Palmer Ave.
- 052 Art Building North – 5740 Cass Ave.
- 053 Law School Building – 468 Ferry Mall
- 054 University Storage Warehouse – 5750 Cass Ave.
- 055 70 West Palmer Ave.
- 056 Parking Structure #2 – 5150 John Lodge Service Dr.
- 057 5700–5724 Cass Ave.
- 058 Thomas S. Sprague House – 80 West Palmer Ave.
- 060 University Services Building – 5454 Cass Ave.
- 064 Beecher House (University Development Offices) – 5475 Woodward Ave.
- 069 David Mackenzie Hall – 5050 Cass Ave.
- 072 Parking Structure #3 – 69 Putnam St.
- 073 51 West Warren Ave.
- 074 95 West Hancock Ave.
- 075 Psychology Building – 71 West Warren Ave.
- 076 Biology Research Building – 84 West Hancock Ave.
- 077 Public Safety Building – 76 West Hancock Ave.
- 078 Stadium Auxiliary Building – 1401 Edsel Ford Service Dr.
- 079 Wayne State Stadium – 1401 Edsel Ford Service Dr.
- 080 Matthaei Physical Education Center – 5101 John Lodge Service Dr.
- 081 Auxiliary General Office Building – 701 West Warren Ave.
- 089 Biological Sciences Building – 5047 Gullen Mall
- 090 Engineering Building – 5050 Anthony Wayne Dr.
- 092 Wayne State University Bookstore – 5125 Gullen Mall
- 117 5165 Gullen Mall
- 120 Katherine Faville Residence Hall – 645 Williams Mall
- 121 Humanities Office – 631 Williams Mall
- 124 Santa Fe Apartments – 681 Williams Mall
- 125 Helen N. Joy Student Services Building – 655 West Kirby Ave.
- 130 Faculty/Administration Building – 656 West Kirby Ave.
- 134 Helen L. DeRoy Apartments – 5200 Anthony Wayne Dr.
- 136 Chatsworth Tower Apartments – 630 Williams Mall
- 137 Chatsworth Annex – 650 Williams Mall
- 140 Education Building – 5425 Gullen Mall
- 141 Music Building North – 5900 Second Ave.
- 150 General Lectures – 5045 Anthony Wayne Dr.

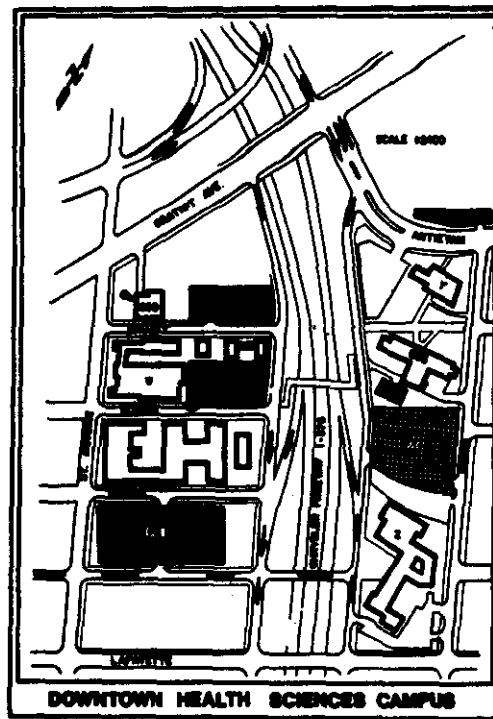
- 155 Alex Manooogian Hall – 906 West Warren Ave.
- 156 St. Andrew's Church – 918 Ludington Mall
- 167 Engineering Technology Building – 4855 Fourth St.
- 169 Bioengineering Building – 618 West Hancock Ave.
- 181 Sherbrooke Apartments – 615 West Hancock Ave.
- 186 Forest Apartments – 460 West Forest Ave.
- 188 David Mackenzie House – 4735 Cass Ave.
- 189 Hilberry Theatre – 4743 Cass Ave.
- 191 Administrative Services Bldg. #1&2 – 5950 Cass Ave.
- 192 Administrative Services Bldg. #3 – 5980 Cass Ave.
- 193 Computing Center Building – 5925 Woodward Ave.
- 194 Pontiac Building (Transp. Services Bldg.) – 425 York St.
- 195 University Custodial Grounds Bldg. – 5743 Woodward Ave.
- 196 Criminal Justice Building – 6001 Cass Ave.
- 197 General Services Annex #1 – 6012 Cass Ave.
- 198 General Services Building #2 – 6030 Cass Ave.
- 199 Leonard N. Simons Building – 5959 Woodward Ave.
- 503 77 West Canfield Ave.
- 504 Thompson Home – 4756 Cass Ave.
- 509 Pauline Knapp Bldg. (Merrill-Palmer) – 87 East Ferry Ave.
- 510 Skillman Building (Merrill-Palmer) – 100 East Palmer Ave.
- 511 Charles L. Freer House (Merrill-Palmer) – 71 East Ferry Ave.
- 522 Southfield Center – 25610 West Eleven Mile Rd.
- 600 Clinical Laboratory Building – 645 Mullett St.
- 601 Occupational & Environmental Health Lab – 625 Mullett St.
- 604 Health Science Annex – 1390 Chrysler Service Dr.
- 605 Shapero Hall – 1400 Chrysler Service Dr.
- 608 Vera Shiffman Medical Library – 4325 Brush
- 609 C. S. Mott Center – 275 East Hancock Ave.
- 610 Mortuary Science Building – 627 West Alexandrine St.
- 611 Helen Vera Prentis Lande Bldg. – 550 East Canfield Ave.
- 612 Gordon H. Scott Hall of Basic Medical Science – 540 East Canfield Ave.
- 613 Parking Structure #4 – 545 East Canfield Ave.
- 615 Kresge Eye Institute – 3994 John R. Ave.
- 620 Bonstelle Theatre – 3424 Woodward Ave.
- 628 Louis M. Elliman Clinical Research Bldg. – 421 East Canfield Ave.
- 639 Federal Mogul Library Annex – 4455 Cass Ave.
- A Detroit Historical Museum – 5401 Woodward Ave.
- B Detroit Public Library – 5201 Woodward Ave.
- BB First Unitarian Universalist Church – 4605 Cass Ave.
- C Public School Center Building – 5057 Woodward Ave.
- CC Our Lady of the Rosary Church – 5930 Woodward Ave.
- DD Cathedral Church of St. Paul – 4800 Woodward Ave.
- E International Institute – 111 East Kirby Ave.
- EE First Congregational Church of Detroit – 33 East Forest Ave.
- F Detroit Institute of Arts (DIA) – 5200 Woodward Ave.
- FF First Church of Christ, Scientist (Reading Room) – 4830 Cass Ave.
- G Rackham Educational Memorial Building – 60–100 Farnsworth Ave.
- H Detroit Science Center – 5020 John R. Ave.
- I Center for Creative Studies – 245 East Kirby Ave.
- J Michigan Cancer Foundation – 110 East Warren Ave.
- K Hannan House – 4750 Woodward Ave.
- M Harper Hospital – 3990 John R. Ave.
- N Rehabilitation Institute – 261 Mack Ave.
- P Children's Hospital of Michigan – 3901 Beaubien St.
- R Ronald McDonald House – 3911 Beaubien St.
- T University Health Center (UHC) – 4201 St. Antoine Blvd.
- U Detroit Receiving Hospital (DRH) – 4201 St. Antoine Blvd.
- W-1 Hutzel Hospital – 4707 St. Antoine Blvd.
- W-2 Hutzel Professional Building – 4727 St. Antoine Blvd.
- W-3 Hutzel Annex – 4827 Brush St.
- W-4 4454–4466 Woodward Ave.
- Y Wayne County Medical Society – 1010 Antietam St.
- Z Lafayette Clinic – 951 East Lafayette Blvd.

MAP

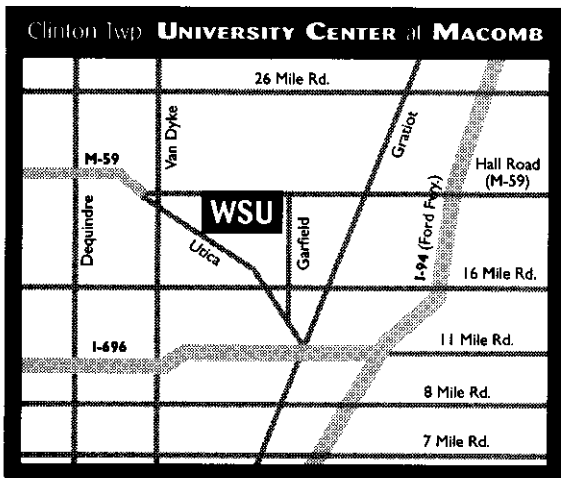
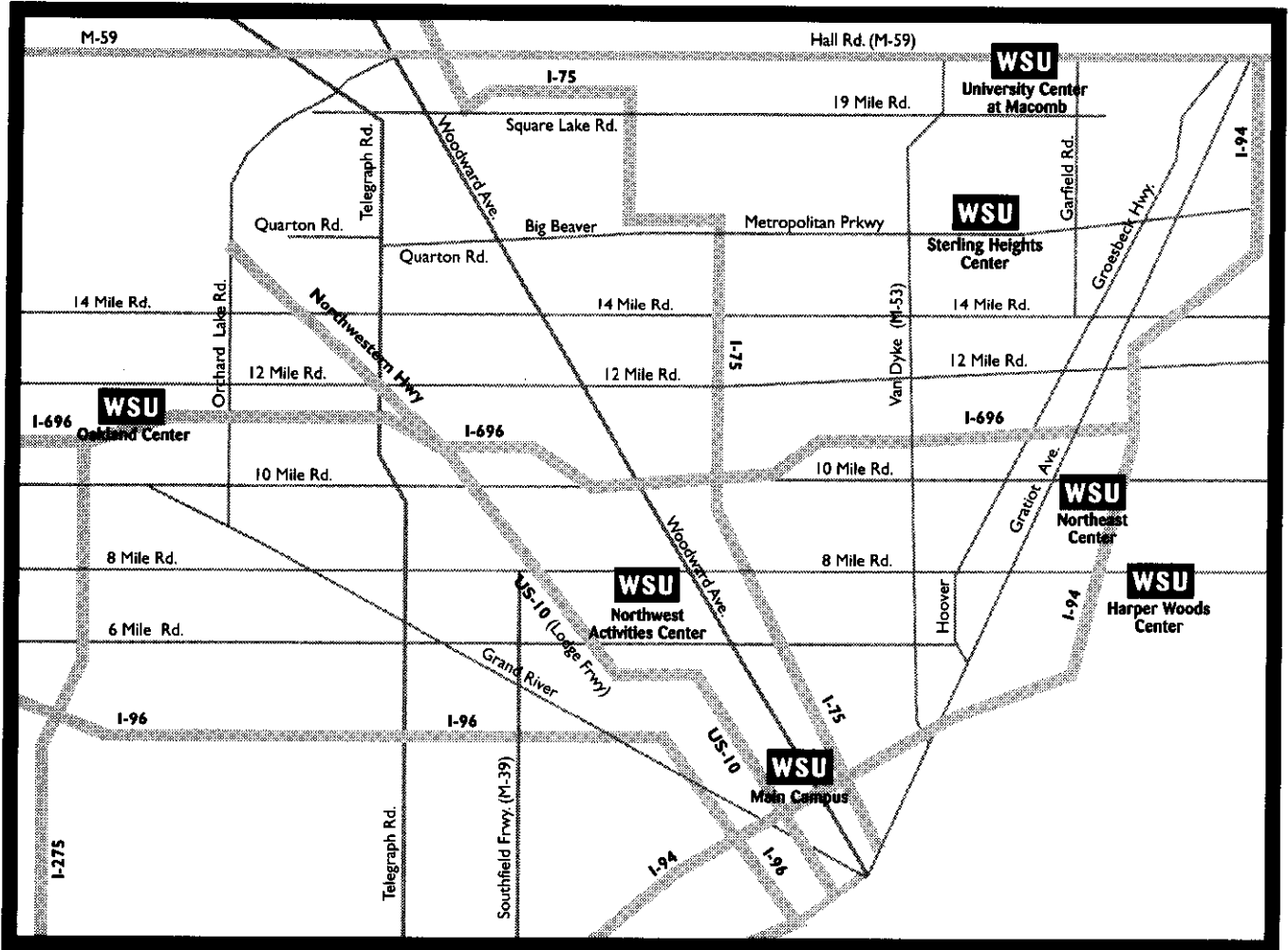
1/2" = 1' SCALE
AUGUST 28, 1990
UNIVERSITY & MANAGEMENT

DOWNTOWN MEDICAL CENTER

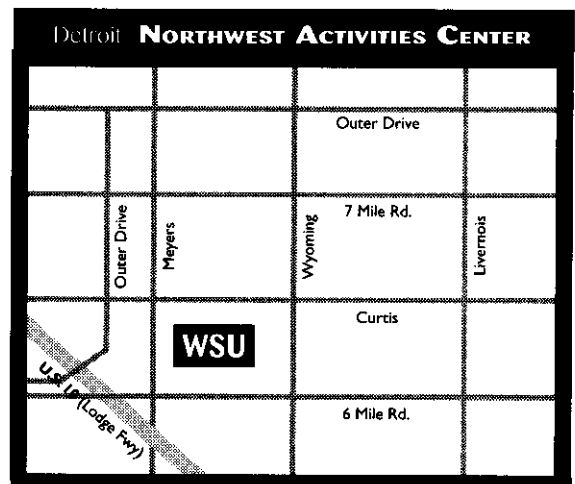
- 600 Clinical Laboratory Building
- X Detroit General Hospital
- W Detroit Memorial Hospital
- 604 Health Sciences Annex
- 605 Health Sciences
- Z Lafayette Clinic
- Y Wayne County Medical Society



off-campus class locations

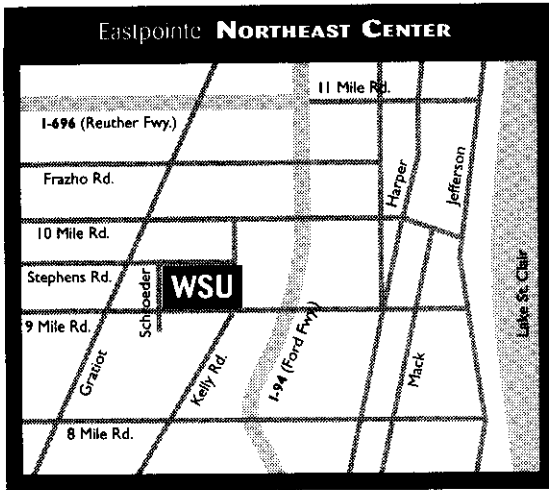


Clinton Twp UNIVERSITY CENTER at MACOMB
Macomb Community College Center Campus
 44575 Garfield Road • Clinton Township, Michigan 48038
(810) 263-6700 or **(313) 577-6261**
 Mon-Thu, 8:30am-7pm • Fri, 8:30am-5pm
 (Academic and financial advising by appointment)



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 18100 Meyers Road • Detroit, MI 48235
(313) 577-0613
 Mon-Thu, 8:30am-10pm • Fri, 8:30am-5pm • Sat, 8:30am-12:30pm

off-campus class locations

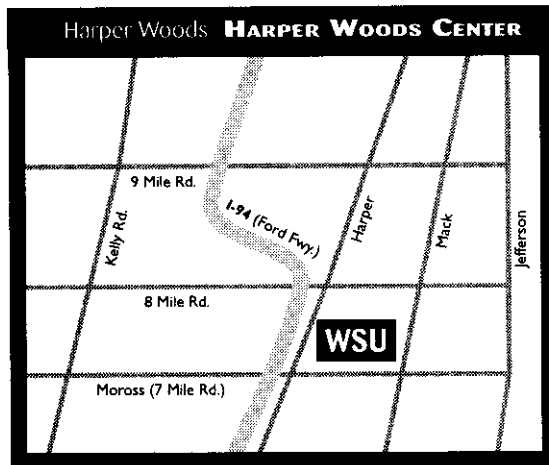


St. Basil School

22860 Schroeder • Eastpointe, MI 48021

(810) 771-3730 or **(313) 577-3590**

Mon-Thu, 8:30am-10pm • Fri, 8:30am-5pm • Sat 9-4pm



Bishop Gallagher High School

19360 Harper Avenue • Harper Woods, MI 48225

(313) 881-2438

Mon-Thu, 5-10pm

(no daytime hours, call Univ. Ctr. at Macomb (810) 263-6700)

on-campus registration services

Academic/Administrative Building

5700 Cass, 2nd Floor • Detroit, MI 48202

(313) 577-4671

Mon-Fri 8:30am-5pm

Off-campus credit programs **(313) 577-4682**

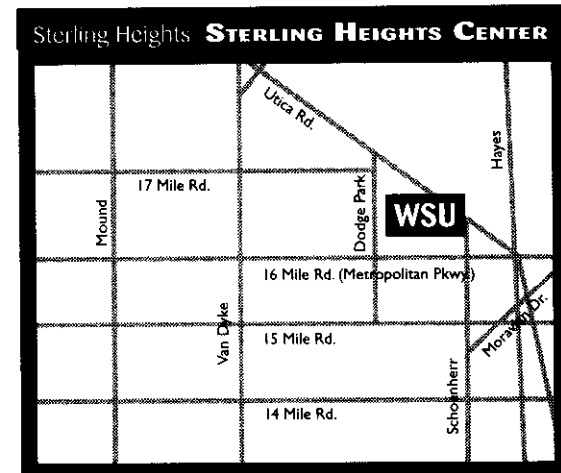


33737 W. 12 Mile Rd. • Farmington Hills, MI 48331

(248) 553-3545 or **(313) 577-3592**

Mon-Thu, 8:30am-10pm • Fri, 8:30am-5pm • Sat, 8:30am-5pm

(office open until 9pm, Mon-Thu)



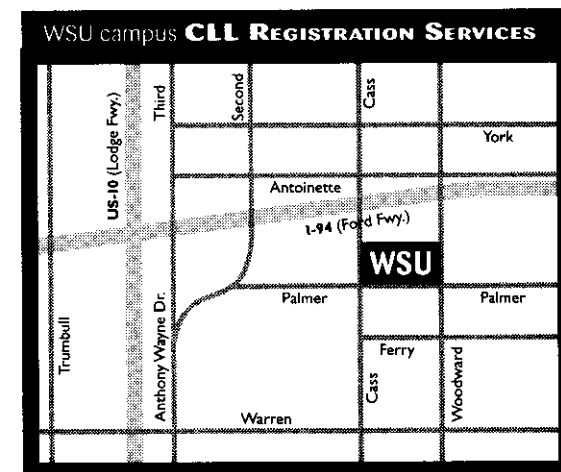
Heritage Junior High School

37400 Dodge Park • Sterling Heights, MI 48312

(810) 978-7881 or **(313) 577-6261**

Mon-Thu, 5-10pm

(phone calls only)



SIGNS and ABBREVIATIONS

SUBJECT AREA CODES

Subject area codes are two- or three-letter prefixes to the numbers used to identify courses offered by the University. The following index identifies the subject content of these codes and indicates the page number on which courses may be found.

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COURSE NUMBERING SYSTEMS

For the College of Education

5000-6999 — Undergraduate or graduate credit.
 7000-8999 — Open to graduate students exclusively.
 9000-9999 — Open to doctoral students exclusively.

For the Faculty of Pharmacy

6000-6999 — Undergraduate/Graduate Courses.
 7000-8999 — Graduate Courses.
 9000-9999 — Ph.D. Courses.

For all other Schools and Colleges

5000-6999 — Junior- and senior-level courses; also may be taken for graduate credit by students admitted to a graduate program, except where expressly prohibited.
 7000-8999 — Open to graduate/professional students exclusively.
 9000-9999 — Open to doctoral students exclusively.

SYMBOLS and ABBREVIATIONS

Used in Course Listings

Course Offering Frequency: Parenthetical letters at the end of course descriptions identify the term and frequency courses will be offered.

- (B) — Offered every other year.
- (F) — Offered Fall Term
- (I) — Offered irregularly.
- (S) — Offered Spring/Summer Term.
- (T) — Offered every term.
- (W) — Offered Winter Term.
- (Y) — Offered at least once every academic year
(Fall or Winter, not Spring/Summer).

Course Activity: The following abbreviations used in some Courses of Instruction sections indicate the basic instructional mode (or modes) of certain courses. The number following the abbreviation indicates the number of clock hours per week assigned to that mode:

- CLN — Clinic
- DSC — Discussion
- FLD — Field
- IND — Individual
- LAB — Laboratory
- LCT — Lecture
- OTH — Other
- QUZ — Quiz
- SMR — Seminar
- STD — Studio
- T V — Television

Courses of Instruction Abbreviations:

Cr. Credit: The amount of credit indicated by the number or numbers following the abbreviation.

Max. Maximum: Course may be re-elected to the maximum credit indicated

Prereq. Prerequisite: Course must be preceded by the indicated course or courses or other requirements.

Coreq. Corequisite: Course must be accompanied by the indicated course or courses.

Cross-listed courses may be taken for major credit in more than one department, as indicated by cross-references which appear in parentheses either before or after the title. In registering for cross-listed courses, the student should be certain that he/she has designated the department and course number under which he/she wishes to earn the credit.

Faculty Roster

(FTA) — Full-Time Affiliate

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