

# NEWS BULLETIN



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# Academic Calendar 1992 – 1994

## Spring/Summer Term, 1992

Term begins	Sun., May 3, 1992
Final registration	Tues., May 5 – Wed., May 6
Spring and Spring/Summer Classes begin	Mon., May 11
Last day for filing degree applications	Mon., May 11
Memorial Day recess	Mon., May 25
<sup>1</sup> Day scheduled as Monday for Spring and Spring/Summer Sessions	Fri., May 29
Mail registration for Fall Term	Mon., June 22 – Fri., July 10
Classes end for Spring Session	Sat., June 27
Examination period for Spring Session	Mon., June 29 – Tues., June 30
Summer Session begins	Wed., July 1
Independence Day recess	Fri., July 3
Classes end for Spring/Summer Term	Sat., Aug. 1
Examination week for Spring/Summer Term	Mon., Aug. 3 – Thurs., Aug. 6
Classes end for Summer Session	Tues., Aug. 18
Study Day for Summer Session	Wed., Aug. 19
Examination period for Summer Session	Thurs., Aug. 20 – Fri., Aug. 21
Spring/Summer Term ends	Sat., Aug. 29, 1992

## Fall Term, 1992

<sup>2</sup> University year appointments begin	Sun., Aug. 30, 1992
Term begins	Sun., Aug. 30
Final registration	Mon., Aug. 31 – Thurs., Sept. 3
Labor Day recess	Mon., Sept. 7
Classes begin	Tues., Sept. 8
Last day for filing degree applications	Tues., Sept. 8
Mail registration for Winter Term	Mon., Oct. 19 – Fri., Nov. 6
<sup>1</sup> Day scheduled as Thursday	Tues., Nov. 24
<sup>1</sup> Day scheduled as Friday	Wed., Nov. 25
Thanksgiving Day recess	Thurs., Nov. 26 – Sat., Nov. 28
Commencement	Thurs., Dec. 10
Classes end	Wed., Dec. 16
Examination week	Thurs., Dec. 17 – Wed., Dec. 23
Holiday recess	Fri., Dec. 25, 1992 – Fri., Jan. 1, 1993
Term ends	Thurs., Dec. 31, 1992

## Winter Term, 1993

Term begins	Fri., Jan. 1, 1993
Final registration	Tues., Jan. 5 – Fri., Jan. 8
Classes begin	Tues., Jan. 12
Last day for filing degree applications	Tues., Jan. 12
Mail registration for Spring/Summer Term	Mon., Feb. 22 – Fri., March 12
Spring recess	Mon., March 15 – Sat., March 20
Classes end	Mon., April 26
Study Day	Tues., April 27
Examination week	Wed., April 28 – Tues., May 4
Term ends	Tues., May 4
Commencement	Tues., May 4
<sup>2</sup> University year appointments end	Sun., May 30, 1993

## Spring/Summer Term, 1993

Term begins	Wed., May 5, 1993
Final registration	Wed., May 5 – Thurs., May 6
Spring and Spring/Summer Classes begin	Mon., May 10
Last day for filing degree applications	Mon., May 10
Memorial Day recess	Mon., May 31
<sup>1</sup> Day scheduled as Monday for Spring and Spring/Summer Sessions	Fri., June 4
Mail registration for Fall Term	Mon., June 21 – Fri., July 9
Classes end for Spring Session	Fri., June 25
Examination period for Spring Session	Mon., June 28 – Tues., June 29
Summer Session begins	Wed., June 30
Independence Day recess	Mon., July 5
<sup>1</sup> Day scheduled as Monday for Spring/Summer and Summer Sessions	Fri., July 9
Classes end for Spring/Summer Term	Fri., July 30
Examination week for Spring/Summer Term	Mon., Aug. 2 – Thurs., Aug. 5
Classes end for Summer Session	Tues., Aug. 17
Study Day for Summer Session	Wed., Aug. 18
Examination Period for Summer Session	Thurs., Aug. 19 – Fri., Aug. 20
Spring/Summer Term ends	Sat., Aug. 28, 1993

## Fall Term, 1993\*

<sup>2</sup> University year appointments begin	Sun., Aug. 29, 1993
Term begins	Sun., Aug. 29
Final registration	Mon., Aug. 30 – Thurs., Sept. 2
Labor Day recess	Mon., Sept. 6
Classes begin	Tues., Sept. 7
Last day for filing degree applications	Tues., Sept. 7
Mail registration for Winter Term	Mon., Oct. 18 – Fri., Nov. 5
<sup>1</sup> Day scheduled as Thursday	Tues., Nov. 23
<sup>1</sup> Day scheduled as Friday	Wed., Nov. 24
Thanksgiving Day recess	Thurs., Nov. 25 – Sat., Nov. 27
Classes end	Wed., Dec. 15
Study Day	Thurs., Dec. 16
Commencement	Thurs., Dec. 16
Examination week	Fri., Dec. 17 – Thurs., Dec. 23
Holiday recess	Sat., Dec. 25, 1993 – Sat., Jan. 1, 1994
Term ends	Fri., Dec. 31, 1993

## Winter Term, 1994\*

Term begins	Sat., Jan. 1, 1994
Final registration	Tues., Jan. 4 – Fri., Jan. 7
Classes begin	Tues., Jan. 11
Last day for filing degree applications	Tues., Jan. 11
Mail registration for Spring/Summer Term	Mon., Feb. 21 – Fri., March 11
Spring recess	Mon., March 14 – Sat., March 19
Classes end	Mon., April 25
Study Day	Tues., Apr 26
Examination week	Wed., April 27 – Tues., May 3
Term ends	Tues., May 3
Commencement	Tues., May 3
<sup>2</sup> University year appointments end	Sun., May 29, 1994

<sup>2</sup> University Year Appointments begin on the first day of the Fall Term for a full nine months duration. Individual service assignments are the responsibility of the appropriate dean, or by delegation, the department chairperson.

\* Tentative

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

# 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, as well as descriptions and locations of University student services. For additions, amendments, and specific applications of the following regulations, consult the individual school and college sections of this bulletin.*

*For undergraduate regulations, degree programs and curricula, consult the Wayne State University Undergraduate Bulletin.*

*It is the responsibility of the student to meet and satisfy all University, college and program requirements.*

# Administration of the University

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# 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 162,508 living alumni. More than 118,793 of them live in the state and more than 103,800 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.

## 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 458.)

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  
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 Provost and by the President and, whenever they involve major educational policy decisions, by the University Council.

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
- Bioengineering Center
- Cancer Institute
- Center for Academic Ethics
- Center for Automotive Research
- Center for Chicano-Boricua Studies
- Center for Health Research
- Center for International Business Education and Research
- Center for Judaic Studies
- Center for Legal Studies
- Center for Molecular Biology
- Center for Peace and Conflict Studies
- Center for Prevention and Control of Interpersonal Violence
- Center for Urban Studies
- C.S. Mott Center for Human Growth and Development
- Developmental Disabilities Institute
- Information Technology Institute
- Institute for Manufacturing Research
- Institute of Chemical Toxicology
- Institute of Gerontology
- Institute of Maternal and Child Health
- Labor Studies Center
- The Management Center
- Merrill-Palmer Institute for Family and Human Development
- Michigan Small Business Development Center
- Race Relations Institute
- Radiation Oncology Center

## The Graduate School

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.

## Graduate Council

The Graduate Council, the policy formulating agency for the Graduate School, is composed of twenty-three members elected from the regular graduate faculty of the various schools and colleges of the University, the Dean of the Graduate School, and three members of the graduate faculty appointed by the Dean of the Graduate School.

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, the master's degrees in Industrial Relations (M.A.I.R.) and Library Science (M.S.L.S.), and interdisciplinary graduate certificates.

The Council meets monthly during the academic year, and all meetings are open to the University community.

## 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.

## Accreditation

Wayne State University as a whole is accredited as a doctoral degree-granting institution by the regional accrediting agency, the North Central Association of Colleges and Secondary Schools. 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.

## 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 directed to the Assistant Vice President for Neighborhood Relations, Office of Equal Opportunity and Neighborhood Relations, 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 42 for description of services available to disabled students.)



## 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
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
MM	.....	Master of Music
MPA	.....	Master of Public Administration
MS	.....	Master of Science
MSET	.....	Master of Science in Engineering Technology
MSLS	.....	Master of Science in Library Science
MSN	.....	Master of Science in Nursing
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 Science
TC	.....	Teaching Certificate
<i>I</i>	.....	<i>Baccalaureate or First Professional Degree</i>
<i>II</i>	.....	<i>Post-Bachelor or Graduate Certificate</i>
<i>III</i>	.....	<i>Teaching Certificate</i>
<i>IV</i>	.....	<i>Master's Degree</i>
<i>V</i>	.....	<i>Specialist Certificate</i>
<i>VI</i>	.....	<i>Doctoral Degree</i>

# 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>
<b>School of Business Administration</b>						
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					
<b>College of Education</b>						
Adult and Continuing Education .....				MEd		
Art Education .....	BA, BS		TC	MEd		
Bilingual/Bicultural Education .....	BA, BS		TC	MEd		
Business Education .....	BA, BS		TC			
Counseling .....	MA			MEd	ESC	EdD, PhD
Curriculum and Instruction .....						EdD, PhD
Curriculum and Instruction (Elementary) .....					ESC	
Curriculum and Instruction (Secondary) .....					ESC	
Dance Education (Secondary) .....			TC			
Distributive Education .....	BA, BS		TC			
Elementary Education .....	BA, BS		TC	MAT, MEd	ESC	EdD, PhD
English Education (Secondary) .....	BA, BS		TC	MEd	ESC	
Evaluation and Research, Education .....				MEd		EdD, PhD
Family Life Education .....	BA, BS		TC			
Foreign Language Education (Secondary) .....	BA, BS		TC	MEd		
General Administration and Supervision .....					ESC	EdD, PhD
General Education .....					ESC	
Health Education .....			TC	MEd		
Health and Fitness Program Management .....		PBC				
Health Occupations Education .....	BA, BS		TC			
Higher Education .....						EdD, PhD
History and Philosophy of Education .....				MEd		EdD, PhD
Industrial Education .....	BA, BS		TC			
Instructional Technology .....				MEd	ESC	EdD, PhD
Leadership, Educational .....				MEd		
Mathematics Education .....	BA, BS		TC	MEd	ESC	
Music (Instrumental and Vocal) .....			TC			
Physical Education .....	BA, BS		TC	MEd		
Physical Education (K-12) .....			TC			
Pre-School and Parent Education .....				MEd		
Psychology, Educational .....				MEd	ESC	EdD, PhD
Psychology, School and Community .....				MA	ESC	
Reading .....				MEd	ESC	EdD
Recreation and Park Services .....	BS			MA		
Science Education .....	BA, BS		TC	MEd	ESC	
Secondary Education .....			TC	MAT		
Social Studies Education (Secondary) .....	BA, BS		TC	MEd	ESC	
Sociology, Educational .....				MEd	ESC	EdD, PhD
Special Education (Administration) .....					ESC	EdD, PhD
Special Education .....	BA, BS		TC	MEd	ESC	EdD, PhD
Speech Education (Secondary) .....	BA, BS		TC			
Sports Administration .....				MA		
Vocational Education .....			TC	MEd	ESC	EdD, PhD
Vocational Rehabilitation Counseling .....				MA	ESC	

*School/College and Major*

*I II III IV V VI*

**College of Engineering**

Chemical Engineering .....	BS			MS		PhD
Civil Engineering .....	BS			MS		PhD
Computer Engineering .....				MS		PhD
Electrical Engineering .....	BS			MS		PhD
Electrical/Electronic Engineering Technology .....	BSET					
Electromechanical Engineering Technology .....	BSET					
Electronics and Computer Control Systems .....				MS		
Engineering Technology .....				MSET		
Hazardous Waste Control/Management .....		GC		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 Engineering Technology .....	BSET					
Operations Research .....				MS		PhD
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 .....	BS		TC			
Design and Merchandising .....	BA, BS			MA		
Film Studies .....	BA					
Journalism* .....	BA					
Museum Practice .....						PMC
Music .....	BA, BM		TC	MA, MM		
Public Relations .....	BA					
Radio-Television-Film* .....	BA					
Theatre .....	BFA			MA, MFA		PhD

**Graduate School**

Archival Administration .....	GC					
Child and Family Studies .....	GC					
Developmental Disabilities .....	GC					
Gerontology .....	GC					
Infant Mental Health .....	GC					
Library Science .....				MSLS		SPL

**Law School**

Corporate and Financial Law .....				LLM		
Joint JD/MA in Political Science .....	JD			MA		
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		

**College of Liberal Arts (continued)**

Audiology					MA	PhD
Biological Sciences*	BA, BS				MS	PhD
Chemistry*	BA, BS				MA, MS	PhD
Classical Civilization*	BA					
Classics*	BA				MA	
Communication Disorders and Sciences	BA				MA	PhD
Comparative Literature					MA	
Computer Science*	BA, BS	PBC			MA, MS	PhD
Criminal Justice*	BS				MS, MPA	
Dietetics	BS					
East European Studies					MA	
Economics*	BA				MA	PhD
English*	BA				MA	PhD
English, Teaching College					MA	
Film Studies	BA					
French*	BA				MA	
Geography*	BA					
Geology	BA, BS				MS	
German*	BA				MA	
Greek*	BA					
Hebrew*	BA					
History*	BA				MA	PhD
Human Development	BA					
Humanities*	BA					
Information Systems	BA					
International Studies (Co-Major Program)	BA					
Italian*	BA				MA	
Language, Modern Foreign	PhD					
Latin*	BA				MA	
Linguistics	BA				MA	
Mathematical Statistics	MA					
Mathematics*	BA, BS				MA, MS	PhD
Mathematics, Applied					MA	
Mathematics, Teaching College					MA	
Molecular Biotechnology					MS	
Near Eastern and Asian Studies*	BA					
Near Eastern Languages*	BA				MA	
Nutrition and Food Science*	BA, BS				MA, MS	PhD
Peace and Conflict Studies (Co-Major Program)	BA					
Philosophy*	BA				MA	PhD
Physics	BA, BS				MA, MS	PhD
Polish*	BA					
Political Science*	BA				MA	PhD
Political Science/Law (joint JD/MA)	JD				MA	
Psychology*	BA, BS, BAS				MA	PhD
Public Administration					MPA	
Public Affairs	BPA					
Russian*	BA				MA	
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
Service Agency Administration	PBC

<i>School/College and Major</i>	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>V</i>	<i>VI</i>
<b>School of Medicine</b>						
Anatomy and Cell Biology				MS		PhD, MD/PhD
Audiology				MA		PhD
Biochemistry				MS		PhD, MD/PhD
Cancer Biology						PhD
Cellular and Clinical Neurobiology						PhD
Community Health Services				MS		
Community Health Services Research and Evaluation		GC				
Immunology and Microbiology				MS		PhD, MD/PhD
Medical Physics						PhD
Medical Research				MS		
Basic Medical Sciences				MS		
Medicine		MD				
Molecular Biology and Genetics				MS		PhD
Pathology						PhD
Pharmacology				MS		PhD, MD/PhD
Physiology				MS		PhD, MD/PhD
Radiological Physics				MS		
<b>College of Nursing</b>						
Adult Primary Care Nursing				MSN		
Adult Psychiatric Mental Health				MSN		
Advanced Medical-Surgical Nursing				MSN		
Child and Adolescent Psychiatric Nursing				MSN		
Community Health Nursing				MSN		
Health Care Evaluation					SCP	
Nursing		BSN		MSN		PhD
Nursing Administration					SCP	
Nursing Education			GC			
Nursing, Parenting and Families				MSN		
Transcultural Nursing				MSN		
<b>College of Pharmacy and Allied Health Professions</b>						
Anesthesia				MS		
Medical Technology		BS		MS		
Mortuary Science		3 Yr.Certif.				
Mortuary Science		BSMS				
Occupational and Environmental Health				MS		
Occupational Therapy		BS	PBC	MS		
Pathologist Assistant		BS				
Pharmaceutical Sciences, Experimental Techniques			GC			
Pharmaceutical Sciences				MS		PhD
Pharmacy		BS				
Pharmacy, Clinical						PharmD
Pharmacy, Hospital				MS		
Physical Therapy		BS				
Radiation Therapy Technology		BS				
<b>School of Social Work</b>						
Social Work		BSW			MSW	
Social Work Practice with Families and Couples			GC			
<b>College of Urban, Labor, and Metropolitan Affairs</b>						
Chicano-Boricua Studies (Co-Major Program)		BA				
Geography				MA		
Industrial Relations				MAIR		
Labor Studies		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 an adviser'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 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 departmental adviser 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 an adviser 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 for Graduate 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 for Graduate 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 for Graduate 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 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 Officer 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 prerequisites 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 for Graduate 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.** 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 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 for Graduate 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 500-699 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 for Graduate Admissions.

**Visiting Doctoral Guests:** Persons with earned doctorates who are certified as Visiting Doctoral Guests may obtain University library privileges and attend classes upon invitation of the department involved. No official record of attendance is kept on such guests. Permission must be obtained from the Graduate School.

## 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 Graduate Admissions Office for further information and instructions.

## Post-Bachelor Admission

Applicants are advised that this is an undergraduate admission classification. Holders of bachelor's degrees from accredited institutions who wish to take courses that are not to be used for graduate credit are advised to apply for post-bachelor status. Courses elected while in post-bachelor status may be used to fulfill prerequisite requirements for graduate admission but will not count toward, and may not be converted to, graduate credit. Please check with the Admissions or Registrar's Office for other regulations regarding this status.

## Post-Baccalaureate Programs

The Post-Baccalaureate Program in the College of Liberal Arts is a unique program for minority and disadvantaged students of high potential who intend to pursue doctoral study in one of the following departments: Biology, Chemistry, Economics, Mathematics, Physics, Political Science, Psychology and Sociology. The Program is based on the assumption that there are students with the innate intellectual ability required to complete Ph.D. studies, but that because of compromising education, psychosocial or economic factors their prior academic performance or their performance on standardized exams fails to reflect their abilities. The Program is primarily designed for students with these characteristics who are members of racial or ethnic groups that have traditionally experienced discrimination.

In order to be considered for admission into the Program, students should hold the Bachelor's degree (or expect to receive it before their first term in the Program commences), and must have grade point averages not lower than 2.5 on a 4.0 scale. Applicants should have as strong a foundation as possible in the field in which they apply. Ordinarily, an applicant will have majored in that field in college. A strong background in mathematics and quantitative courses is also recommended.

During the post-baccalaureate year, students enhance their preparation for regular graduate work through a coordinated program of courses in their disciplines, study skills development, and personal counseling (both group and individual). If they successfully complete the year with a grade of 'B' or better, they are admitted to the Ph.D.

program in their field. Full support (tuition, a 12-month stipend, and medical benefits) is provided during the post-baccalaureate year and continued for up to five years of graduate training.

For additional information please contact the Director, Post-Baccalaureate Program, Wayne State University, Detroit, Michigan 48202.

## International Students

Students from other countries must contact the Office for Graduate 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 at an institution where English is the medium of instruction.
- 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).

Exceptions to the above may be made only by the Graduate Dean based upon recommendation from the departmental graduate committee chairperson, college graduate officer, or the Wayne State University English Language Institute. Dr. Bruce Morgan, Director of the English Language Institute, administers a TOEFL equivalent with a writing sample every Friday at 9 a.m.; there is no charge for this examination.

For further information on the English Proficiency policy, please consult the Office for Graduate Admissions.

## Faculty Admission

Wayne State University faculty members holding the rank of Assistant Professor or above may not be admitted to graduate degree programs in the University.

# 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 177) and by the School of Medicine (see page 308).) **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

<b>Resident</b> .....	\$50.00 plus \$169.25 per credit
<b>Non-Resident</b> .....	\$50.00 plus \$308.50 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 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 \$25.00 for the processing of the secondary application.

**Registration Fee:** There is a \$50.00 non-refundable Registration Fee; except that students enrolled in the *Visitor Program* shall pay a \$20.00 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 a \$30.00 non-refundable Late Registration Fee.

**Late Payment Fees:** A \$25.00 Late Payment Fee is assessed students who do not pay the balance of their term tuition and fee assessments by the end of the first week of classes, or who do not make payment at the time when classes are added after the first week of classes. A second \$25.00 Late Payment Fee is assessed students who have not satisfied their tuition and fee assessments by the end of the eighth week of classes.

**Add Processing Fee:** A \$10.00 Add Processing Fee is assessed students who add courses after the second week of the term and increase the number of credits scheduled. The tuition for the increased credits and the \$10.00 Processing Fee are due at the time of processing.

**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.

**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 fee is \$300.00 and for Years III and IV the fee is \$100.00. 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 \$52.00 for one credit hour. For three credit hours, the *additional* fee is \$105.00. 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.

**Duplicate I.D. Fee:** There is a fee of fifty cents for a duplicate student identification card.

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

Lock and storage basket .....	\$3.00
Half-locker and lock .....	10.00
Full locker and lock .....	15.00

**Bowling Fee:** Students electing a course in bowling must pay a \$20.00 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. 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 first two weeks of classes are financially obligated to pay for the courses even if they have not attended any class sessions.*

### Mail Registration

Students must pay the \$50.00 non-refundable Registration Fee when submitting the Mail Registration Schedule Request form. The balance of tuition and fee assessment is due at the end of the first week of classes. A \$25.00 Late Payment Fee is assessed any student who has not paid his/her tuition and fee assessment by the end of the first week of classes.

### Final Registration

Payment of the \$378.00 registration deposit (which includes the non-refundable \$50.00 Registration Fee) is required at the time of registration. The balance of the tuition and fee assessment is due at the end of the first week of classes. A \$25.00 Late Payment Fee is assessed any student who has not paid his/her tuition and fee assessment by the end of the first week of classes.

## Late Registration

**During the first Week of Classes:** Payment of the \$408.00 registration deposit (which includes the non-refundable \$50.00 Registration Fee and the non-refundable \$30.00 Late Registration Fee) is required at the time of registration. Students receiving financial assistance may submit a Tuition and Fee Deferral form for the required amount. The balance of the tuition and fee assessment is due at the end of the first week of classes. A \$25.00 Late Payment Fee is assessed any student who has not paid his/her full tuition and fee assessment by the end of the first week of classes.

**After the First Week of Classes:** Payment of full tuition, the non-refundable \$50.00 Registration Fee, and the non-refundable \$30.00 Late Registration Fee is required at the time of registration. Students receiving financial assistance may submit a Tuition and Fee Deferral form for the required amount.

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 \$50.00 non-refundable Registration Fee is required on the date of registration or no later than the first class meeting date. A \$25.00 Late Payment Fee is assessed any student who has not paid his/her tuition and fee assessment by the due date.

**Late Payment Fee:** A \$25.00 Late Payment Fee is assessed students enrolled in courses meeting fifteen weeks or more who have a tuition and fee balance after the first week of classes. After the eighth week of classes an additional \$25.00 Late Payment Fee is assessed.

**Holds on Records:** A 'Hold' will be placed on the records of any student who has a 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; 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, 158 Administrative Services Building I, or at the ticket dispensing machine in the lobby of the Joy Student Services Center. The tickets must be submitted to the Records Office 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 amount at the Records Office. Requests by mail should be addressed to: Records Office, Attn: Transcripts, 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 \$50.00 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 the Registration and Scheduling Office, 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.

*Tuition Cancellation/Refund Schedule*

Number of weeks Course/Section is offered	Number of Calendar Days Since First Day of Classes for the Semester/Session						
	0	1-7	8-14	15-21	22-28	29-42	43-100
0-3	100%	0%					
4-8	100%	100%	0%				
9-15	100%	100%	100%	0%			
16-27	100%	100%	100%	100%	0%		
28-52	100%	100%	100%	100%	100%	100%	0%

**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 the Registration and Scheduling Office.



# 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 'C' and 'F' are definitely unsatisfactory and constitute valid cause for dropping a student from graduate study.** To be awarded a graduate degree, the student must have achieved at least a 'B' average. A limited number of 'C' grades, though unsatisfactory, may be applied toward a graduate degree provided they are offset by an equal number of 'A' grades. Students are advised to consult their departments for specific limitations on 'C' grades. 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 J.D. 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 are recorded under the following system.

A Excellent	4 honor points per credit hour
B Good	3 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).

**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

I Incomplete	See below for explanation of this mark.
W Official withdrawal	See below for explanation of this mark.
X No grade reported	See below for explanation of this mark.
Y Deferred	See below for explanation of this mark.
Z Auditor	See below for explanation of this mark.

**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' will be changed to a grade of 'F' only if the student's subsequent work is of such poor 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 in writing to the University Records Office, 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 registered formally as an auditor. To so register, the student must have, at the time of registration, written audit authorization from his/her academic dean or the dean's designated representative.

### 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 the Records Office 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).

The honor point average is obtained by dividing the total number of honor points accumulated by the honor point base which, generally, is equivalent to the total number of credits in course work attempted at

Wayne State University. 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 22 (Repeating Courses) for the policy on honor points for repeated 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 indicate, at the time of registration for the course, 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. During in-person registration, a Permit to Schedule form must be approved by the Dean of the college or school in which the student is enrolled and be submitted to the Registration and Scheduling Office;

During Mail Registration, the student should indicate the Audit option on the Mail Registration Schedule Request Form and make sure that the approval process has been completed with his/her Dean's office;

3. A student is not permitted to take quizzes and examinations in audited courses;

4. 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 Request to Drop/Add Form indicating the desired change.

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

## Dual Enrollment

**With the Graduate School:** Highly qualified undergraduate students may, under special circumstances, take a 700-level course for undergraduate credit only. A written petition initiated by the student's adviser must be approved by the graduate officer of the school or college, by the professor teaching the course, and by the Dean of the Graduate School.

During in-person registration, a completed Senior Rule/Dual Enrollment Form must be submitted to the Registration and Scheduling Office. During Mail Registration, the student should make sure that the approval process has been completed and that the approval form is on file in the Graduate School office.

**With Undergraduate Schools:** Graduate students may take undergraduate courses to be posted on an undergraduate transcript. This is often done to satisfy prerequisites not required in a major field. Fees are assessed by the student's primary college or school; therefore, the student registering for graduate and undergraduate courses will be assessed graduate fees for all courses.

During in-person registration, a completed Senior Rule/Dual Enrollment Form must be submitted to the Registration and Scheduling Office. During Mail Registration, the student should make sure that the approval process has been completed and that the approval form is on file in the Graduate School office.

**Under the Senior Rule:** An undergraduate student in his/her final semester who has a 3.0 or higher cumulative h.p.a., and who desires to earn no more than sixteen graduate credits, may apply to the Graduate School for admission under Senior Rule status. The student must be dual registered for at least one undergraduate credit which applies to completion of his/her undergraduate degree. Undergraduate tuition rates apply. For further information, see Senior Rule Admission, page 15.

**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 in 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.

## Repeating Courses

If a student in post-bachelor status (see the section on 'Registration,' below) repeats a course originally taken in 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 repetition will be included in the student's honor point average computation.
3. The original grade in the course repeated 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 repeat a course, a Repeat Form must be filed in the Records Office, 1 West, Helen Newberry Joy Student Services Center.

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

If a post-bachelor status student repeats a course originally taken under regular undergraduate status, the repetition 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 repeat a graduate course in which a grade of 'B-minus' or lower is received. No more than two courses may be repeated during the student's study at Wayne State and this number may be further limited by individual departments. Permission to repeat 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 said course takes place. The original grade for the course will remain on the student's transcript, but only the grade received in repetition 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 repetition of courses.

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

**College of Engineering:** No course may be repeated 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 repeat 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 repeated without the consent of the adviser(s) delegated for each professional curriculum.

## REGISTRATION

**REGISTRATION and SCHEDULING OFFICE:** 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 700), 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.

### MAIL REGISTRATION:

1. Any student who wishes to register by mail must submit a completed Mail Registration Schedule Request form with a non-refundable \$50.00 check or money order to the Registration and Scheduling Office by the date indicated in the term *Schedule of Classes*. Students receiving financial assistance through the Office of Scholarships and Financial Aid may submit Tuition Deposit Deferral forms for the required amount with their Schedule Request forms.

2. The Registration and Scheduling Office sends Mail Registration Schedule Request forms, *Schedules of Classes*, and pre-addressed return envelopes to newly admitted and continuing students (excluding new freshmen for the Fall Term) about one month prior to the due date for mail registration. Students not enrolled at Wayne State for the preceding term are not mailed Schedule Request forms and may obtain their forms from the Registration and Scheduling Office, the Student Resource and Assistance Center, the University Advising Center, or their school/college office.

**Exception for Fall Term:** Students enrolled during the preceding Winter and/or Spring/Summer Terms will be sent the Mail Registration materials indicated above.

Registration mailings are sent to the address on record. Students should report any change in address to the Records Office, 1 West, Helen Newberry Joy Student Services Center.

3. The instructions included on the Mail Registration Schedule Request forms indicate how the forms are to be completed and submitted. Students should pay particular attention to these instructions, since incomplete or erroneously completed forms cannot be processed. Students whose forms are not processed will be notified and must register during the Final Registration Period.

4. Students with Holds on their records are notified on their Mail Registration Schedule Request forms of the Holds that exist when the forms were printed. Approximately ten days after the mail registration due date, the applicable students are notified by letter of Holds which must be cleared if their mail registrations are to be processed.

5. Official Student Schedules and Identification Cards, signifying completion of registration for the term, are mailed to students approximately one month prior to the beginning of classes. Students who do not receive their Official Student Schedules and ID Cards must register during the Final Registration Period.

6. Students who receive their Official Student Schedules and ID Cards may adjust their schedules before and during Final Registration. The *Schedule of Classes* indicates the date(s) on which registered students may change their schedules.

7. Students must pay the balance of their term tuition on or before the last day of the first week of classes in order to avoid a late payment charge. Students adding courses after the first week of classes must pay the tuition at the time the courses are being added in order to avoid a late payment fee.

#### FINAL REGISTRATION:

1. Final Registration is conducted during the week preceding the first day of classes for the term. Students should consult the *Schedule of Classes* for specific dates and times for final registration.

2. Students enrolled in the preceding term who do not register by mail for the current term are sent their Status Forms about two weeks prior to final registration. The Status Form lists any Holds that must be cleared prior to registering. Students who misplace or do not receive their Status Forms may obtain a duplicate during the Final Registration period from the Records Office.

3. Students who are newly admitted to an academic program for the term are not issued Status Forms and should obtain Authorization to Register letters from the admitting office. During Final Registration periods, the Undergraduate and Graduate Admissions Offices are located in the Helen Newberry Joy Student Services Center.

4. Students registering during the Final Registration Period must:

a) pay the \$378.00 registration deposit (which is the tuition for four undergraduate lower-division credits at the resident rate plus the non-refundable \$50.00 Registration fee), or submit a Tuition Deposit Deferral form;

b) have their Status Forms or Authorization to Register letters;

c) complete their Final/Late Registration Schedule Request forms;

d) obtain releases for any Holds indicated on their Status Forms or Authorization to Register letters; and

e) present the abovementioned documents at the registration processing station and receive confirmation of their registration.

5. Final Registration is conducted in the Student Center. Representatives from the Cashier's Office, Accounts Receivable Office, and the Office of Scholarships and Financial Aid are located on the lower level of the Student Center. Academic Advising is available in the Hilberry Lounges on the second floor.

6. Final Registration is completed in the Ballroom on the second floor of the Student Center where computer terminal operators validate course/section selections. As the last step in Final Registration, students are issued ID Cards and Transaction Verification Reports listing the courses/sections in which they are registered.

7. Students must pay the balance of their tuition on or before the last day of the first week of classes in order to avoid a late payment charge. Students adding courses after the first week of classes must pay the tuition at the time the courses are being added in order to avoid a late payment fee.

#### LATE REGISTRATION:

1. Students registering during the Late Registration period must follow the procedure for Final Registration, *except*:

a) during the first week of classes students must pay the \$378.00 registration deposit (which includes the non-refundable \$50.00 Registration Fee) and the non-refundable \$30.00 Late Registration Fee, prior to registering; and

b) after the first week of classes, students must pay their full tuition, the non-refundable \$50.00 Registration Fee and the non-refundable \$30.00 Late Registration Fee at the Cashier's Office, Administrative Services Building I, located on the northeast corner of Cass Avenue and Antoinette Street.

*Note:* Students receiving financial aid may submit Tuition Deposit Deferral Forms for the required amount to satisfy the above payment requirement.

2. Status Cards for continuing students are available at the Central Records Office, Helen Newberry Joy Student Services Center; Authorization to Register letters for newly admitted students are available from the Office for Graduate Admissions, 165 Administrative Services Building I, located on the northeast corner of Cass Avenue and Antoinette Street.

3. Students with Holds indicated on their Status Forms or Authorization to Register letters must obtain the appropriate releases before completing their registration.

4. Final/Late Registration Schedule Request forms must be completed and required signatures obtained. See the *Schedule of Classes* for courses which require departmental approval stamps. In addition, instructor's signatures are required beginning the second week of classes.

5. During the first week of classes, Late Registration is completed in the Ballroom on the second floor of the Student Center. After computer terminal operators validate course/section selections, students are given an ID card, a Transaction Verification Report listing the courses/sections in which they are registered, and Class Admittance Slips for each course/section. The Class Admittance Slips are to be presented to the instructors of the courses/sections indicated.

6. Students registered late who were not required to satisfy their full tuition payment at the time of registration must pay the balance of their tuition on or before the last day of the first week of classes in order to avoid a late payment charge. Students adding courses after the first week of classes must immediately pay the tuition for the courses being added in order to avoid a late payment fee.

#### Drop/Add — Adjusting Your Schedule

Registered students may drop and/or add classes on the date(s) indicated in the *Schedule of Classes*. Drop/Add forms are available in the academic departments, the Registration and Scheduling Office, the Student Resource and Assistance Center, and the University Advising Center.

Observe the instructions for Drop/Add processing printed on the form, and 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 the Registration and Scheduling Office, 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 after the second week of classes 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. Instructors' signatures are required for courses being added after the first week of classes. Students are not permitted to add courses after the fourth week of the term.

7. Students who add courses after the second week of the term and increase the number of credit hours scheduled are assessed a \$10.00 Add Processing Fee. The tuition for the increased credits and the \$10.00 Processing Fee are due at the time of processing.

8. Students are required to have instructors' signatures for drops processed after the fourth week of the term and the students' deans' signatures after the twelfth week of the term.

9. 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 500 and above are considered graduate level; in some departments, certain 500- and 600-level courses are not permitted for graduate credit and are so designated. Courses numbered 700 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 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 600-609 and 700 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 20.*

**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 credits elected in any one outside field 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 (WICS)** 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.

## 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 Provostial 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. Provostial 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 will be postponed until the date that the Provost issues a decision regarding the underlying Request for Provostial 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 20.

## 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 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 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.

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

## 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 (including Master's degree work) and before scheduling the qualifying examination.

2. *Report of Oral Qualifying Examination (Examiner assigned by Graduate School)*: Filed by the department within one month after 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. 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 Form 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;
- (2) at least one minor composed of eight or more credits elected outside the major department but in a related field;
- (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., 700 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 (999) 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

**Prior to initiating research**, the Ph.D. student must prepare in quadruplicate 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 requests that the student prepare a dissertation prospectus, and submit it with the Dissertation Outline.** Following departmental approval, all four copies of the Dissertation Outline are 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 Qualifying Examinations and submits and receives the Graduate Dean's approval on the Dissertation Outline.

## 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 an exceptionally 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, each 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 guidelines are available from the Ph.D. Programs Section, 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 sign the student's *Program Request*, approve the *Plan of Work*, recommend candidacy, guide the student's research, approve the essay or thesis, 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 both the Oral Qualifying Examination and the Dissertation Public Lecture Presentation. 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 Qualifying 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 Graduate School shall then appoint a Graduate Examiner for the committee. 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 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.

## Graduation

Each candidate for a degree or certificate must file an *Application for Degree* not later than the last day of the final registration period 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, a new 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.

## Essays

Under Plan B, departments require the completion of an essay prior to the granting of a master's degree. The essay must show evidence of scholarly study and writing and be related to the student's major. Candidates are directed to consult their departments as to matters of essay manuscript style.

## 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 his/her University research. 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. Programs 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 or the University Cashier's Office. 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.

**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 Program Directory

The following directory provides reference telephone numbers for all of the master's and doctoral programs offered by the University. The directory is indexed by major program within college and/or divisional unit. The telephone area code for Detroit, Michigan is 313.

COLLEGE and MAJOR    M.S./M.A.    Ph.D.

### *School of Business Administration*

Accounting .....	577-4530	
General Information .....	577-4510	
Finance and Business Economics .....	577-4520	
Management .....	577-4515	
Management Information Systems .....	577-4530	
Marketing .....	577-4525	
Personnel/Human Resources .....	577-4515	

### *College of Education*

Administration and Supervision, General .	577-1652	577-1701
Adult and Continuing Education .....	577-1712	
Art Education .....	577-1820	
Bilingual-Bicultural Education .....	577-0938	
Counseling .....	577-1613	577-1613
Curriculum and Instruction .....		577-0991
Educational Leadership .....	577-1701	577-1701
Educational Psychology .....	577-1614	577-1614
Educational Sociology .....	577-1743	577-1743
Elementary Education .....	577-1615	577-1615
English Education - Secondary .....	577-0991	
Evaluation and Research .....	577-1677	577-1677
Foreign Language - Secondary .....	577-0991	
Health Education .....	577-6222	
Higher Education .....	577-1633	577-1701
History and Philosophy of Education .....	577-1679	577-1679
Instructional Technology .....	577-1720	577-1701
Mathematics .....	577-0985	577-0991
Physical Education .....	577-4265	
Early Childhood .....	577-1615	
Reading .....	577-1615	577-1615
Recreational and Parks Services .....	577-4625	
School and Community Psychology .....	577-1614	
Science - Secondary .....	577-0991	
Social Studies - Secondary .....	577-0985	
Special Education .....	577-0991	577-0991
Sports Administration .....	577-0182/577-4265	
Teacher Education .....		577-0902
Vocational and Applied Arts .....		577-0991
Vocational Rehab'n. Counseling	577-1743/577-1619	

### *College of Engineering*

Chemical, Polymer, & Hazardous Waste .	577-3800	577-3800
Civil and Environmental .....	577-3789	577-3789
Computer .....	577-3920	577-3920
Electrical .....	577-3920	577-3920
Electronics & Computer Control Systems .	577-3861	
Engineering Technology .....	577-0800	
Industrial and Manufacturing .....	577-3800	577-3800
Materials Science and Engineering .....	577-3800	577-3800
Mechanical .....	577-3843	577-3843
Operations Research .....	577-3821	577-3821

COLLEGE and MAJOR M.S./M.A. Ph.D.

*Fine and Performing Arts*

Art .....	577-2980	
Dance .....	577-4273	
Music .....	577-1795	
Theatre .....	577-3508	577-3508

*Graduate School*

Archival Administration .....	577-8050	
Industrial Relations .....	577-8050	
Interdisciplinary .....		577-8049
Library Science .....	577-8050	

*Law School*

Corporate and Finance Law .....	577-3930	
Labor Law .....	577-3930	
Medical Jurisprudence .....	577-3930	
Tax Law .....	577-3930	

*College of Liberal Arts*

Anthropology .....	577-2935	577-2935
Audiology .....	577-1393	577-1393
Biological Sciences .....	577-2899	577-2899
Chemistry .....	577-2844	577-2844
Classics .....	577-3032	
Communication Disorders and Sciences .....	577-2943	577-2943
Comparative Literature .....	577-2452	
Computer Science .....	577-0664	577-0664
Criminal Justice (see also Political Science) .....	577-2705	
East European Studies .....	577-3024	
Economics .....	577-3345	577-3345
English .....	577-2452	577-2452
French .....	577-3002	
Geology .....	577-2506	
German .....	577-3024	
History .....	577-2525	577-2525
Humanities .....	577-3035	
Italian .....	577-3002	
Latin .....	577-3032	
Linguistics .....	577-3254	
Mathematics .....	577-2479	577-2479
Modern Languages .....		577-3002
Near Eastern Languages .....	577-3015	
Nutrition and Food Science .....	577-2500	577-2500
Philosophy .....	577-2474	577-2474
Physical Science .....	577-2721	
Physics .....	577-2721	577-2721
Political Science .....	577-2638	577-2638
Psychology .....	577-2823	577-2823
Public Administration .....	577-2638	
Russian .....	577-3024	
Sociology .....	577-2930	577-2930
Spanish .....	577-3002	

*School of Medicine*

Anatomy .....	577-1061	577-1061
Biochemistry .....	577-1511	577-1511
Cancer Biology .....		577-1018
Community Health Services .....	577-1033	
Immunology and Microbiology .....	577-1591	577-1591
Medical Physics .....		745-2486
Molecular Biology and Genetics .....	577-5323	577-5323
Neurobiology, Cellular and Clinical .....		577-5298
Pathology .....		577-1102
Pharmacology .....	577-1580	577-1580
Physiology .....	577-1520	577-1520
Psychiatry .....	577-5298	
Radiological Health .....	745-9175	
Radiological Physics .....	745-2486	

COLLEGE and MAJOR M.S./M.A. Ph.D.

*College of Nursing*

Adult Primary Care Nursing .....	577-4084
Adult Psychiatric - Mental Health Nursing .....	577-4084
Advanced Medical Surgical Nursing .....	577-4804
Child and Adolescent Psychiatric - Mental Health Nursing .....	577-4084
Community Health Nursing .....	577-4804
Doctor of Philosophy in Nursing .....	577-4138
Graduate Certificate Program in Nursing Education .....	577-4084
Nursing, Parenting and Families .....	577-4804
Specialist Certificate in Nursing Administration .....	577-4084
Transcultural Nursing .....	577-4084

*College of Pharmacy and Allied Health*

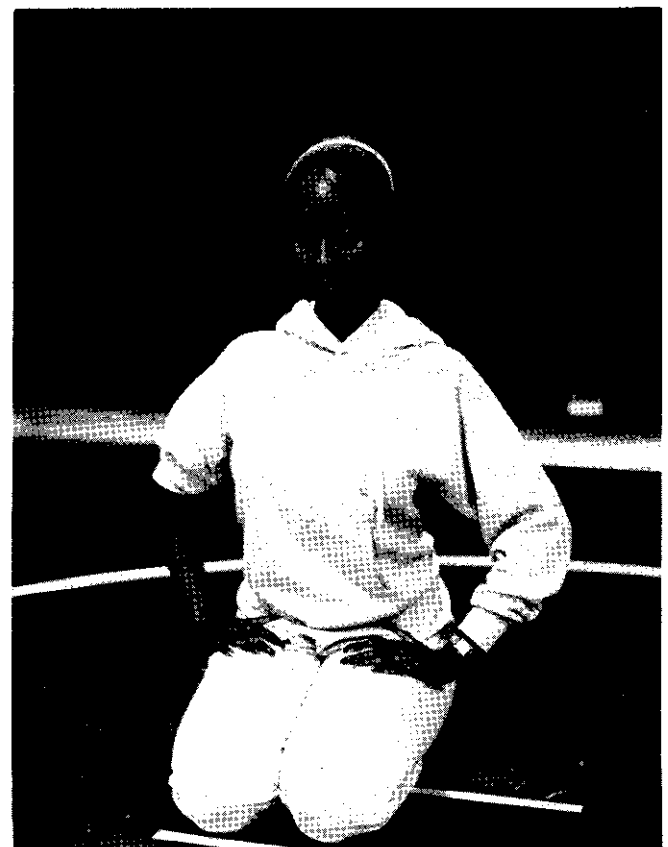
Anesthesia .....	745-3610	
Clinical Pharmacy .....	577-0824	
Hospital Pharmacy .....	745-4025	
Medical Technology .....	577-1385	
Medicinal Chemistry .....	577-3763	
Occupational and Environmental Health .....	577-1210	
Occupational Therapy .....	577-1435	
Pharmaceutical Sciences .....	577-1737	577-1737
Pharmaceutics .....	577-1047	
Pharmacology .....	577-1047	

*School of Social Work*

Master of Social Work .....	577-4409
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*College of Urban, Labor, and Metropolitan Affairs*

Geography .....	577-2701
Industrial Relations .....	577-4380
Urban Planning .....	577-2701



## GRADUATE DIRECTORY

### University Address

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

### Graduate School

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

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

### Graduate Admission

Office for Graduate Admissions  
165 Administrative Services Building I  
Telephone: 577-3596

### Graduate Assistantships

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

### International Student Advising

International Student Services and Activities  
5454 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  
214 Administrative Services Building  
Telephone: 577-3390

### Catalog Requests

University Mail Department  
109 Administrative Services Building  
Telephone: 577-2135

### Campus Housing

700 Merrick  
Telephone: 577-2116

### Registration

156 Administrative Services Building  
Telephone: 577-3541

### Public Safety

76 W. Hancock  
Telephone: 577-2222

## GRADUATE FINANCIAL ASSISTANCE

### OFFICE of SCHOLARSHIPS and FINANCIAL AID

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

The Office of Scholarships and Financial Aid (OSFA) helps students and parents meet their educational expenses. These expenses include tuition, fees, books, supplies, room, board and transportation. OSFA administers Federal, State and institutional funds, based both on financial need and academic merit. Financial aid counselors are available on a walk-in basis or by telephone.

Financial need is the difference between the cost of attendance and the family contribution. The student's financial need is determined by an analysis of the financial statement and a standardized formula known as the Congressional Methodology. Special circumstances of the individual applicant are considered on a case-by-case basis.

Graduate students must apply for financial assistance by the priority deadline of May 1. Students must submit a Financial Aid Form (FAF) or Family Financial Statement (FFS) so eligibility can be determined for need-based aid. Applicants may be required to verify the information provided on the financial statement before aid is officially awarded.

There are four basic types of financial aid: scholarships, grants, loans, and employment. These types of aid are offered to the student either as a single fund or a financial aid package consisting of a combination of awards. The total amount of financial aid a student receives can never exceed the demonstrated financial need, based on analysis of the financial statement. To retain eligibility for funds, the student must continue to make satisfactory academic progress toward a degree. Graduate students who receive stipends from fellowships and assistantships are required to report these awards to OSFA for monitoring.

General sources of financial support for graduate students are outlined below. Further information is available from OSFA; the Fellowships and Scholarships Office of the Graduate School (4302 Faculty/Administration Building; 577-2172); and individual schools and colleges, programs, and departments.

### 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, 4316 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:** Wayne State University subscribes to the following statement, adopted by most of the graduate schools of North America: 'In every case in which a graduate assistantship, associateship, or fellowship for the next academic year is offered to an actual or prospective student, the student, if he/she indicates his/her acceptance before April 15, will have complete freedom through April 15 to submit, in writing, a resignation of his/her appointment in order to accept another graduate appointment. However, an acceptance given or left in force after April 15 commits him/her not to accept another appointment without first obtaining formal release for that purpose.'

**Fulbright Grants and Other Grants for Graduate Study Abroad:** For information and application forms, contact the Fulbright Program Adviser, Lowell Wenger, Department of Physics, College of Liberal Arts. Enrolled students must apply through the Fulbright Program Adviser. Please note the early deadline: campus deadline for most Fulbright grants is October 15 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 or Ph.D.) or advanced professional (Ed.D., M.S.W., Pharm.D.) degree programs. Awards are valued at a maximum of six graduate credits per term for part-time students, and a maximum of twelve graduate credits per term for full-time students. Awards are contingent upon the student's acceptance in a graduate or professional degree 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.)

**Patricia Roberts Harris Fellowship Program:** This program provides federal financial assistance to graduate students who demonstrate financial need and who are in an academic field leading to a doctoral degree or to a professional field which considers the master's degree as the credential for professional practice. The applicant must be a U.S. citizen or permanent resident and meet Wayne State University admission requirements, must be a full-time student, and may not hold employment without special permission. Interested students should contact their department chairperson for additional information.

**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:** An award of \$50 is available to currently-enrolled students engaged in research for their graduate degrees. Forms signed by an adviser or graduate officer are forwarded to the graduate school for approval. Contact the Fellowships and Scholarships Office 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 students pursuing a Ph.D., M.M., or M.F.A. degree who are judged to be exceptionally qualified by the Scholarship and Fellowship Selection Committee of the Graduate

Council. The applicant should be an outstanding student with clearly defined objectives relevant to his/her area of specialization. The Fellowship award, which applies through the academic year, includes a stipend, twelve graduate credits of tuition assistance per semester, inclusion in the University's health insurance program, and a housing allowance for use in University Housing. Awards are contingent upon official acceptance for graduate study and full-time enrollment. Information concerning the competition deadline date and application forms are available from the Fellowships and Scholarships Office of the Graduate School.

**Thesis/Dissertation Research:** An award of \$500 to \$1000 is 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 Scholarship:** An award of up to \$200 is available to any Ph.D. student presenting a paper authored by him/herself for the first time at a regional or national conference, convention, or the like. Contact the Fellowships and Scholarships Office for details.

**Urban Studies Awards:** 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.

## Financial Assistance Available through the Office of Scholarships and Financial Aid

*Information about the programs listed below may be obtained by contacting the Office of Scholarships and Financial Aid (OSFA), 3 West, Helen Newberry Joy Student Services Center (577-3378):*

**College Work-Study Program:** Employment on-campus and in public and private non-profit agencies is available to eligible graduate students who demonstrate financial need. Work assignments are generally related to the student's interest, academic major and professional goals. Opportunities to work are intended specifically to assist in meeting educational expenses and may range from \$700 to \$3,000 a year.

**Michigan Work Study for Graduate Students:** The State of Michigan has work study funds specifically for graduate students. Students must be enrolled at least half-time (four credit hours) and may work twenty hours per week while enrolled in school. Awards are based on financial need. Work assignments are based on the student's interest and academic major, when possible.

**Michigan Direct Student Loan Program:** This is an alternate source of loan assistance for eligible students unable to secure a Stafford loan through a commercial lender. These loans may assist in meeting up to half the cost of the student's educational expenses and are based on financial need. Program requirements are the same as for a Stafford Loan (see below).

**Perkins Student Loan Program:** The University participates in the Federal Perkins Loan Program. Loans are based on financial need and applicants must be enrolled at least half-time (four graduate credit hours). Students may borrow up to a maximum of \$2,500 per academic year depending on financial need and the availability of funds. The cumulative maximum indebtedness including undergraduate loans is \$18,000. Repayment and simple interest charges (5 percent) are initiated six months after graduation or termination of academic study. Entrance counseling is required before disbursement of loan funds. Exit counseling is required before graduation.

**Stafford Loans:** Loans for eligible students who demonstrate financial need range up to \$7,500 and can be arranged through commercial lending institutions such as banks or credit unions; repayment and simple interest charges (eight per cent) are initiated six months after graduation or termination of academic study. Interest increases to ten per cent after four years. Federal interest subsidy during the student's period of enrollment is available for qualified applicants. The cumulative maximum indebtedness including

undergraduate loans is \$54,750. Students cannot borrow more than the cost of education minus the student's expected family contribution and other financial aid. All graduate students must have a Family Financial Aid Form (FAF) or Family Financial Statement (FFS) on file and comply with the financial aid application requirements before the Stafford Loan can be processed. Entrance and exit counseling is required before loan disbursement.

**Supplemental Loans for Students (SLS):** These loans provide additional funds for educational expenses, and are made by a lender, such as a bank or credit union. SLS loans enable graduate students to borrow up to \$4,000 per year to a total of \$20,000. This amount is in addition to the Stafford Loan limits (see above). The interest rate is currently 9.34 per cent. To qualify for the SLS, applicants must file the Family Financial Aid form (FAF) and apply for a Stafford Loan before SLS eligibility is determined.

## Scholarships and Awards Available through the Division of Student Affairs

### COUNSELING 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 the Office of Scholarships and Financial Aid 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.

### OFFICE of SCHOLARSHIPS and FINANCIAL AID

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

**Ford EEOC Scholarship:** Award amount depends on funds available; awarded to any minority or female student who is either a Ford Motor Company employee, or a spouse or child of a Ford Motor Company employee (certification of Ford employment required). Application deadline is April 30.

**Metro Detroit Rehabilitation Association — Fred Howes Scholarship:** Award amount depends on funds available; awarded to students with a disability in a field of study related to disabilities; student must maintain a minimum 3.0 h.p.a. Application deadline is April 30.

**Michigan Quality of Life Council and Irving Bluestone Endowed Scholarship Fund:** \$500 scholarship available 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 April 30.

**Joseph Tamosiunas Scholarship:** Award amount depends on funds available; awarded to any full-time or part-time student of Lithuanian descent.

**Edna Smiley Tudor Scholarship:** Award amount depends on funds available; awarded to female students age 35 or older, returning to complete their education, who have maintained a minimum 3.0 honor point average. Recipients are selected based on achievement and financial need. Application deadline is April 30.

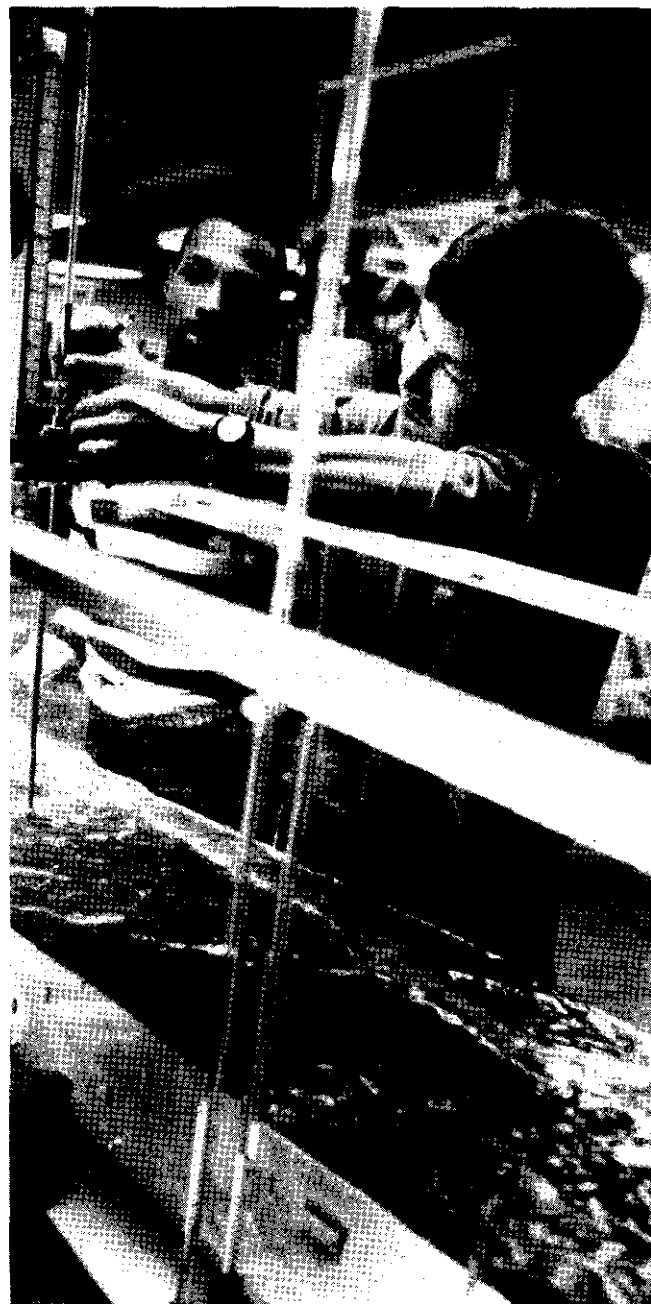
**Women of Wayne Incentive Scholarship:** Scholarship of variable amount depending on funds available. Open to any part-time female student who has maintained a minimum 3.0 honor point average and who has demonstrated financial need. For information, contact the Women's Resource Center, 575 Student Center; 577-4103.

## 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 Office for Graduate Admissions (165 Administrative Services Building I) or the International Services Office (Second Floor, 5454 Cass Avenue) for details.



# University Centers and Institutes

## Addiction Research Institute

*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. Recent 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; and substance abuse among the mentally ill.

ARI training activities have encompassed 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.

In addition, the Institute has coordinated the development of a multi/interdisciplinary graduate certificate program in substance abuse. The ARI 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 substance 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; 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.

## Bioengineering Center

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 and Metallurgical 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 gait analysis and human motion biomechanics, orthopedic biomechanics, sleep disorders, assessment of muscle potentials using pattern recognition techniques, on-line assay of anticoagulants in blood in extracorporeal circulation, blood compatible surfaces and novel methods of feeding infants.

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, a linear impactor and a vertical accelerator. Up to sixty channels of data can be acquired simultaneously for digitization and processing on main frame computers.

## Center for Academic Ethics

469 Education Building; 5425 Gullen Mall

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.

## Center for Automotive Research

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-ignited engines, instantaneous friction, emissions formation and controls, engine dynamics and diagnostics, and startability 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.

## 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.

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 one-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 one-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.

## Center for Health Research

315 Cohn Building

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.

## Center for International Business Education and Research

305 Prentis Building; 577-4487; Fax: 577-5486

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.

## Center for Judaic Studies

Established on an interim basis by a grant from the United Jewish Charities and matching funds from Wayne State University, the Center for Judaic Studies represents a collaborative effort between the University and the community it serves. The Center itself offers no instruction and grants no degrees or certificates, but serves as a community resource in Judaic and cognate areas. As such, it promotes and publicizes course offerings and sponsors a variety of programs and activities having a direct bearing on the academic and wide-ranging cultural missions of the University. These activities range from international conferences at which contemporary Judaic scholarship is discussed, to small symposia, incidental lectures, and broadly-defined cultural events.

## Center for Legal Studies

319 Law School

The Center for Legal Studies was established by the Board of Governors in 1991. It aims to foster, across established disciplines within the University, the development of a community of scholars concerned with understanding the nature, context, and consequences of law; to encourage and facilitate joint research by members of the Law School and other faculties; and to promote opportunities for undergraduate, graduate and law students to engage in the interdisciplinary study of law. Its immediate objectives include the formation of a continuing legal studies colloquium and an undergraduate minor program in legal studies.

## Center for Molecular Biology

The Center for Molecular Biology 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.

## Center for Peace and Conflict Studies

2319 Faculty/Administration Building

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 is planning a joint master of arts in dispute resolution program in conjunction with the College of Urban, Labor, and Metropolitan Affairs.

**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.

## Center for Prevention and Control of Interpersonal Violence

The Center for Prevention and Control of Interpersonal Violence of the Department of Community Medicine, School of Medicine, offers a public health approach to the prevention and reduction of all forms of interpersonal violence in the metropolitan Detroit area. The Center develops and implements projects in research, education, training and service.

The Center draws together people and resources from throughout the University and health communities as well as from the community at large. In 1986, in cooperation with the Detroit Metropolitan Police Academy, the Center founded the *Metropolitan Detroit Coalition on Interpersonal Violence* to give advice and guidance to the Center. The Coalition is comprised of more than thirty community organizations involved in education, public health, and violence prevention and serves as a community forum on the prevention and control of interpersonal violence.

The Center conducts and promotes research by a multidisciplinary faculty and research staff examining the theoretical links between various types of interpersonal violence, and its implications for community health practice and intervention, and public policy formulation.

The Center has established training programs, seminar series, educational conferences and workshops for researchers, practitioners, residents, graduate students, educators, and the general public; community health science research pertinent to the prevention and/or control of violence and its effects; critical analyses, new formulations, and major theoretical or conceptual statements about violence and responses to violence; and current information on clinical and/or community health practice in specific areas of intervention.

The Center plans to develop and implement appropriate community-based research and service strategies designed to reduce the level of interpersonal violence in specific geographic areas or within targeted population groups.

## Center for Urban Studies

3054 Faculty/Administration Building

The Center for Urban Studies is an interdisciplinary research, training and service organization focusing on contemporary society. The Center's major activities are: research and evaluation in a number of areas related to urban issues, and to act as a resource agency for University and community groups. The Center maintains a core staff, but is structured to interact with students, faculty and other University staff. In addition, the Center sponsors six ongoing programs: (1) the Council on Early Childhood (COEC), composed of students and faculty from University departments, outside agencies and other interested persons working together on issues for and about young children; (2) the Michigan Metropolitan Information Center (MIMIC), a regional source of U.S. census data; (3) the City-University Consortium, an organization which links University resources with the City of Detroit government to solve urban problems; (4) Research Services, specializing in the implementation of research projects, from sampling and questionnaire development through data analysis. The Center also offers student internships, graduate assistantships, and experienced consultation on research projects; (5) a Technology Transfer Center, part of the Technology Transfer Network (TTN), jointly funded by the Michigan Department of Commerce and Wayne State University, providing Michigan business firms and entrepreneurs with access to technical resources and assistance; and (6) an Urban Transportation Program, conducting basic and applied research on issues related to urban transportation.

## C.S. Mott Center for Human Growth and Development

275 East Hancock

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.

## Developmental Disabilities Institute

Suite 326, 6001 Cass Avenue; 577-2654

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 14. 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.

**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.

## Information Technology Institute

237 Metropolitan Center for High Technology, 2727 Second Avenue;  
963-1725, 577-0731

The Information Technology Institute (ITI) was established by the Board of Governors in 1987 as an organizational unit within the Division of Computing and Information Technology, to stimulate, guide and manage interdepartmental and interdisciplinary research in all areas related to information technology.

Currently the Institute conducts research in computer operating system and software development, real-time systems and software engineering, parallel and distributed computing, automated manufacturing, clinical psychiatry and the study of human relations, and the technology of complex chemical processes. Faculty expertise is drawn from the Departments of Chemistry and Computer Science, College of Liberal Arts; the College of Education; the College of Engineering; and the Department of Psychiatry, School of Medicine. Research activities by faculty and students are coordinated with the interests of the Institute's industrial partners.

Computer facilities of the Institute include a token ring network of 10VM, DOS, and AIX-based machines of heterogeneous hardware, a token bus network of real-time processors connected to a workstation host, and the University Amdahl 470/VA computer and other facilities

available through the University's Division of Computing and Information Technology.

## Institute for Manufacturing Research

281 Physics Research Building

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 Liberal Arts. 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 Chemical Toxicology

Technological advances of the past several decades have significantly improved our standard of living and quality of life. The processes associated with a scientifically-sophisticated and technologically-advanced society, however, result in the production of by-products which constitute a majority of the environmental contaminants. Exposure to these environmental contaminants has been shown to result in adverse short- and long-term effects on human and animal life.

In the absence of research, society would be lacking in knowledge regarding the adverse health effects produced by numerous environmental contaminants. With the increasing demands of a more technologically-advanced society, the need to understand both the short- and long-term effects of these toxic agents on human and

animal life becomes more critical. The Institute of Chemical Toxicology (ICT) at Wayne State University is an interdisciplinary program which addresses some of the fundamental concerns which occur as a result of the use, storage and disposal of toxic chemicals.

Research at the Institute of Chemical Toxicology is intended to further understanding of the effects of toxic agents on biologic systems through the application of modern cellular, molecular and immunologic approaches to problems of toxicological significance. By understanding the nature and magnitude of the abnormal health effects associated with a toxic agent, appropriate strategies can be developed to minimize or eliminate exposure and risks to human and animal life.

In addition to research, the ICT also develops and participates in informational and educational activities, so that both employer and employees can be made aware of the adverse effects of chemicals in the workplace. It is envisioned that research at ICT will ultimately lead to the development of new concepts, technologies and strategies for toxic substance control and management. The Institute of Chemical Toxicology is supported by the University's Research Excellence and Economic Development Fund and by grants from federal agencies.

## Institute of Gerontology

226 Knapp Building, 71-C East Ferry

The Institute of Gerontology was established by the Michigan State Legislature in 1965 to conduct research, to provide services, and to offer educational opportunities, the latter function being fulfilled through the program leading to a Graduate Certificate in Gerontology.

**Research:** The Institute encourages and supports research activities of faculty and students in cooperating academic units on the campus. Gerontological research projects at Wayne have involved such subjects as social policy and aging, biological and physiological aging, psychological processes and aging, services needs of the aged, housing policy and the aged, and service delivery and the aged.

**Service:** Through its educational and research programs, the Institute provides service to local, state and national organizations. Institute staff and faculty associates work with other organizations to develop and evaluate innovative and pilot programs to serve the elderly. Additionally, Institute staff serves in an advisory or consultative capacity to local, state and national agencies and organizations concerned with the elderly population. Finally, the Institute provides up-to-date information and research to practitioners through its Internship Program, Lecture Series, and Summer Study Program.

### — Graduate Certificate in Gerontology

**Admission:** Applicants must meet the admission standards for Graduate School; for requirements, see page 14. Eligibility for the Graduate Certificate is limited to those persons holding a Master's Degree from any educational institution or those matriculated in and actively pursuing a graduate degree at Wayne State University. Application to the Program must also be made directly to the Institute.

**CERTIFICATE REQUIREMENTS** include completion of fifteen credits in a required course sequence in gerontology and a three credit supervised internship. Students in the certificate program must maintain an honor point average of at least 3.0. Each year, approximately thirty graduate gerontology course offerings are available in various academic areas, including sociology, psychology, social work, nursing, political science, economics, biology, physical therapy, speech and community medicine. All candidates must complete one course from each of the following five groups:

## I. Psychological Aspects of Aging and Human Development

	<i>credits</i>
CED 673—Counseling of Special Populations: Adults .....	3
NUR 741—Psychosocial Aspects of the Aged .....	3
PSY 549—The Aging Individual in Society .....	3

PSY 649—Developmental Psychology of Death, Dying & Lethal Behavior .....	3
PSY 748—Psychological Development in the Adult Years .....	3
PSY 749—Developmental Psychology of Later Life .....	3
PSY 876—Seminar in Clinical Psychology: Neuropsychology of Aging .....	2

## II. Social and Economic Aspects of Aging

SOC 576—Society and Aging .....	3
SOC 677—Sociology of Institutional Care .....	3
ECO 547—Economics of Aging .....	4
R P 565—Recreation Services for the Aging .....	3

## III. Biology, Physiology, and Health Issues in Aging

C M 737—Health, Disease and Aging .....	3
BIO 775—Biology of Aging .....	3
AUD 848—Seminar in Audiology: Hearing Loss and Aging .....	3
NUR 740—Gerontological Nursing .....	3
NUR 742—Seminar: Research in Gerontological Nursing .....	2
P T 500—Perspectives in Geriatrics .....	3
H E 565—Health and the Aging Process .....	3
SPC 517—Human Communication and the Aged .....	3

## IV. Public Policy and the Aged

P S 544—Politics of the Elderly .....	4
P S 643—Politics and Administration of Entitlement Programs .....	3
P S 743—Health Care Policy in the United States .....	3
P S 744—Public Policy and the Aged .....	3
P S 746—Policy Analysis and Program Evaluation .....	3
S W 572—Social Services for the Aged .....	3

## V. Research and Theory in Applied Gerontology

SOC 885—Seminar in Applied Gerontology (C M 785) (S W 885) .....	3
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## Institute of Maternal and Child Health

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.

### Labor Studies Center

6001 Cass Avenue

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.

## The Management Center

The Management Center is part of the Professional Development Division of the School of Business Administration. The Center affords services to the private and public sectors by offering non-credit human resource development programs to individuals or organizations. Such programs are frequently offered initially to the general public, and are often subsequently conducted at corporate sites.

The Management Center is often called upon to develop specific programs for organizations that may not be available through other sources. This service includes extensive on-site fact-gathering followed by total program development. Examples of unique client requests include 'Maintenance Estimating and Scheduling' for United Nuclear Corporation of Richland, Washington, and 'Project Management' for American Safety Equipment, Inc.

Individuals or organizations interested in obtaining additional information regarding programs offered by The Management Center should contact Rod Beaulieu, Director, at 577-4449.

## Merrill-Palmer Institute

71-A East Ferry Avenue

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 school 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 the Institute's 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 Institute 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 Child and Family Studies

The institute offers a Merrill-Palmer Graduate Certificate in Child and Family Studies. The Certificate is obtained concurrently with a graduate degree in one of the following areas: anthropology, nutrition and food sciences, education, nursing, psychology, social work, or sociology; or it may be obtained independently by students already having a master's or doctoral degree in one of these areas.

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14. Applications are available through the Institute.

**Certificate Requirements:** Students in the certificate program must maintain an honor point average of at least 3.0. Candidates for this certificate must satisfy the following requirements:

1. **Course Work:** Each student must complete twenty credits in courses selected in consultation with an adviser and chosen from a list composed by the Institute staff. Eight of these credits should be thought of as prerequisites and completed before formal admission to the program. Such courses may or may not have been taken as part of a concurrent or completed graduate degree program. Of the twelve credits to be completed after admission, at least three courses must be taken outside of the student's graduate degree major, and at least one course must be at the 700 level or higher. Students must maintain a 3.0 h.p.a. in all courses taken in this program.

2. **Practicum:** In addition to the course work, each student must have a supervised practicum experience in an interdisciplinary setting approved by the Merrill-Palmer adviser.

3. **Colloquia:** A key aspect of this program is a series of interdisciplinary colloquia covering various theoretical and applied issues in the field of child and family studies. Each student in the program is expected to participate in all meetings of the colloquia. The program must be completed within three years.

## — Certificate in Infant Mental Health

The Institute offers a Merrill-Palmer Interdisciplinary Graduate Certificate in Infant Mental Health. The certificate is 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 14) 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.



# UNIVERSITY STUDENT SERVICES

## Office of the Vice President for Student Affairs

470 Student Center; 577-3307

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 services, assists students in the successful pursuit of their educational objectives. The Division, in collaboration with the Office of the Provost, provides a complete retention program developed to enable at-risk students to achieve academic success. 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.

## 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: Records, Registration and Scheduling, and Information Systems. Records is responsible for maintaining students' academic permanent records, graduation processing, issuing transcripts, student grades and enrollment certifications. The Registration and Scheduling unit is responsible for processing students' registrations and Drop/Add forms, the accurate assessment of tuition and fees, preparation of the *Schedule of Classes*, and Final Examination Schedules, assigning classrooms, and the determination of students' residency statuses for purposes of computing tuition. The Information Systems unit is responsible for the preparation and dissemination of student enrollment reports, responding to internal and external requests for enrollment data, and development of the Office's systems and procedures.

## Office of Scholarships and Financial Aid

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

The Office of Scholarships and Financial Aid (OSFA) administers programs to assist graduate students with their educational expenses. These expenses include tuition, fees, books, supplies, room, board and transportation. Various types of aid funds are available to graduate students including scholarships, loans and work-study opportunities.

OSFA serves as the steward for Federal, state and institutional programs, and adheres to Federal guidelines and regulations in determining aid eligibility. Applicants must file the financial statement by May 1 for the following fall term, for earliest consideration for aid funds. This is particularly important for students applying for loan funds through a private lender, which require sufficient processing time to assure funds for the beginning of the semester.

For additional information, see page 32; or telephone OSFA at 577-3378.

## University Advising Center

2 East, Helen Newberry Joy Student Services Center; 577-2680.

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, and Urban, Labor and Metropolitan Affairs. In addition, files are maintained for students who may consult with the advising staff subsequent to their declaration of major. Using professional and student peer advisers, the Center helps students to identify their curricula, select courses and resolve academic probation issues. The Center also maintains a Study Abroad Resource Center, operates the orientation program, and publishes the student handbook, *Perspectives*.

## University Counseling Services

573 Student Center; 577-3398

The University Counseling Services has two major purposes: (1) to help students promote individual development in ways which will maximize benefits from their University experience, and (2) to help them find ways of coping with problems which interfere with their educational attainment. To implement these goals, non-credit courses in the areas of college and career orientation, reading efficiency, and study skills, are offered through this office. These courses (including Reading Efficiency courses) and the staff of University Counseling Services may be found in the Undergraduate Bulletin.

To meet the different needs of students, other services are provided in a number of additional formats and contexts as described below.

**Educational Resources for Students with Disabilities, 583 Student Center, 577-2006; TDD only, 577-3365:** Through this office numerous resources are available to students with physical or perceptual impairments. Services are designed to facilitate the full participation of students throughout the campus. Resources include pre-admission counseling, orientation to the campus, information about campus accessibility, consultation regarding management of academic coursework, individual administration of examinations, reading and recording services, interpreters, notetakers, study rooms, parking, referrals and advocacy, and information for faculty and staff. Students are invited to contact the Office regarding questions related to their individual situations.

**Learning Center, 598 Student Center, 577-3165:** The structured programs offered by this office are designed for students who want help in developing the learning process skills necessary to achieve realistic educational goals. Some of the skills taught include concentration, time management, test taking, textbook reading,

textbook comprehension, memory improvement, vocabulary, and speed reading. Service is provided through non-credit courses and self-instructional individualized laboratory experiences designed according to a student's needs, or through programs coordinated with academic departments or special University programs.

**Personal and Career Counseling Service, 573 Student Center, 577-3398:** This service provides students with opportunities for consultation about needs or concerns for which individualized help is desired. Any facet of experience which 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 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.

**Life/Career Development Laboratory, 567 Student Center, 577-3241:** The Laboratory is a walk-in service which offers students consultation, self-help inventories, occupational information and interactive computer software programs for career assessment and decision making, so that they can more realistically determine and accomplish their career and educational directions.

**Minority Resource Center and Programs, 573 Student Center, 577-4291:** The Minority Resource Center is designed to provide programs and services for Wayne State's diverse populations. Emphasis is given to supporting an environment which encourages students to fulfill their educational objectives and potential. Services include, but are not limited to: (1) one-on-one and group counseling and advising; (2) publication of the *Minority Resource Directory*; (3) workshops and programs applicable to the needs of minority populations; (4) University and community referrals; (5) information on graduate and professional schools; (6) peer counseling and mentoring; (7) faculty and staff assistance on special programs, services or projects; and (8) financial aid, internships and scholarship information geared for minority students. The *Minority Resource Directory* provides a brief profile of the programs and activities of special interest to minorities. The *Directory* is divided into the following sections: Pre-College Programs, Undergraduate Programs, Graduate Programs, Post-Baccalaureate Programs, Faculty/Staff Programs, and General Programs. The *Directory* is designed as a resource guide for students, faculty, staff, and the community at large.

**Re-Entry to Education Program, 573 Student Center, 577-4103:** The Re-Entry to Education Program is designed for people who have interrupted their formal education and who want additional education, specialized training, or academic degrees from Wayne State or other facilities in the Detroit metropolitan area. Materials are provided on admission, financial aid, academic support services, advising, and personal support services. Information and referrals are provided on career information, social services, legal services, health care, and child care. Assistance such as the mailing of forms or other material may be requested by telephone, and is available to undergraduate, postgraduate, or graduate students.

**Testing and Evaluation, 698 Student Center, 577-3400:** This office provides psychometric services to faculty, students, staff and the general community in the areas of selection, proficiency, certification, licensing, and registration examinations on the international, national, local, and institutional levels. On the international level, supervised test administration services (proctoring/third party interviews) are provided for collegiate and industrial clients. On the national level, testing is provided for all major secure testing programs—e.g., the Medical College Admission Test (MCAT), the Graduate Management Admission Test (GMAT), the Law School Admission Test (LSAT), and the Miller Analogies Test (MAT). On the institutional level, testing is provided for entrance examinations, freshman tests (placement/qualifying examinations for course selection), competency requirements, and tests required by professional associations and graduate schools. Other services to faculty, academic personnel, graduate students, and profit and non-profit agencies include consultation on the construction, scoring, and item

analysis of course and departmental examinations, the construction and analysis of survey instruments, the construction and analysis of student course evaluations, and Optically Mark Read (OMR) data entry services.

**Women's Resource Center and Programs, 573 Student Center, 577-4103:** This office provides services for University students, faculty and staff, and to community persons who want help in solving academic, personal, or family problems or who need information to assist in academic research related to the needs of women. Programs and workshops are free or at low-cost enrollment. Although activities focus on the needs of women, participation is open to men as well.

## International Services Office

5460 Cass Avenue, second floor; 577-3422

The University has one of the largest and most diversified international constituencies in the United States. The International Services Office provides individual counseling, 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 must 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 Degree Status) must successfully complete at least twelve credits each semester (excluding an approved annual vacation). Graduate students must successfully complete at least eight credits each semester (excluding an approved annual vacation; see an International Services Office counselor).

The University is required by INS regulations to file reports in cases of non-compliance.

**Scholars and Employees from Abroad:** Scholars and employees from abroad are often involved in University programs to enable the exchange of specialized knowledge and/or temporarily meet specialized staffing needs. The International Services Office provides centralized support services necessary to enable and assure the employability of such non-U.S. citizens within U.S. government regulations.

**Health Insurance:** All international students and exchange visitors are required to purchase health insurance. Details of this mandatory policy are available from this Office.

**International Activities:** A free International Coffee Hour, held in the Student Center Building every Wednesday from 11:30 a.m. to 1:30 p.m., provides opportunity for dialogue with and among all internationals at the University. Host families, field trips, orientation, translation, International Fair, holiday programs, and special services to foreign spouses are also coordinated through the International Services Office.

## Military and Veterans Affairs

5460 Cass Avenue, second floor; 577-3374

Veterans and eligible dependents have an excellent resource in this office. Knowledgeable counselors will be glad to discuss individual educational goals and problems. 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 whose cumulative h.p.a. is below the minimum will be placed on probation. Failure to raise the cumulative honor point average to the acceptable minimum will result in termination of V.A. benefits. Information on restoration policies and requests should be directed to an Office of Military and Veterans Affairs counselor.

**V.A. 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 capacities.

**V.A. Tutorial Assistance:** Tutorial assistance is available to help defray tutoring costs for eligible persons. Veterans must be enrolled on a half-time basis. Currently, tutorial benefits are paid up to \$76.00 a month for a maximum amount of \$911 with no charge against basic entitlement.

**V.A. Work-Study Jobs:** Part-time student assistant positions are usually available at the V.A. Regional Office or V.A. hospital (and sometimes on campus). 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.

## University Placement Services

First Floor, Faculty/Administration Building; 577-3390

The staff of University Placement Services provides help to students and alumni in defining career and employment goals and assists them in their search for employment opportunities.

**Cooperative Education:** The Cooperative Education Program provides students with opportunities to combine alternating periods of classroom learning with periods of paid on-the-job application in industry, business, government and social service agencies. The program is available to students in business administration, engineering and selected liberal arts curricula.

**Summer Internships:** The Summer Internship Program provides students with career-related paid employment. Preprofessional positions are available throughout the United States with a wide range of employers.

**Student Employment:** Student employment is available to those in search of financial assistance, or who wish to explore various career opportunities. Full or part-time jobs, either on a summer, seasonal, or continuous basis, are available on-campus through the Student Assistant Program or off-campus through an open posting process or the assistance of a placement coordinator.

**College Work-Study:** Students who accept college work-study as a part of their financial aid award register with Placement Services for referral to both on- and off-campus employers.

**On-Campus Interviews:** 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 visit the campus annually.

**Job Bulletin, Resume, and Credentials:** A Job Bulletin listing all full-time positions received by 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.

**Job Fair:** The Michigan Collegiate Job Fair is jointly sponsored by Wayne State and Eastern Michigan Universities. Twice each year over 100 various employers interview 1700 students from fifty-one colleges and universities for entry-level positions. Employment success rates for students who participate have been very high. Other job and career fairs, generally smaller and directed towards the needs of specific majors such as nursing, library science, and social work, are also conducted.

**Additional Services:** A comprehensive Placement Library is available for information on over 1000 employers. Annual surveys of Wayne State University graduates are conducted to determine kinds of jobs and salaries obtained by former students and the satisfaction they feel

about their jobs. A speaker's bureau is available to community, faculty and student groups, giving information on employment, resumes and interviewing techniques.

## Student Center and Program Activities

**Director:** 341 Student Center; 577-3482

**Assistant Directors:** 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. 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 Caesar's,' 'Friar Tuck's,' or 'Baskin-Robbins' on the first floor, or at the 'Burger King' 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:** Located in 211 Student Center, the Service Center provides the following services for a fee: typewriter rental, duplicating service, postal contract station, athletic tickets, SMART and DOT bus tickets, laminating and dri-mounting services, overnight photo-finishing service, school supplies, international identification cards, and State Hall locker rental. In addition, the University Lost and Found, magazines, and student organization mail boxes are located here. Campus bulletin board postings are also done by the Service Center staff.

**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:** Rooms are available for meetings, seminars, conferences and special programs. Bake sale, dance lottery, literature table and showcase information is also provided by the Reservations Office, located in 333 Student Center.

### 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. The student-run radio

station, WAYN, broadcasts campus-wide during fall and winter semesters. 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, Holiday Bazaar, 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, 9:00 a.m. to 5:00 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; Share-a-Ride Board; 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, a computerized volunteer matching service. The Center also sponsors informational and entertainment programs such as Hallo-Wayne, The Dating Game, Wayne Winter Week, Health Day, Spring Travel Fair, Community Service Fair, and Study Abroad Open House. 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 Superboard Cinema, a free film series on Tuesdays; the Wayne Underground Music Series, on Wednesdays; and Multiformity: An Entertainment Series, on Thursdays.

**Campus Tours:** Tours of the campus may be scheduled through this Office. 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, and tennis are offered for male students. Cheerleading, and swimming and diving are offered to both male and female students. Basketball, fencing, softball, 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 154-3 Matthaei Building; 577-4261.

**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. 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

### COMPUTING & INFORMATION TECHNOLOGY DIVISION (C&IT)

5925 Woodward Avenue; 577-4762

Computing and Information Technology (C&IT) is a service division of Wayne State University dedicated to providing high-quality information systems and associated services, promoting and supporting innovative and effective applications of information technology, and creating information technology opportunities for Wayne State through joint ventures with other organizations.

C&IT supports the missions and goals of Wayne State University and its units, defines University-wide architectures and standards for information systems and strategies to implement them, supports the development of unit-level strategies, and strives to make C&IT a premier information systems provider known for quality, innovation, and value. The division's computing goals are to:

make computing available to the Wayne State University community of faculty, staff, and students;

make computing affordable, responsive, highly dependable, and available on demand; and

incorporate computing technology into all appropriate aspects of Wayne State University—instruction, research, public service, and administration.

Since 1985 when this service division was created, much progress has been made toward implementing a technology environment that enhances the academic and administrative programs at Wayne State. Central facility computers have been upgraded and expanded, campus-wide networks have been installed, and computing laboratories have been opened. C&IT also provides data communications access to state, national, and international networks.

**Central Computing Resources:** C&IT's University Computing Center operates a number of mainframe computers and operating systems:

MTS (the Michigan Terminal System) runs on an Amdahl 5890/300E, operating in XA mode with two central processing units (CPUs), 68 MB of main memory, and sixteen input/output (I/O) channels;

IBM's MVS (Multiple Virtual Storage), including CICS, TSO/E, and TP systems, runs on a separate domain of the Amdahl 5890/300E, operating in ESA mode with two CPUs, 64 MB of main memory, and sixteen I/O channels;

IBM's VM/CMS (Virtual Machine/Conversational Monitor System), including PROFS, runs on an IBM 3081 GX, operating in 370 mode with two CPUs, 64 MB of main memory and sixteen I/O channels; and

NOTIS (Northwestern Online Total Integrated System) runs under MVS/CICS on an IBM 9000-210, with 64 MB of main memory and 16 I/O channels (for use by the University Libraries).

A full range of software extends the capabilities of these computer operating systems, including utilities, programming languages and compilers, statistical and mathematical libraries, graphics, database management systems, and text/word processing languages.

Storage capacities and output devices at C&IT include: 166 gigabytes of disk storage, three mainframe laser printers, two high-speed line printers, and (MTS only) a large-scale color graphics plotter.

All mainframe computer operating systems at Wayne State are accessible from WSUnet, the University's wide-area data communications network that connects major buildings — linking

about 3,000 terminals/microcomputers on campus—and supports X.25, Ethernet, and SNA/SDLC data communications.

Dial-in access to WSUnet is available via Merit/MichNet using an asynchronous communications program, such as Kermit. ASCII terminals on Merit/MichNet can access the SNA network through mainframe-based ASCII-to-IBM 3270 protocol conversion software. IBM 3270 terminals on the SNA network can access Merit/MichNet through mainframe-based IBM 3270-to-ASCII protocol conversion software.

Links with Merit/MichNet provide faculty, staff, students, and external customers with access to the Internet (NSFNET, ARPANET), SprintNet, Autonet, and Datapac networks. WSUnet also has a link to the BITNET academic network which provides electronic mail and file-transfer services throughout the United States and around the world.

**Central Computing Projects:** University departments can establish mainframe computing projects for their employees or units through C&IT's Business Services Office. Departments are not charged for the use of non-consumable resources, such as computing (CPU) time or disk storage, but are charged for the use of consumable resources, such as paper.

Any Wayne State undergraduate or graduate students can obtain a mainframe computing project (on MTS) at a special rate—the cost of computing is substantially discounted and the first \$10 of computing time is free. Students can open a computing project at either of C&IT's general-purpose Computing Laboratories. The computing project and MTS ID remain active until the student leaves Wayne State.

**Consulting:** C&IT provides a number of different consulting services:

*General Consulting Office, 67 Science and Engineering Library, 577-4778:* provides help using mainframe and microcomputer systems and software, including electronic mail; helps with discount computer purchases; and makes referrals to experts for networking, desktop publishing, graphics, and the like.

*Research Support Laboratory, 10 Education Building, 577-5804:* provides specialized help with designing and implementing research studies, analysis of data on mainframe and microcomputers, and reporting or publishing research results.

*Administrative Information Center (AIC), 577-0669:* provides help developing or printing FOCUS reports of data from WSU administrative information systems (such as HRS or FAS).

*Network Control Center, 577-4746:* helps mainframe computer users dial into WSUnet or MichNet (Merit); and provides information on the status of WSU's communications network (telephone only).

*Directory of Volunteer Consultants:* lists the names and telephone numbers of faculty and staff members in the WSU community who volunteer to help others to use a variety of computers, operating systems, and software.

**Computing Laboratories:** C&IT's Planning and Support Services (PaSS) Department operates two general-purpose computing laboratories and a special-purpose Research Support Laboratory on the main campus. C&IT's laboratories may be used by WSU students, employees, and members of the Alumni Association. The general-purpose computing laboratories are located on the lower levels of the Science and Engineering Library and the Student Center Building and contain Macintosh and IBM (or-IBM compatible) computers, dot-matrix and laser printers, and a full range of general-productivity software (word processing, database, spreadsheet and communications). The Research Support Laboratory is in 10 Education Building and contains high-end Macintosh and IBM computers, laser printers, and a full-range of research support software (statistical, graphics, research publishing, database, and communications). There is *no charge* for using computers, software, or dot-matrix printers at any of C&IT's Computing Laboratories and only a nominal charge for laser printing.

**Computer Classroom:** A multimedia computer classroom, located in C&IT's Computing Laboratory in the Science and Engineering Library, contains a ceiling-mounted, remote-controlled video projector that projects color images from a Macintosh and IBM microcomputer and a VCR onto a high-gain projection screen; a remote-controlled 35mm slide projector; an Apple compact disk player; and a Local Area Network that connects both IBM and Macintosh microcomputers to a fileserver and shared printers. C&IT's computer classroom can be reserved by WSU faculty or staff for hands-on training or group presentations.

**Computing Seminars:** PaSS teaches free, noncredit computing seminars throughout the year for WSU students, employees, and members of the Alumni Association. External customers with computing projects may also register free of charge for seminars on mainframe computer systems and applications. The schedule of seminars is posted in most departmental offices and is published in the bimonthly *Computing and Information Technology Newsletter*. Registration may be made by telephone, or in person at either of C&IT's general-purpose Computing Laboratories.

**Publications and Documentation:** The *Computing and Information Technology Newsletter* is published bimonthly and contains the current operating hours, locations, and telephone numbers of all C&IT departments and Computing Laboratories. Online help files, technical documents, and news and information facilities are maintained by PaSS on the MTS and VM/CMS mainframe computer systems. Manuals on using computer systems and applications software are available for reference in all C&IT Computing Laboratories.

**Organization:** Computing and Information Technology is administered by a vice president who reports directly to the University's president. The major departments in the division are as follows:

*The Information Technology Institute (ITI)* conducts joint-venture research and development projects in information technology; works with Wayne State faculty to identify research projects; and secures external funding from government, business, and industry.

*The Management Information Support Center (M.I.S.C.)* develops, supports, and maintains Wayne State's administrative information systems such as FAS (Financial Accounting System) and HRS (Human Resources System); operates the Administrative Information Center (AIC) to help management and staff develop or print reports of data extracted from administrative information systems; and maintains WISE (Wayne's Information System Environment) which provides online access to official University systems, documents, and information of general interest to the University community.

*Marketing and Development* promotes the external use of the University's computing, communications, and information processing resources; supports customers from government, education, health care, business, and industry across the United States and in twenty foreign countries; and produces promotional materials (print, radio, and video) for C&IT and external customers.

*The Michigan Small Business Development Center (MI-SBDC)* oversees and manages a statewide network of thirty counseling and service centers for the purpose of providing management and technical assistance to Michigan's existing and prospective small business owners.

*Planning and Support Services (PaSS)* helps students, faculty, administrators, and external customers use the University's diverse computing resources and services by providing general and research consulting (telephone, online, and walk-in); teaching free computing seminars throughout the year; designing and installing LANs; planning local computing environments; maintaining online documentation and news and information facilities; publishing a bimonthly newsletter; completing special projects; and operating general-purpose computing laboratories, a multimedia computer classroom, and the Research Support Laboratory.

The University Computing Center (UCC) develops, operates, and maintains C&IT's central (mainframe) computing resources and the data communications technology to make these resources available; supports and provides access to campus (WSUnet), state (Merit/MichNet), and international computer networks (BITNET and the Internet).

University Telecommunications recommends, installs, and operates Wayne State's transmission facilities (wiring, cable, microwave, and satellite) for voice, data, and video; operates the University's main switchboard and the Telephone Office where all orders for telephone service and repair are processed.

University Television operates Wayne State's educational television broadcast facilities and manages broadcast services and operations for the Community Telecommunications Network (CTN), a consortium of local educational institutions and public broadcasting stations.

#### C&IT Telephone Numbers of General Interest:

General C&IT Information	577-4762
Office of the Vice President	577-4722
Administration	577-4732
Administrative Information Center (AIC)	577-0669
Business Services Office	
Computing projects for WSU faculty & staff	577-4642
Computing projects for WSU students	577-2067
Computer Classroom (Multimedia)	577-6714
Computing Laboratories:	
General Purpose—Science & Eng'g. Library	577-5805
General Purpose—Student Center Building	577-5485
Research Support Laboratory (RSL)	577-5620
Consulting Offices:	
General Purpose	577-4778
Research	577-5804
Distribution (of mainframe—printed output)	577-4755
Information Security	577-3203
Information Technology Institute (ITI)	577-0731
Management Information Support Center (M.I.S.C.)	577-1950
Marketing and Development	577-1111
Michigan Small Business Development Center	577-4848
Network Control	577-4746
Planning and Support Services (PaSS)	577-5515
Research Support Laboratory (RSL)	577-5620
Seminar Registration	577-5805
Telephone Office	577-1978
Telephone Repair	577-2218
University Computing Center (UCC)	577-0153
University Telecommunications	577-4728
University Television	577-2603

## 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.

*Katherine Faville Hall* houses juniors, seniors, and graduate students in fully furnished apartments. Roommates are administratively assigned and most apartments are designed for double occupancy. Nine-month contracts and summer session contracts are available.

*Wayne State Housing* offers a variety of apartment dwellings for individuals and families wanting a twelve-month lease.

*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. Children are not permitted to reside at the Chatsworth Tower and eligibility is restricted to faculty, staff and graduate students.

*The Chatsworth Annex* offers spacious, unfurnished two-bedroom units. Families with children are welcome. Residents pay their own utility bills except for heat and water.

*The Santa Fe and Sherbrooke Buildings* are older buildings rented unfurnished. Children are not permitted to reside in these buildings.

Further information and application forms are available upon request at the Housing Office.

## OMBUDS OFFICE

1322 Faculty/Administration Building; 577-3487

*Ombudsperson:* Louis Stern

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 inertia, overcome unfair treatment, or obtain consideration of extenuating circumstances.

Students may request information, advice, or assistance in expediting action on academic problems such as admission, advising, degree requirements, grades, records, registration, and teaching; and on non-academic problems such as financial aid, housing, parking, payroll, and tuition and fees. Students, faculty and staff can help improve the quality of service in the University by calling the Office's attention to problematic areas.

The Ombudsperson's Office investigates appeals and complaints; it exercises independence of judgment regarding any action it may take regarding them. It will maintain student anonymity if requested to do so. Although the Office has no authority to change academic or administrative decisions, it can recommend changes in policy or procedure to administrative decision-makers.

## UNIVERSITY LIBRARIES

The University Libraries are housed in six separate units, five of which are free-standing buildings. As of 1991, the library system reported holdings of 2,578,000 volumes, 24,658 current journal subscriptions, and 3,158,000 microforms, in addition to numerous films, filmstrips, maps, sound recordings, and videocassettes.

## HEALTH SERVICE

4K, University Health Center; 745-4774

Students are encouraged to use the Health Service at any time 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.

Students may choose to purchase hospitalization insurance for a reasonable fee. The policy provides stipulated amounts for hospitalization, surgery and emergency room fees. Forms for purchasing this insurance are available from G-M Underwriters, Inc., telephone: 652-8404.

Medical visits to the Health Service are by appointment, which can be made by telephoning 745-4774.

The library system includes the Purdy/Kresge Library complex, the Arthur Neef Law Library, the Science and Engineering Library, the Vera Parshall Shiffman Medical Library, the Pharmacy and Health Learning Resource Center, and the Federal-Mogul Library Annex. Except for items in special collections and in the library annex, the University collections are housed in open stacks. Further details about these libraries are given below.

Wayne State University is the host institution for DALNET, a Detroit metropolitan library network. Through terminals in the libraries, users can access over 5,000,000 volumes representing the majority of holdings in the area's educational institutions, including the Detroit Public Library, whose main branch is located near Wayne State. In addition, the University Libraries belong to the Center for Research Libraries with its 3,500,000-volume collection. At the Center for Research Libraries are found government documents, newspapers, and statistical materials from around the world, as well as specialized journals and older research materials.

All University Libraries offer reference and information services, interlibrary loan, computer searching, photocopying, and bibliographic instruction programs. The libraries are making use of the latest computer technologies to provide state-of-the-art access to instructional and research materials.

## Purdy/Kresge Library

Telephone: 577-4040

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 Science Program. The Purdy/Kresge Library is the largest of the University's libraries.

The Purdy/Kresge Library contains approximately 1.4 million books, 13,000 current journals, extensive microform collections, and the largest government document collection on campus. In addition, the Media Library within the Purdy/Kresge Library holds over 8,000 films and videotapes, and has a computer instruction laboratory. 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 Science. Tours of the collection and facilities are available for classes or other interested groups.

## Science and Engineering Library

Telephone: 577-4066

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, Food and Nutrition Science, and Geology in the College of Liberal Arts. In addition, the Library works closely with local businesses to meet their information needs.

The Library contains over 500,000 volumes and currently receives over 3,000 journals. Special holdings include the System on Automotive Safety Information (SASI) collection, a unique resource for transportation research, as well as the River Rouge Collection and the Hooker Historical Collection. The Library also houses the Central Technical Services Department of the University Libraries.

## Vera Parshall Shiffman Medical Library

Telephone: 577-1088

The Shiffman Medical Library, located in the Detroit Medical Center since 1970, supports the educational, research, and clinical programs

of the School of Medicine and the College of Pharmacy and Allied Health Professions.

The Library has over 210,000 volumes and about 3,000 journal subscriptions. The Computer Resources Lab, opened in 1988, provides computer hardware and software support for patient management and medical decision making as well as for tutorials. The Shiffman Medical Library is an active participant in the Greater Midwest Regional Library Network and can draw upon its interlibrary loan resources to provide access to the nation's biomedical information.

The Learning Resources Center, a special collection in the College of Pharmacy and Allied Health Professions, contains primarily non-print materials, especially videotapes, audiotapes, and slides.

## Arthur Neef Law Library

Telephone: 577-3925

Wayne State's law library is the second largest in the state of Michigan, comprising some 415,000 volumes. It is a major resource for faculty and students of the Law School, as well as for members of local and state bar, representatives of state and federal agencies, alumni and students of other law schools. The Library subscribes to over 1,500 journals and over 1000 looseleaf services. An official depository for U.S. Government publications since 1971, the Law Library holds over 100,000 government documents, including 3,500 current serials.

Students and faculty have available the use of the two major legal databases, LEXIS/NEXIS and WESTLAW, computerized research for institutional purposes, as well as computer laboratory facilities for supportive services.

In addition to complete collections of all federal and Michigan legal materials, the Library contains the reported cases of the highest courts of all of the states and territories of the United States, as well as their statutory compilations, digests and encyclopedias. It also contains such other state materials 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 faculty and students. In addition, the Library has such research aids as digests, citators, legal encyclopedias, dictionaries, form books, looseleaf services, indexes, and reference works. All American and some foreign law reviews and similar legal publications are available. There are over 600,000 microforms and tapes, including the complete collection of United States Supreme Court records and briefs, and most congressional publications from 1970. There are also special library collections for the faculty and for those engaged in special Law School work such as Law Review, Moot Court, and Legal Aid.

The Library has benefited greatly from the generosity of several donors who have made major contributions in recent years. Dr. Alwyn Freeman made a very substantial gift of international and comparative legal materials, a great part of which now forms the Alwyn V. Freeman International Law Collection. A further gift consisting of 3,000 volumes of basic legal materials to be used primarily by the *Wayne Law Review*, was made in honor of Judge Robert S. Marx by his testamentary trustees. Detroit lawyer Donald Barris, Class of 1940, has made possible major renovations of the library's working areas.

## University Archives

Walter P. Reuther Library; 577-4024

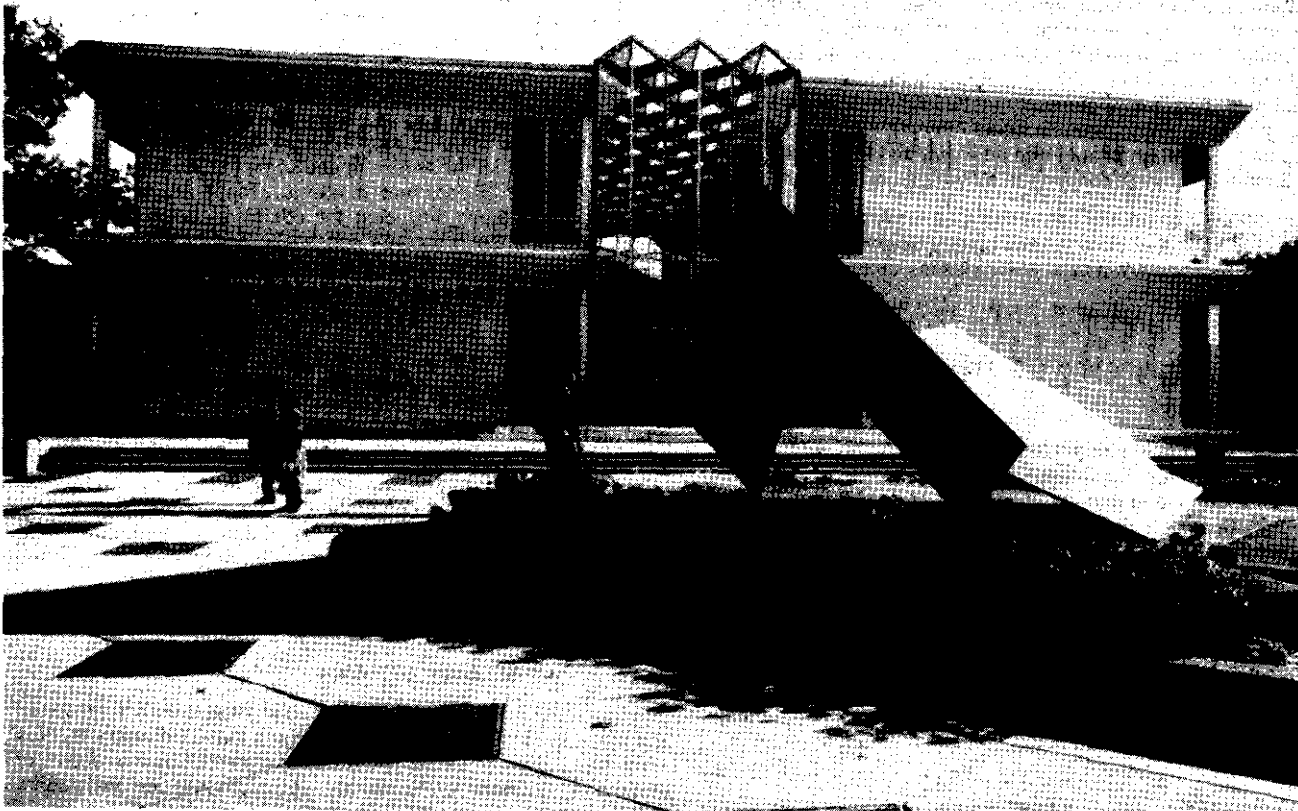
The University Archives was established in 1958 to collect, preserve, and make available to qualified researchers those University records which have research value. The Archives also collects the records of student organizations, professional associations and personal papers of faculty members who have contributed to the development of the University and higher education. The collections include manuscripts, photographs, publications, tape recordings, Board of Governors Proceedings, catalogs, schedules of classes and an extensive vertical file. The Archives currently holds over 225 newsletters and

publications including *Inside Wayne State*, *The South End* and less commonly known titles such as *Crumbs and Ravelings*, *Gabriel's Horn* and *Short Circuit*.

## Archives of Labor and Urban Affairs

Walter P. Reuther Library; 577-4024

The Archives of Labor and Urban Affairs was established in 1960 to collect, preserve and make available to qualified researchers records of the American labor movement and related social, economic and political reform groups. The Archives have since become the official depository for the inactive files of the Congress of Industrial Organizations, the United Auto Workers, the American Federation of Teachers, The Newspaper Guild, the United Farm Workers, the American Federation of State, County and Municipal Employees, the Airline Pilots Association, the Association of Flight Attendants, the Industrial Workers of the World and many state and local labor organizations. Files have also been gathered from such groups as the Citizens' Crusade Against Poverty, the American Civil Liberties Union, the National Association for the Advancement of Colored People, the United Community Services of Detroit, and New Detroit, Inc. Many individuals who played leading roles in labor and urban affairs have also placed their papers in the Archives. Correspondence, minutes, clippings, notes, newspapers and other written records, as well as films, tapes and photographs, are available for research.





# **SCHOOL OF BUSINESS ADMINISTRATION**

**DEAN: William H. Volz**

# 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 American Assembly of Collegiate Schools of Business 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.

## 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, 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 Program

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 during the late afternoon and evening, and on Saturday mornings.

## Graduate Degree

### *MASTER OF BUSINESS ADMINISTRATION*

# MASTER OF BUSINESS ADMINISTRATION

## Admission

*Admission to any graduate program is contingent upon admission to the Graduate School; for requirements, see page 14. 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 and one-half hour aptitude test designed to measure certain mental abilities and skills important in the study of management. The GMAT is entirely in English and contains both verbal and quantitative material. Study guides for the GMAT are available at most university and commercial bookstores.

Since the GMAT is usually offered only four times a year with registration deadlines set approximately three weeks before the test date, it is important that a student contemplating graduate study in business administration make arrangements to take the test at the earliest possible date. Address all correspondence regarding registration, test centers, credentials for admission to the test, and score reports to: Graduate Management Admission Test, Educational Testing Service, Box 966, Princeton, New Jersey 08540.

Order forms for the GMAT *Bulletin of Information for Candidates* can be obtained from the Office of Student Services, Room 103, Prentis Building, or from the University Testing and Evaluation Office, 698 Student Center. A limited supply of current GMAT Bulletins of Information is available at these locations.

**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 20–30 and 53, respectively.

### 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 concentration/elective. Depending on the student's background, no foundation course work or as many as ten foundation courses may be required. All students must complete eight core and four concentration/elective courses.

### — Foundation Requirements

Of the following foundation courses, those at the 600 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, concentration and elective courses.**

ACC 601	Financial Accounting
ACC 602	Managerial Accounting
ACC 605	The Legal Environment of Business
ACC 607	Management of Business Information Systems
FBE 604	Financial Administration
FBE 608	Economic Environment and Business Behavior
FBE 609	Quantitative Analysis: Theory and Application
MGT 600	Introduction to Operations Management
MGT 606	The Process of Management
MKT 603	Marketing Principles and Policies

In addition to these courses, one college-level mathematics course is 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 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:

ACC 710	Financial Reporting Framework I
FBE 701	Quantitative Methods Applied to Business Decisions
FBE 721	Managerial Finance
FBE 782	Managerial Economics
MGT 706	Management and the Organization
MGT 774	Business and Contemporary Society
MGT 789	Seminar in Business Policy
MKT 703	Marketing Strategy

MGT 789, Seminar in Business Policy, is to be taken in the final twelve credits of the graduate program and only after the completion of the other seven 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 concentration/elective requirements.

## — Concentration/Elective Requirements

The purpose of the concentration requirement is to provide depth in a specialization that will contribute to the student's attainment of his or her professional objectives. The elective course work is designed to provide additional breadth in the student's program.

A concentration area consists of at least two courses (at the 700 level or above) selected to meet the particular professional needs of the student. The choice of a concentration area should be made at the time of application or as soon as possible after admission to the program. The choice *must* be made before the completion of twelve credits in course work at the 700 level or higher.

Students must also take two elective courses at the 700 level or higher. One elective may be taken in the concentration area if the student desires additional depth in the specialization. **However, at least one elective must be taken outside the student's area of concentration.** (Students in the International Business concentration may take both electives in this area, because of its interdisciplinary nature.)

The student may wish to consult one or more graduate advisers before selecting his/her concentration and elective course work. 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 courses available in the concentration areas. Students may, with their adviser's prior approval, select different combinations of concentration courses within a department. Students who have had a course substituted in the core cannot use the substituted course to satisfy the concentration/elective requirements.

### Accounting

Elect at least two of the following:

ACC 712	Tax Problems in Business Affairs
ACC 713	Cost Accounting, Control, and Analysis
ACC 714	Advanced Tax Problems
ACC 717	International Accounting
ACC 719	Advanced Auditing
ACC 720	Internal Audit Theory
ACC 730	Tax Research

### Business Economics

FBE 783	Business Conditions Analysis
FBE 709	Money and Capital Markets

### Management Information Systems

ACC 751	Data Base Management
ACC 752	Information Systems Design

### Finance

Elect either FBE 722 or FBE 723 and at least one of the following:

FBE 709	Money and Capital Markets
FBE 722	Advanced Managerial Finance
FBE 723	Investment Policies
FBE 729	Topics in Finance
FBE 734	Futures and Options
FBE 787	International Business Finance

### Industrial Relations

MGT 775	Labor Relations and Collective Bargaining
MGT 777	Union Contract Administration

### International Business

MKT 746	International Business
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— and at least two of the following:

ACC 717	International Accounting
FBE 787	International Business Finance
MGT 800	Seminar in Management
MKT 750	International Marketing Strategy

### Management and Organizational Behavior

MGT 762	Complex Organizations
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— and at least one of the following:

MGT 763	Organizational Change and Development
MGT 766	Entrepreneurial Management
MGT 768	Executive Decision Making
MGT 800	Seminar in Management
MGT 801	Seminar in Management: Organizational Culture & Power

### Personnel/Human Resources

MGT 764	Management of Human Resources
MGT 775	Labor Relations and Collective Bargaining

### Marketing

MKT 745	Business Research and Methodology
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— and at least one of the following:

MKT 733	Managerial Communication
MKT 742	Sales Management Problems
MKT 743	Advertising Management
MKT 746	International Business
MKT 747	Consumer and Industrial Buying Behavior
MKT 750	International Marketing Strategy
MKT 762	Business Logistics Management
MKT 770	Management of Retail Enterprises
MKT 787	Seminar in Marketing

## 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.

# 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 20–30 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.

## 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 700 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.

## Change of Concentration

Students wishing to change their concentrations within the School of Business Administration should contact the Office of Student Services at 577–4510. Students are advised that such changes occurring late in their program may require the completion of additional courses beyond those originally assigned in the *Plan of Work*.

## 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. 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 700 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. curriculum has been designed to provide a 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 Seminar in Business Policy (MGT 789) 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.

Students who do not adhere to this regulation 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. 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. 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 22.

## 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 600-609 and 700 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 procedures 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 46) 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 for the removal of 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 700-level requirements.* The six-year period begins at the start of the semester during which the student takes his/her first 700-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 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 32. 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 Recognition and Awards Banquet 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. Brillhoff Scholarship: Beta Alpha Psi Excellence in Writing.* This award is given in honor of Abraham J. Brillhoff to the undergraduate and graduate accounting students for outstanding manuscript writing.

*Commercial Real Estate Women (CREW).* Established in 1990 by the Association of Commercial Real Estate Women. Designated for award to a student interested in commercial real estate.

*Charles E. Dover Scholarship.* Designated for 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 Main 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; see page 32) 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 32.

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.

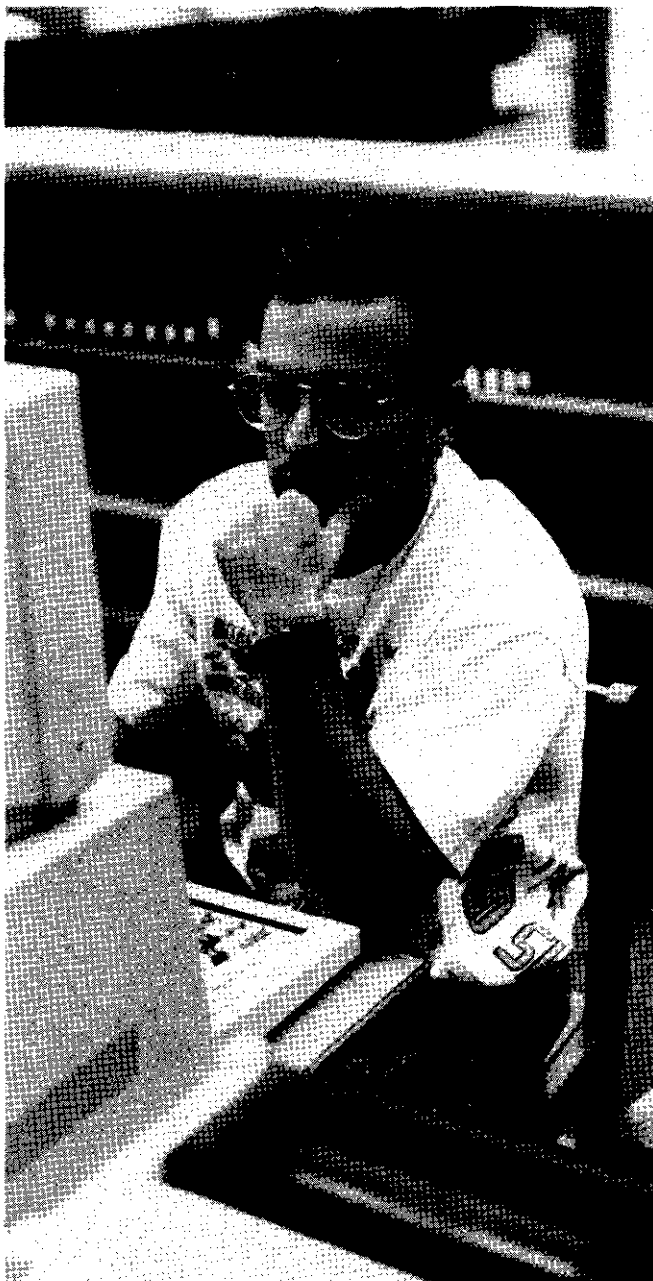
Students holding graduate teaching or research assistantships, or other tuition-paying fellowships, internships, traineeships or scholarships, and salaried or full-time employees of Wayne State University are not eligible for these scholarships. Additional information and application forms are available 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. Lowell Wenger, Fulbright Program Adviser, Department of Physics, 391 Physics Building, 666 W. Hancock, Detroit, MI 48202; (313) 577-2774 or 577-2721.

**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, 573 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 Education and Research

The Center for International Business Education and Research (CIBER) is the focal point of the School's instructional and research programs in the rapidly-expanding international business area.

## Communications Laboratory

The Richard A. 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 five modern microcomputer laboratories with a total of 125 work stations in the Prentis Building. Three serve as microcomputer classrooms, and two labs are designated for student walk-in traffic.

The microcomputers are networked to several laser printers and many are connected to the University's mainframe. Students also have access to a color plotter capable of producing transparencies.

Currently over 600 sets of software representing more than twenty-five different software packages are available. The microcomputer laboratories are open to business administration students seven days per week, providing students with access during both the day and evening.

Additional microcomputer facilities at other main campus and extension center locations are also available to students.

## 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.

Within the Professional Development Division is *The Management Center*, through which numerous programs are offered to the

corporate community. It offers in-house programs at corporate locations as well as on campus and at other locations in the Detroit metropolitan area. Director of The Management Center is Mr. Rod Beaulieu: 577-4449.

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 Director of the Professional Development Division is Dr. Raymond Genick: 577-4353.

## W.S.U. Small Business Development Center

In the fall of 1983, the Wayne State University School of Business Administration was selected by the United States Small Business Administration as the 'lead institution' for the federally sponsored Small Business Development Center (SBDC) in the State of Michigan. The statewide SBDC network, now comprised of some forty-three subcenters, is designed to provide comprehensive management and technical assistance to the small business community.

The Wayne State SBDC also serves as the coordinating agent for present and proposed small business assistance programs throughout the metropolitan Detroit area. It is the focal point for linking together resources of federal, state, and local governments with the resources of the University and the private sector.

General assistance is provided to small business owners/operators through training and counseling programs offered through the W.S.U. SBDC. Training is offered through classroom courses, major conferences, and informal workshops. Both short- and long-term counseling cover a wide variety of relevant subject areas including capital acquisition, skills assessment, legal information, and economic and business data analysis.

The director of the Wayne State SBDC (subcenter) is Dr. Raymond Genick; telephone: 577-4850.

## Small Business Institute

The Small Business Institute (SBI) began in 1972 in cooperation with the U. S. Small Business Administration to offer business counseling to area entrepreneurs and small business owners/managers. Selected seniors and graduate students are invited to participate in this program in conjunction with their course work, including directed studies in the School. Retail, wholesale, manufacturing and service firms provide students with an opportunity to reduce theory to practice across a variety of business and administration issues.

With over 1000 counseling cases completed to date, the School's SBI is one of the largest institutes in the United States. The SBI plays an important role in fulfilling the School's service mission and in providing a unique educational opportunity for selected students. For information, contact Dr. John G. Maurer, Director, Small Business Institute; 577-4517 and 577-4515.

## Placement Services

The School of Business Administration works with the University Placement Services office to assist students in finding employment both while going to 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, students 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/Professional Advertising Association (B/PAA)* 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 B/PAA 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 Planning Forum* is the nation's largest professional association for corporate planners. It has become widely known for its significant contributions to the development of the planning process, the education of its members, and acceptance of the profession in the business world. The Wayne State chapter participates regularly in activities of the Detroit professional chapter.

*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.



# Administration and Faculty of the School

**Dean:** William H. Volz  
**Associate Dean of Academic Affairs:** David L. Williams  
**Associate Dean of Research:** Robert C. Bushnell  
**Assistant Dean of Student Affairs:** Donna L. Santo  
**Assistant Dean of Administrative Affairs:** Deborah L. Stanifer  
**Assistant to the Dean:** Louise Mocerì  
**Chairperson, Department of Accounting:**  
Alan Reinstein  
**Chairperson, Department of Finance and Business Economics:**  
James L. Hamilton  
**Chairperson, Department of Management and  
Organizational Sciences:** Joseph B. Stulberg  
**Chairperson, Department of Marketing:** Edward A. Riordan  
**Director, Bureau of Business Research:** Robert C. Bushnell  
**Director, Professional Development Division:** Raymond M. Genick  
**Director, The Management Center:** Rodney B. Beaulieu  
**Director, W.S.U. Small Business Development Center:**  
Raymond M. Genick  
**Director, Small Business Institute:** John G. Maurer  
**Manager, Computing and Information Resources:** Judith A. Wright  
**Director, Center for International Business Education  
and Research:** Attila Yaprak  
**Manager, Development:** Barrie Werba  
**Acting Director, Student Services:** Linda S. Zaddach

## Professors

Gerald Alvin, Hugh M. Cannon (Adcraft Club/Leonard Simons—Larry Michelson Professor in Advertising), Victor C. Doherty James Hamilton, J. Patrick Kelly (Kmart Chair in Marketing), James E. Martin, John G. Maurer, Richard O. Osborn, Alan Reinstein, Edward A. Riordan, William H. Volz

## Associate Professors

Ishmael P. Akaah, John D. Beard, B. Anthony Billings, Robert C. Bushnell, Yitzhak Fried, Donald E. Gorton, George C. Jackson, K. S. Krishnan, James T. Low, Thomas J. Naughton, Harvey Nussbaum, Barbara Price, Kelly R. Price, Jone M. Rymer, Joel M. Shulman, Louis L. Stern, Myles S. Stern, Joseph B. Stulberg, Harish L. Verma, David I. Verway, Frank L. Voorheis, David L. Williams, Attila Yaprak

## Assistant Professors

Richard A. Ajayi, Fouad K. AlNajjar, A. Arunkumar (Visiting), Karen A. Bantel, Mark E. Bayless, Howard Bowens, Timothy W. Butler, Thomas E. Buttross, Vivian L. Carpenter, Brian Chambers, H. Alex Chang, Rick A. Cooper, Johannes Denekamp, Mahmoud Haddad, Daniel R. Home, Ronald H. Humphrey, Ariel Levi, M. Christine Lewis, Margaret A. Monroe, Mbodja Mougoue, Peter Mudrack, Jennifer R. Needleman (Visiting), Effy Oz, Jack D. Schroeder, Adrienne L. Slaymaker, Toni M. Somers, Albert D. Spalding, Jr., Jeffrey J. Stoltman, John C. Taylor, Larry VanSyckle, William V. Vetter

## Senior Lecturers

Richard C. Becherer, Susan D. Garr, Donald Houtakker, David May, Susanne Paranjpe

## Lecturers

Charles C. Baughn, Pamela Jones, Jack R. Kuzminski, Glenn G. Malcolm, Margaret A. Merriman, Sandra G. Penn, John L. Perentesis, Donna L. Santo, Audrey Taylor, Sheri Tice, Allen P. Warner

## Faculty Emeriti

Charles Alberry, Francis J. Brown, Walter J. Chamberlin, Bruce E. DeSpelder, Edwin F. Harris, Alice Wolfram Herge, Mary S. Irwin, H. Webster Johnson, Leon R. Klein, Ferdinand F. Mauser, Raymond T. Murphy, Donald H. Palmer, Irving Paster, Edward T. Raney, John J. Rath, Milton H. Spencer, Fred P. Unruh, 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; 577-4547
Assistant Dean of Student Affairs .	226 Prentis Building; 577-4472
Assistant Dean of Administrative Affairs	105M Prentis Building; 577-4502
Manager, Computing and Information Resources	6 Prentis Building; 577-4546
Director, Professional Development Division	240 Rands House; 577-4448
Director, Management Center .....	240 Rands House; 577-4449
Director, W.S.U. Small Business Development Center	2727 Second Avenue; 577-4850
Director, Small Business Institute	218 Prentis Building; 577-4517
Director, Center for International Business Education and Research (CIBER) .....	305 Prentis Building; 577-4487
Director of Student Services .....	103 Prentis Building; 577-4510
Student Senate Office .....	209B Prentis Building; 577-4783
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

*The following courses, numbered 600-999, are offered for graduate credit. Courses numbered 090-599, which are offered for undergraduate credit only, may be found in the Undergraduate Bulletin. For interpretation of numbering system, signs and abbreviations, see page 463 .*

### ACCOUNTING (ACC)

#### 601 Financial Accounting. Cr. 3

Prereq: admission to a graduate program. Fundamental principles of financial accounting, dealing primarily with reporting the financial results of operation, financial position, and changes in financial position to investors, managers, and other interested parties. (T)

#### 602 Managerial Accounting. Cr. 3

Prereq: ACC 601 or equiv.; admission to a graduate program. Fundamental principles of managerial accounting, dealing primarily with the preparation and utilization of financial information for internal management purposes. (T)

#### 605 The Legal Environment of Business. Cr. 2

Prereq: admission to a graduate program. Effects of legal forces on business policy and practice. Managerial decision-making in a legal environment. (T)

#### 607 Management of Business Information Systems. Cr. 3

Prereq: admission to a graduate program. Student computer account required. Material fee as indicated in *Schedule of Classes*. Concepts and techniques of design, use, and control of business information systems. Topics include: computer systems, information theory, decision making, and management implications. Emphasis on case studies. (T)

#### 710 Financial Reporting Framework I. Cr. 3

Prereq: completion of all foundation requirements. No credit for undergraduate majors in accounting. The concepts of financial reporting. The application of accounting theories, principles, and standards in fitting financial data within this conceptual framework, with an emphasis on asset valuation and income measurement. (T)

#### 712 Tax Problems in Business Affairs. Cr. 3

Prereq: ACC 710. Application of tax laws and regulations to the business affairs of corporations and individuals. (Y)

#### 713 Cost Accounting, Control and Analysis. Cr. 3

Prereq: ACC 710. 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)

#### 714 Advanced Tax Problems. Cr. 3

Prereq: ACC 712 or equiv. Problems and cases concerning such areas as gains and losses; corporate organizations, distributions, reorganizations and liquidations; partnerships; and estate and gift taxes. (Y)

#### 717 International Accounting. Cr. 3

Prereq: ACC 710. Consolidated statements for multinational corporations. Foreign currency translations; accounting for inflation; transnational financial reporting problems. (Y)

#### 718 Auditing. Cr. 3

Prereq: Prereq: ACC 710. Principles and procedures of internal and external auditing; statistical sampling and other advanced auditing techniques; professional standards and responsibilities of the auditor. (Y)

**719 Advanced Auditing. Cr. 3**

Prereq: ACC 718 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)

**720 Internal Audit Theory. Cr. 3**

Prereq: ACC 718 or equiv. Theoretical and practical applications of management-oriented internal auditing are examined and related to the three facets of internal auditing: financial auditing, compliance auditing, and operational auditing. (I)

**730 Tax Research. Cr. 3**

Prereq: ACC 712 or equiv. Methodology of federal tax research in the Code, regulations, court decisions, tax looseleaf, and computer-assisted research; communication of argument and conclusions. Emphasis on sources and roles of the legislative, executive and judicial branches in creating, interpreting and enforcing tax policies and practices. (Y)

**751 Data Base Management. Cr. 3**

Prereq: ACC 710. Student computer account required. Material fee as indicated in *Schedule of Classes*. 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. (Y)

**752 Information Systems Design. Cr. 3**

Prereq: ACC 710. Student computer account required. Material fee as indicated in *Schedule of Classes*. Principles of developing computer-based accounting and management information systems, emphasizing the phases of the life cycle of information systems projects. (Y)

**753 Information Systems and Ethics. Cr. 3**

Prereq: ACC 607 or 563. Ethical issues in the information age; computer crime, privacy, copyright of software; other ethical issues related to use of information systems. (Y)

**795 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)

**799 Master's Essay Direction. Cr. 3**

Prereq: consent of adviser. (T)

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

Prereq: consent of adviser. (T)

## FINANCE AND BUSINESS ECONOMICS (FBE)

**604 Financial Administration. Cr. 2**

Prereq: ACC 601 or equiv.; admission to a graduate program. Methods of financial administration, including the management of funds, financial planning, and policies of financial institutions. Recommended for all students who have not taken such a course in the past three years or undergraduate finance majors with degrees older than five years. (T)

**608 Economic Environment and Business Behavior. Cr. 3**

Prereq: admission to a graduate program. Current economic conditions and their influences on business. Analyses and interpretations of government policies and practices. (T)

**609 Quantitative Analysis: Theory and Application. Cr. 3**

Prereq: one college course in finite math or higher; admission to a graduate program. Uses of statistical methods in business. Probability; frequency distributions; sampling; statistical inference; regression. Applications to auditing, marketing research, production control, sales forecasting, and related areas. (T)

**701 Quantitative Methods Applied to Business Decisions. Cr. 3**

Prereq: completion of all foundation requirements. Student computer account required. Selected applications of quantitative tools and techniques, including optimization methods and decision analysis, to business problems. Computer utilization. (T)

**709 Money and Capital Markets. Cr. 3**

Prereq: completion of all foundation requirements. Financial intermediaries; the capital markets; the money market and interest rates. (F,W)

**721 Managerial Finance. Cr. 3**

Prereq: completion of all foundation requirements. No credit for undergraduate majors in finance. Study of the principles of finance with applications focusing primarily on corporations. Coverage includes analysis of problems in working capital management, capital budgeting, valuation theories, and dividend and long term financing policies. (T)

**722 Advanced Managerial Finance. Cr. 3**

Prereq: FBE 721. 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)

**723 Investment Policies. Cr. 3**

Prereq: FBE 701, 721. 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)

**729 Topics in Finance. Cr. 3**

Prereq: FBE 721. 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)

**734 Futures and Options. Cr. 3**

Prereq: FBE 721. 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)

**782 Managerial Economics. Cr. 3**

Prereq: completion of all foundation requirements. 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)

**783 Business Conditions Analysis. Cr. 3**

Prereq: FBE 782. Analysis of current economic conditions and their effects on business. Governmental policies discussed and evaluated. (I)

**787 International Business Finance. Cr. 3**

Prereq: FBE 721. 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)

**795 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)

- 799 Master's Essay Direction. Cr. 3**  
Prereq: consent of adviser. (T)
- 899 Master's Thesis Research and Direction. Cr. 1-8(8 req.)**  
Prereq: consent of adviser. (T)

## MANAGEMENT AND ORGANIZATION SCIENCES (MGT)

- 600 Introduction to Operations Management. Cr. 2**  
Prereq: admission to a graduate program. Introduction to concepts, models and techniques as they apply to the solution of problems in production operations management. Topics include product planning, forecasting, facility layout analysis, aggregate planning, production scheduling, inventory control, material requirements planning, PERT, and CPM. (T)
- 606 The Process of Management. Cr. 2**  
Prereq: admission to a graduate program. Study of organization theory, behavior, and interpersonal communications. (T)
- 706 Management and the Organization. Cr. 3**  
Prereq: completion of all foundation requirements. Examination of macro and micro aspects of organizational management; contingency approaches to organizational design, problem solving and decision making, and management of individual, group, and intergroup behavior in organizations. (T)
- 762 Complex Organizations. Cr. 3**  
Prereq: MGT 706. 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)
- 763 Organizational Change and Development. Cr. 3**  
Prereq: MGT 706. 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)
- 764 Management of Human Resources. Cr. 3**  
Prereq: MGT 706. 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)
- 766 Entrepreneurial Management. Cr. 3**  
Prereq: MGT 706. 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)
- 768 Executive Decision Making. Cr. 3**  
Prereq: MGT 706. 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)
- 774 Business and Contemporary Society. Cr. 3**  
Prereq: completion of all foundation requirements. Role of the corporation in modern society. External social, political, legal, economic and technological influences on the business firm. Current issues: employment discrimination, pollution, energy, consumerism and the multinational corporation. Examination of ethical standards and values of business persons. (T)

- 775 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)
- 777 Union Contract Administration. Cr. 3**  
Prereq: MGT 775. Daily union-management relations. Grievance handling and arbitration. The causes of labor-management conflicts under a union contract. (Y)
- 789 Seminar in Business Policy. Cr. 3**  
Must be taken in final twelve credits of graduate program and after all other core courses. Integration of business and administrative concepts studied in earlier courses, enabling students to formulate and implement overall organizational strategy within the context of a dynamic and uncertain external environment. (T)
- 795 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)
- 799 Master's Essay Direction. Cr. 3**  
Prereq: consent of adviser. (T)
- 800 Seminar in Management. Cr. 3**  
Prereq: MGT 706. Selected topics in the management and organizational sciences. (I)
- 801 Management Seminar: Organizational Culture and Power. Cr. 3**  
Prereq: MGT 706 or consent of instructor. Current theory and research in organizational culture; power in the business organization. (Y)
- 899 Master's Thesis Research and Direction. Cr. 1-8(8 req.)**  
Prereq: consent of adviser. (T)

## MARKETING (MKT)

- 603 Marketing Principles and Policies. Cr. 2**  
Prereq: admission to a graduate program. The marketing system and environment, analyzing marketing opportunities, planning and administering marketing programs, international marketing. (T)
- 703 Marketing Strategy. Cr. 3**  
Prereq: completion of all foundation requirements. No credit for undergraduate majors in marketing. Principles and concepts of marketing management. Analysis of the marketing environment, problems and opportunities. Development of objectives, plans and strategies for the marketing function via the case method. (T)
- 733 Managerial Communication. Cr. 3**  
Prereq: intermediate level or above writing course and basic speech course; or consent of instructor. Open only to M.B.A. students. Material fee as indicated in *Schedule of Classes*. 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. (F,W)
- 742 Sales Management Problems. Cr. 3**  
Prereq: MKT 703. 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)

**743 Advertising Management. Cr. 3**

Prereq: MKT 703. 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)

**745 Business Research and Methodology. Cr. 3**

Prereq: MKT 703 and FBE 701. 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)

**746 International Business. Cr. 3**

Prereq: MKT 703, FBE 721. World trade, the international sociological, cultural, political, economic, monetary environment of international business. International funds, credits, payments, and exchange controls, balance of payments, international marketing and management strategy formulation. Multinational corporations and host country governments. Common market and public policy issues. (F,W)

**747 Consumer and Industrial Buying Behavior. Cr. 3**

Prereq: MKT 703. 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)

**750 International Marketing Strategy. Cr. 3**

Prereq: MKT 703. 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)

**762 Business Logistics Management. Cr. 3**

Prereq: MKT 703, FBE 701. 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)

**770 Management of Retail Enterprises. Cr. 3**

Prereq: MKT 703. 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)

**787 Seminar in Marketing. Cr. 3**

Prereq: MKT 703 and consent of instructor. In-depth exploration of new and important subjects or techniques in marketing. Topics vary by semester; consult instructor. (I)

**795 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)

**799 Master's Essay Direction. Cr. 3**

Prereq: consent of adviser. (T)

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

Prereq: consent of adviser. (T)







# **COLLEGE OF EDUCATION**

**INTERIM DEAN: Paula 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 1984 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
  - English Education
  - Foreign Language Education
  - Mathematics Education
  - Science Education
  - Social Studies Education
- Vocational Education — with concentrations in:
  - Business Education
  - Distributive Education
  - Family Life Education
  - Health Occupations Education
  - Industrial Education

### *MASTER OF ARTS with majors in*

- Counseling
- Recreation and Park Services
- School and Community Psychology
- Sports Administration
- Vocational Rehabilitation Counseling

### *MASTER OF EDUCATION with majors in*

- Adult and Continuing Education
- Art Education
- Bilingual-Bicultural Education
- Counseling
- Educational Leadership

- Educational Psychology
- Educational Sociology
- Elementary Education — with concentrations in:
  - Early Childhood Education
  - Language Arts and Reading
  - Children's Literature
  - Mathematics Education
  - Science 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 Education
- Instructional Technology
- Mathematics Education
- Physical Education
- Preschool and Parent Education
- Reading
- Science Education
- Social Studies Education
- Special Education — with concentrations in:
  - Emotionally Impaired
  - Gifted Child Education
  - Learning Disabilities
  - Mentally Impaired
- Vocational Education — with concentrations in:
  - Business Education
  - Distributive Education
  - Family Life Education
  - Industrial Education

### *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
  - 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
- Educational Sociology
- Elementary Curriculum and Instruction
- English Education—Secondary
- General Administration and Supervision
- Instructional Technology
- Mathematics Education
- Reading
- Science Education
- Secondary Curriculum and Instruction
- School and Community Psychology
- Social Studies Education: Secondary
- Special Education
- Vocational Education
- Vocational Rehabilitation Counseling

*DOCTOR OF EDUCATION and DOCTOR OF PHILOSOPHY  
with majors in*

Counseling  
Curriculum and Instruction — with concentrations in:  
Art Education  
Bilingual-Bicultural Education (Ed.D. only)  
Elementary Education  
English Education—Secondary  
Foreign Language Education—Secondary  
K-12 Curriculum  
Mathematics Education  
Preschool and Parent Education  
Science Education  
Secondary Education  
Social Studies Education—Secondary  
Educational Psychology  
Educational Sociology  
Evaluation and Research  
General Administration and Supervision  
Higher Education  
History and Philosophy of Education  
Instructional Technology  
Reading (Ed.D. only)  
Special Education  
Vocational Education



# 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 72-108.

## 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 83-99.

## 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 72-108); 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 14. 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 72-108.

**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 760
Educational Psychology .....	EDP 545, or 548, or 735
Educational Sociology .....	EDS 763
Evaluation and Research .....	EER 761
Counseling .....	CED 670
History and Philosophy of Education .....	EHP 760
Special Education .....	SED 705

**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 admission into the program.

## 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 86.

## Education Specialist Certificate

The Education Specialist certificate program is a thirty credit 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 72-108); 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 14. 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, 102 Administrative 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 Graduate Education 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 Graduate Education 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 Foundations. 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 14. 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 in the Administrative 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 Graduate Education 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 67 and 20–30, 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 other than education 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 999).

**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 Graduate Education 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 identified by the end of the first semester after formal 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 and must be elected outside of the course offerings of the College. 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 (pages 27-30) 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 32. 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. Contact the Office of the Dean, 441 Education. The application deadline is January 16.

**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

The full-time graduate student's program 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 Room 489, College of Education 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 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.

# ACADEMIC SERVICES

Office: 489 Education; 577-1605

Assistant Dean: James Boyer

Graduate Advising: Stuart Itzkowitz, Toni Nicholas

Undergraduate Advising: Felicia Grace, Mary Manion, Carol Meier, Michelle Teasley

## 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.

## COLLEGE OF EDUCATION DIRECTORY

### Interim Dean:

*Paula Wood* Room 441, Education Building; 577-1620

### Associate Dean, Curriculum:

*Joanne Holbert* Room 441, Education Building; 577-1620

### Associate Dean, Research:

*Steven Illmer* Room 441, Education Building; 577-1620

### Assistant Dean, Academic Services:

*James Boyer* Room 489, Education Building; 577-1605

### Assistant Dean, Administrative and Organizational Studies:

*Burnis Hall* Room 389, Education Building; 577-1701

### Assistant Dean, Teacher Education:

*Sharon Elliott* Room 241, Education Building; 577-0902

### Assistant Dean, Theoretical and Behavioral Foundations:

*Alan Hoffman* Room 341, Education Building; 577-1721

### Assistant Dean, Health, Physical Education and Recreation:

*Sarah Erbaugh* Room 261, Matthaehi Building; 577-6210

### Mailing address for all offices:

Wayne State University, 5425 Second Ave., Detroit, Michigan 48202

# ADMINISTRATIVE and ORGANIZATIONAL STUDIES

*Office:* 389 Education Building; 577-1701

*Assistant Dean:* Burnis Hall

### *Professors*

Thomas N. Bonner, John W. Childs, Roger A. DeMont, Joella H. Gipson-Simpson, Larry W. Hillman, Wendell M. Hough, Rita C. Richey, J. Edward Simpkins, Mark H. Smith, Jr., Ronald V. Urlick

### *Associate Professors*

Burnis Hall, Albert F. Stahl

## 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 education, and instructional technology*

*DOCTOR OF PHILOSOPHY with majors in general administration and supervision, higher education, 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.

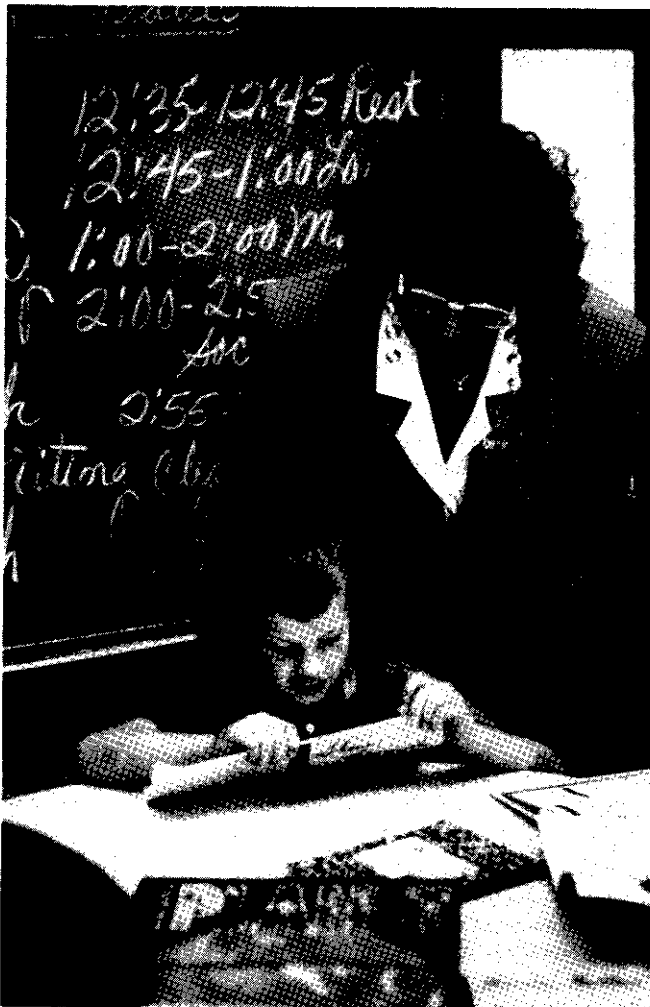
It is within the scope of this division to study emergent trends and educational innovations; to develop rationales for supporting educational change; and to present viable programs of study for advanced students in education which will enable them to function skillfully as educational leaders in facilitating 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, as well as certification programs approved by the Michigan State Board of Education.

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 67.

**DEGREE REQUIREMENTS:** General requirements for the Master of Education degree may be found on page 67. This major in educational leadership is offered only as *Plan B or C* options as defined on page 67; specific requirements are as follows:

The required thirty credits must include EDA 762, 766, 769, 865; ED 799, and one course selected from: EDA 763, 764, or 765.

EDA 760 is required as part of the six-credit general professional (core) area. The remaining four credits may be selected from the list of optional courses on page 68 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 for the major. The General Professional (Core) courses are selected from options on page 68 of this bulletin.

### Education Specialist Certificate with a major in General Administration and Supervision

**Admission:** see page 67.

**CERTIFICATE REQUIREMENTS:** A minimum of thirty credits is required for this certificate. Basic requirements are shown on page 67. 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 69.

**DEGREE REQUIREMENTS:** The general requirements for this degree are stated on page 69. Specific requirements are as follows:

Thirty of the thirty-six credits required in 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 960, EDP 931, EDS 962, and TED 913. Students must also complete eleven credits in research techniques including EER 763, an advanced course (three credits) in research methodology and experimental design, and five credits in research electives appropriate to their needs.

### 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 69 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 69; 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 960, EDP 931, EDS 962, and TED 913. A minimum of ten credits is required in a single subject field other than education to constitute the non-education cognate, and a minimum of fifteen credits is required in research course work.

## HIGHER EDUCATION

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 69. 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 69; 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 outside of the College of Education. The research requirements for the Ed.D. consist of EER 763, HED 859, and two courses selected from EER 764, 765, 864, or 866.

The research requirements for the Ph.D. consist of EER 763, 765, 864, 865, and HED 859.

## 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. Incorporated in these programs are the newest technologies enabling the graduate to function in the ever-changing roles of this profession, including: instructional developer, designer or researcher; media or learning resource consultant; media or learning resources consultant or manager, teacher, or curriculum specialist; and trainer, training manager, or consultant.

Students can achieve advanced skill in areas such as:

1. Instructional design;
2. Computer applications in education and training;
3. Instructional media design and production (including interactive video);
4. Instructional video design and development;
5. Evaluation and research.

### Master of Education with a major in Instructional Technology

**Admission:** see page 67.

**DEGREE REQUIREMENTS:** There are two program emphases at the master's level: 1) Business and Human Services, and 2) Educational Technology in the K-12 setting. Each emphasis requires a minimum of thirty-six credits. General requirements for the Master of Education may be found on page 67. This degree in instructional technology is

offered only as Plan B or C options as defined on page 67. Courses required in the major area include: IT 611, 710, 711, 715; and ED 799. Additional requirements depend upon the program emphasis and the student's area of specialization. Options for the required six credits in General Professional Core courses are shown on page 68.

## Educational Specialist Certificate with a major in Instructional Technology

**Admission:** see page 68.

**CERTIFICATE REQUIREMENTS:** A minimum of thirty-six credits is required for this certificate. Basic requirements are shown on page 68. The specific courses required to develop an area of concentration are selected in consultation with the assigned adviser and based upon the background and individual needs of the student. General emphases can be directed toward applications in either business and human services training or technology in the K-12 setting.

## Doctoral Degrees with a major in in Instructional Technology

**Admission:** see page 69. Admission to the Ph.D. and Ed.D. programs in instructional technology require completion of the Miller Analogies Test and the aptitude sections of the Graduate Record Examination.

**DEGREE REQUIREMENTS:** The general requirements for these degrees are stated on page 69. Course requirements in the major include IT 611, 710, 711, 715, 811, 815, and 911. A minimum of six credits is required in Foundations of Education (Doctoral Seminars). Two courses are to be selected from EHP 960, EDP 931, EDS 962, TED 913, and EDA 979.

The research courses required in this program are selected in consultation with the adviser.

## GRADUATE COURSES

*The following courses, numbered 500-999, are offered for graduate credit. Courses numbered 500-699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090-499). Courses in the following list numbered 500-699 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 463.*

### EDUCATION ADMINISTRATION (EDA)

#### 760 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)

#### 762 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. (F,W)

#### 763 Administration of Middle and Junior High School. Cr. 4

Modern trends and issues in the curriculum and administration of the junior high school and middle school. Problems of organization, instruction, guidance, orientation, and student activities related to young adolescents. (F)

#### 764 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. (F)

#### 765 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. (W)

#### 766 Administrative Leadership in School-Community Relations, Public Relations, and Adult Education. Cr. 4

Prereq: EDA 760. 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. (W)

#### 767 Economic Issues in Education. Cr. 3

Prereq: EDA 760. Economic issues in education at the local, intermediate, state, and federal levels. (W)

#### 769 Introduction to Michigan School Law and School Finance. Cr. 4

Prereq: professional experience. Constitutional, legal, and fiscal factors affecting Michigan public education. Required for administrator certification. (F)

#### 770 School Business Management. Cr. 3

Prereq: EDA 760. Analysis of business practices and procedures affecting the school administrator. (Y)

#### 772 Community Education Administration. Cr. 3

Prereq: EDA 760. Development, organization, administration and financing of community education. (F)

#### 780 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)

#### 781 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)

#### 782 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. (W)

#### 783 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. (F,W)

#### 818 Research Seminar. (HED 859). Cr. 2-6(Max. 8)

Prereq: admission to Ed.S. or doctoral program. Students develop research proposals, evaluate each other's research designs, and conduct any necessary pilot studies. (F)

- 860 Introductory Seminar in Administrative and Organizational Studies. Cr. 2**  
Prereq: admission to Ed.S. program. Self-appraisal in relationship to the administrative role; theories and practices in educational administration and supervision. (F,W)
- 861 Management Planning Techniques. Cr. 4**  
Selected management planning techniques emphasizing effective utilization of resources in education. (F)
- 862 School Personnel Administration. Cr. 4**  
Prereq: EDA 760. Analysis of the personnel function in educational administration. (S)
- 863 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)
- 864 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. (W)
- 865 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)
- 866 Seminar in Simulation of Secondary School Administration. Cr. 2-6**  
Prereq: teaching experience. Simulated experiences in the role of a secondary school principal; comparison of alternative responses to identical stimulus conditions; theory and practice of decision making; analysis of aspects of individual administrative style. (S)
- 867 Collective Negotiations. Cr. 4**  
Development of negotiation in education; features of applicable laws; strategy; analyses of existing contracts; composition of management negotiating team. (F)
- 868 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. (W)
- 870 Alternative Futures in School Administration. Cr. 4**  
Prereq: admission to Ed.S. or doctoral program. Systematic analysis of future studies with implications for school administration. Principles and methods in the field of futuristics for application in school administration. (W)
- 871 Readings in General Administration. (HED 851). Cr. 4**  
Prereq: EDA 760; admission to doctoral program. Directed readings in the principles underlying administration in education, government, business and social agencies and other major areas. (W)
- 888 Workshop in Administrative and Organizational Studies. Cr. 1-10(Max. 10)**  
Prereq: EDA 760. Offered for S and U grades only. Practicum in the study of current problems affecting administrative and organizational studies. (T)
- 890 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. (F,W)
- 960 Seminar in Research and Theory of Administration. Cr. 3**  
Prereq: EDA 762. 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. (F)

- 979 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)

- 850 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)
- 851 (EDA 871) Readings in General Administration. Cr. 4**  
Directed readings in the principles underlying administration in education, government, business, and social agencies and other major areas. (W)
- 853 Seminar in the History and Philosophy of Higher Education. (EHP 767)(HIS 811). 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)
- 854 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)
- 855 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)
- 856 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)
- 857 Contemporary Issues in Higher Education. Cr. 4**  
Prereq: HED 850, 853. Seminar for advanced doctoral students. Intensive exploration of major issues and problems confronting higher education. (W)
- 859 (EDA 818) Research Seminar. 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,W)

## INSTRUCTIONAL TECHNOLOGY (I T)

- 505 Technology Applications in Teaching. Cr. 3**  
Techniques for incorporating technology in teaching. Principles of instruction design, techniques of audio-visual aids and new technologies such as instructional video. Emphasis on the computer as a teaching tool. (Y)
- 510 Using Audiovisual Methods, Materials and Equipment. (L S 638). Cr. 2**  
Survey of educational media, methods, and materials. Principles of systematic instructional design applied to the design of group-based

and individualized instructional materials, operation of common audiovisual equipment, review of innovative instructional practices; computer applications and learning games. (Y)

**511 Educational Technology. (L S 636). Cr. 2**

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. (T)

**512 Instructional Materials Workshop. (L S 637). Cr. 1-3(Max. 3)**

Design and development of audiovisual materials for use in educational, industrial, and/or human services programs. Students produce an audiovisual presentation. (T)

**513 Computer-Programmed Multi-Screen/Multi-Image Presentations. (AED 520). Cr. 3(Max. 9)**

Material fee as indicated in *Schedule of Classes*. 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. (W)

**519 (AED 519) Light, Sound, Space, and Motion. Cr. 3**

Required for certification in Art Education. Material fee as indicated in *Schedule of Classes*. 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. (F)

**606 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. (W,S)

**611 Systems Techniques in Educational Planning and Management. Cr. 4**

Principles of general systems theory; their applications in instructional design and project program management. Emphasis on alternative systems models of design and specific planning techniques. Topics include: systems analysis and synthesis, flow charting, data management, budgeting systems, PERT charting. (T)

**615 (AED 615) Instructional Applications of Computer Graphics. Cr. 3**

Material fee as indicated in *Schedule of Classes*. 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. (T)

**706 Developing Instructional Video for Education and Training. Cr. 4**

Technique for developing video for instruction; program elements, graphics, small format video and applications of instructional design to video production. (F,S)

**710 Introductory Graduate Seminar in Instructional Technology. Cr. 2**

Prereq: admission to I T program. Introduction to the field of instructional technology: careers, job roles, organizations; introduction to instructional technology course content. Initial planning for students' programs. (T)

**711 Instructional Design. (L S 735)(H E 754). Cr. 4**

Prereq: I T 611. Principles of instructional design, task and job analysis, hierarchical sequencing, test item construction, and group

instructional strategies. Emphasis on design of total courses and self-instructional packages. (F,W)

**712 Strategies for Instructional and Organization Development. Cr. 4**

Various management and non-management strategies for initiating instructional development and/or organization development activities focused at individual or small to moderate scale system change. (W,S)

**714 Seminar in Computer-Assisted Instruction. (SPR 857). Cr. 4**

Design and use of computer-assisted instruction and training; development of interactive video instruction. (F,S)

**715 Educational Product Evaluation. (H E 755). Cr. 4**

Prereq: I T 711. 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)

**716 Computer Managed Instruction. Cr. 3**

Advanced course in instructional management; the role of the computer in instruction. Students design a computer-managed system of instruction for use in a given context. (W)

**810 Designing Educational Programs. Cr. 2**

Prereq: admission to doctoral program. Alternative processes for the design and implementation of educational programs: sources of funding, needs analysis, objectives development, curricular parameters, budget designation, and systems monitoring. Students create an educational program design. (F)

**811 Advanced Instructional Design. Cr. 4**

Prereq: I T 611, 711. Analysis and application of advanced instructional design research and practices; complex program design; trainer's manual construction, business and industrial applications, sophisticated self-instruction packages. (F)

**812 Practicum in Instructional Technology. Cr. 1-9(Max.9)**

Prereq: I T 711. 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)

**813 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)

**815 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)

**818 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)

**911 Advanced Research Seminar and Practicum. Cr. 3**

Prereq: 15 credits in instructional technology. Open only to doctoral students. Students develop a research proposal, critically evaluate each other's research proposals, and conduct pilot studies which will lead to more productive research in the field. (W)

**915 Educational Futures. Cr. 2**

Prereq: 15 credits in graduate education courses. Futures research designs and techniques; alternative futures models; the role of values structuring and decision-making in futures forecasting. Students develop a futures research study and extensively review futures literature. (F)

# HEALTH, PHYSICAL EDUCATION and RECREATION

Office: 261 Matthaei Building; 577-6210

Assistant Dean: Sarah J. Erbaugh

## Associate Professors

David B. Bliervernicht, Sarah J. Erbaugh, Frank McBride, Diane Pick

## Assistant Professors

Hermann Engels, Avanelle Kidwell, Robert Kohl, Karen Kurz-McPherson, Peter A. Roberts, Todd Seidler, William W. Sloan, John C. Wirth, Weimo Zhu

## Lecturers

Judy Bowen, Timothy Domke, Julie Gleason, Carol Mushett, Mary W. Paonessa

## Graduate Degrees

*MASTER OF EDUCATION with a major in Health Education and specializations in School Health Education, and Clinical/Community Health Education*

*MASTER OF EDUCATION with a major in Physical Education and specializations in Exercise and Sport Science, and Physical Education Pedagogy*

*MASTER OF ARTS IN RECREATION AND PARK SERVICES with specializations in Recreation Administration and Therapeutic Recreation*

*MASTER OF ARTS with a major in Sports Administration and specializations in Interscholastic Athletic Administration, Professional Sports Administration, Commercial Sports Administration, and Intercollegiate Athletic 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 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 or a teacher's certificate 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 Matthaei 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.

## Master of Education with a Major in Health Education

The degree Master of Education with a Major in Health Education is offered under two specializations: school health education and clinical/community health education. The school health education emphasis is primarily for teachers and others who have an interest in school health education programs. The curriculum prepares students for advanced teaching or administrative positions in such programs at the elementary or secondary level. *This program, however, does not lead to teaching certification.*

The clinical/community health education emphasis is for those who are interested in working in a health care setting and wish to use their knowledge and skills in hospitals, clinics, health maintenance organizations, preferred provider organizations or other health planning agencies. Graduate students learn to plan, implement, and evaluate health education programs and acquire practical experience through a required fieldwork placement.

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14. Applicants to the program must satisfy the following criteria:

1. Have a baccalaureate degree in education, health science, or a related field from an accredited institution.
2. A minimum honor point average (h.p.a.) of 3.0 is required for regular admission and 2.5 for qualified (conditional) admission.

*Graduate Record Examination* scores may be submitted but are not required.

**DEGREE REQUIREMENTS:** This Master of 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 essay or 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 20-30 and 67-71, respectively.

**General Professional Sequence:** This sequence is required of both specializations. Students must elect a minimum of six credits from the following foundation (core) courses including EER 763 and courses from at least two additional subject areas.

Core Courses	Credits
CEJ 670 — Role of the Teacher in Guidance .....	2
EDA 760 — Structure of American Education .....	2
EDP 545 — Child Psychology .....	2-3
EDP 548 — Adolescent Psychology .....	2-3
EDP 735 — The Learning Process .....	2-3
EDS 763 — Educational Sociology .....	2-3

EER 763 — Fundamentals of Statistics (required course)	3
EHP 760 — Philosophy of Education	2
SED 705 — Mainstreaming of Handicapped Students	2
Minimum: 6	

## — Clinical/Community Health Education

Specialization Courses	Credits
H E 635 — Health Education and the Nation's Health	3
H E 642 — Introduction to Health Education Program Design	3
H E 653 — Principles and Practice of Health Education and Health Promotion	3
HPR 654 — Workshop in HPR (approved topic)	3
HPR 750 — Research Methods	4
HPR 875 — Internship	3
HPR 799/899 — Master's Project, Essay, or Thesis	3-8
Minimum: 22	

**Electives:** Eight credits, including five from an approved list of courses (consult adviser).

## — School Health Education

Specialization Courses	Credits
H E 642 — Introduction to Health Education Program Design	3
H E 643 — School Health Curriculum	3
H E 650 — Comprehensive School Health Education	3
H E 655 — Teaching Methods and Techniques in Health Education	3
HPR 750 — Research Methods	4
HPR 799/899 — Master's Project, Essay, or Thesis	3-8
Minimum: 19	

**Electives:** Eleven credits, including seven from an approved list of courses (consult adviser).

## 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; for requirements, see page 14.

**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 essay or 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 20-30 and 67-71, respectively.

## — Physical Education Pedagogy

This program is designed to meet the needs of both the sport theorist and the school practitioner. One area of emphasis provides an opportunity for an in-depth study of the historical, social, psychological and philosophical aspects of the profession for those students desiring to conduct research or teach at the college or university level. The

second emphasis is designed to provide both a theoretical and practical background for the teacher, coach, or administrator of physical education and sports programs in schools at the elementary or secondary level.

**General Professional Sequence:** Students must elect a minimum of six credits from the following foundation (core) courses. Selections must include courses from three different subject areas. If the student is completing requirements for continuing certification, RDG 712 must be elected; if RDG 443 was completed at the undergraduate level the RDG requirement can be waived.

Core Courses	Credits
CED 670 — Role of the Teacher in Guidance	2
EDA 760 — Structure of American Education	2
EER 761 — Evaluation and Measurement	2-3
EDS 763 — Educational Sociology	2-3
EHP 760 — Philosophy of Education	2-3
EDP 545 — Child Psychology	2-3
EDP 548 — Adolescent Psychology	2-3
EDP 735 — The Learning Process	2-3
RDG 712 — Reading in the Content Areas	3
SED 705 — Mainstreaming of Handicapped Students	2
Minimum: 6	

Specialization Courses	Credits
HPR 750 — Research Methods	4
P E 751 — History and Philosophy of Physical Education	3
P E 752 — Alternative Styles of Teaching in Physical Education	3
P E 755 — Designing Physical Education and Fitness Programs	3
P E 854 — Theories of Motor Development	3
HPR 799/899 — Master's Project, Essay, or Thesis	3-8
Minimum: 19	

**Electives:** Nine credits, including six from an approved list of courses (consult adviser).

## — Exercise and Sport Science

This specialization offers opportunity to study the biomechanical, physiological and psychological aspects of human physical performance. In addition to satisfying the requirements for a permanent teaching certificate, this specialization may be used to prepare students for careers in such areas as cardiac rehabilitation, exercise physiology, physical fitness leadership, and motor control.

**DEGREE REQUIREMENTS:** This specialization is offered only as a Plan A option (see page 67); thirty-four credits are required, including eight credits for the master's thesis. Students selecting this program will concentrate in one of three areas: biomechanics, exercise physiology, or motor control.

Specialization Courses	Credits
HPR 750 — Research Methods	4
HPR 899 — Master's Thesis	8
P E 632 — Fitness Leadership	3
P E 758 — Biomechanics	3
P E 853 — Motor Learning	3
Minimum: 21	

## General Professional Courses

EER 763 — Fundamentals of Statistics	3
EER 864 — Variance and Covariance Analysis	3
Minimum: 6	

**Electives:** A minimum of seven credits from an approved list of courses is required (consult adviser).

## 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. By exercise of the large amount of elective credit in this program students may custom-design their curriculum to suit individual educational and employment objectives.

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14. Several factors are considered in admission to the sports administration program. These include: undergraduate cumulative honor point average, previous experience, statement of professional interest, and recommendations or personal interview when necessary. Graduate Record Examination scores may be submitted but are *not* required. Students entering the program with an undergraduate degree from such disciplines as physical education, business administration, journalism, marketing, economics, or other relevant majors will be considered.

**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 specialization 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 20–30 and 67–71, respectively.

Specialization Courses	Credits
HPR 750—Research Methods .....	4
P E 641—Introduction to Sports Administration .....	3
P E 875—Internship in Sports Administration .....	4
	Minimum: 11

**Electives:** A minimum of twenty-three credits from an approved list of courses (consult adviser).

## Endorsement in Teaching Physical Education for the Handicapped

A program leading to state endorsement in the teaching of physical education for the handicapped is available to physical education and special education majors. 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; for requirements, see page 14. Additionally, applicants must possess a valid Michigan teaching certificate in physical education or any area of special education.

### ENDORSEMENT REQUIREMENTS

	Credits
P E 540—Intro. to Phys. Ed. for Exceptional Children .....	3
P E 541—Physical Education for the Exceptional Student: Methods & Materials .....	3
P E 542—Sports and Recreation for Exceptional Children .....	3
P E 543—Practicum in Physical Education for the Exceptional Student .....	2-6
SED 503—Education of Exceptional Children .....	3
SED 511—Mental Retardation and the Cognitive Process .....	3
SED 526—Home & Hospital Education of Children with Physical Impairments .....	4
SED 560—Introduction to Ed. of Hearing- and Visually-Impaired Children .....	3
	Total: 24-28

## Post-Baccalaureate Certificate in Health and Fitness Program Management

**Admission** to this program is contingent upon admission to the Graduate School, for requirements, see page 14. The program is open only to students who have completed a bachelor's degree with a minimal h.p.a. of 2.6 from an accredited institution. (Conditional admission may be granted to students with a 2.25 h.p.a.) Applications to the program should be made to the Assistant Dean, 267 Matthaei Building.

**CERTIFICATE REQUIREMENTS:** This certificate requires a minimum of twenty-four credits of post-baccalaureate study with a minimal h.p.a. of 2.5 to be completed within three years after initial program registration. A *Plan of Work* must be developed, approved by the adviser and filed with the Education Graduate Office, 489 Education Building, before completion of the initial six credits.

## Master of Arts in Recreation and Park Services

The Master of Arts offered in this program area is a non-teaching degree program. Majors are prepared 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. Twice yearly, professional development seminars are offered to students and professionals in the area.

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14. 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 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 Service Core courses cited below, electives in the student's area of interest, and six to ten 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 20–30 and 67–71, 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 750—Research Methods .....	4
R P 761—Foundations of Recreation and Leisure Services .....	3
R P 768 or R P 764	
—Resources Development and Management .....	3
—Administration of Therapeutic Recreation Programs .....	3
HPR 799/899—Master's Essay, Project, or Thesis .....	3-8

Minimum: 13

## Specialist Certificate in Aging

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. Specific requirements for this certificate are determined by the Institute of Gerontology and may be found on page 39. Students interested in this option are encouraged to contact a Recreation and Park Services adviser at 577-6212 or 577-6213.

## GRADUATE COURSES

The following courses, numbered 500-999, are offered for graduate credit. Courses numbered 500-699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090-499). Courses in the following list numbered 500-699 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 463

## DRIVER EDUCATION (D E)

- 573 Teaching Driver Education and Traffic Safety. (TED 594). Cr. 3**  
Prereq: valid Michigan driver's license. (F,W)
- 574 Problems In Driver Education and Traffic Safety. (TED 574). Cr. 3**  
Prereq: D E 573. Issues and concerns in professional preparation to meet traffic safety needs of schools and communities. (F,S)
- 575 Seminar In Driver Education and Traffic Safety. (TED 575). Cr. 3**  
Prereq: D E 574. Behavioral, administrative, and professional aspects of the teaching role in driver and traffic safety education. (W,S)

## HEALTH (HEA)

- 533 (P E 533) Principles of Athletic Training. Cr. 3**  
Prereq: ANA 301 or equiv. Philosophy of athletic training and basic training room protocol. Theory of evaluation techniques, nutrition, emergency techniques. (B)
- 534 (P E 534) Prevention, Care and Evaluation of Athletic Injuries. Cr. 3**  
Prereq: ANA 301 or equiv. Material fee as indicated in *Schedule of Classes*. 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. (W)

## HEALTH EDUCATION (H E)

- 564 Health of the Pre-School Child. Cr. 3**  
Conditions and practices which protect and promote healthy growth in the young child; environmental sanitation, preventive health practices, care in case of illness or injury, meeting emotional health needs, and early sex education. (I)
- 635 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. (B)
- 642 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. (B)
- 643 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)
- 650 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)
- 653 Clinical/Community Health Education Program Development. Cr. 3**  
Prereq: graduate standing. 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)
- 655 Teaching Methods in Health Education. Cr. 3**  
Prereq: H E 650 or consent of instructor. Strategies employed in dissemination of health information; concepts and skills development. Integration of cognitive skills, classroom management, and student assistance programs, into teaching strategies. (B)
- 754 (I T 711) Instructional Design. (L S 735). Cr. 4**  
Prereq: I T 611. Principles of instructional design, task and job analysis, hierarchical sequencing, test item construction, and group instructional strategies. Emphasis on design of total courses and self-instructional packages. (I)
- 755 (I T 715) Educational Product Evaluation. Cr. 4**  
Prereq: EER 763 and I T 711 or consent of instructor. 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. (I)

## HEALTH, PHYSICAL EDUCATION and RECREATION (HPR)

- 574 Facility Planning, Construction and Utilization. Cr. 3**  
Fundamentals of planning and design emphasizing leisure facilities in the urban setting; elementary studio design projects and field inspections. (B)
- 654 Workshop in Health, Physical Education, and Athletics. Cr. 1-3(Max. 6)**  
Teachers, school administrators and consultants working cooperatively on current problems in physical education and athletics. (S)



**655 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. (Y)

**664 Legal Issues and Risk Management in HPR. Cr. 3**  
Identification and analysis of legal issues and risk management in the health, physical education, and recreation professions. Review of relevant litigation patterns. (B)

**665 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. (I)

**750 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)

**753 Computer Applications in HPR. Cr. 3**  
Use of microcomputers in physical education: word processing, database management; specific applications such as fitness testing, game statistics. (Y)

**754 Concepts of Supervision and Management in HPR. 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. Budget planning and fiscal management. (B)

**756 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. (Y)

**758 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. (Y)

**790 Special Problems in HPR. Cr. 1-3(Max. 6)**  
Prereq: written consent of adviser and graduate officer. (F,W)

**799 Master's Essay and Project Direction. Cr. 3**  
Prereq: consent of adviser. Development and review of essay or project. (F,W)

**841 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. (S)

**875 Internship in HPR. Cr. 1-4(Max. 4)**  
Professional experience in public or private institutions relevant to student's field of specialization. Initial plan of involvement and final evaluation. (T)

**899 Master's Thesis Direction. Cr. 1-8(8 req.)**  
Prereq: consent of adviser. (F,W)

## PHYSICAL EDUCATION (P E)

**533 Principles of Athletic Training. (HEA 533). Cr. 3**  
Prereq: ANA 301 or equiv. Philosophy of athletic training and basic training room protocol. Theory of evaluation techniques, nutrition, emergency techniques. (F)

**534 Prevention, Care and Evaluation of Athletic Injuries. (HEA 534). Cr. 3**  
Prereq: ANA 301 or equiv. Material fee as indicated in *Schedule of Classes*. 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 (W)

**540 Introduction to Physical Education for Exceptional Children and Adolescents. Cr. 3**  
Prereq: EDP 331 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. (B)

**541 Physical Education for the Exceptional Student: Methods and Materials. Cr. 3**  
Prereq: EDP 331 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. (B)

**542 Sports and Recreation for Exceptional Children and Adolescents. Cr. 3**  
Prereq: EDP 331 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. (B)

**543 Practicum in Physical Education for the Exceptional Student. Cr. 2-6**  
Prereq: P E 540, 541, 542, 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. (T)

**550 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. (F)

**551 Principles of Coaching. Cr. 3**  
Prereq: P E 355. Specific topics on the coach and the athlete in areas of administration, motor learning, physical growth, motor skill acquisition, philosophy, psychology and sociology. (B)

**631 (PSL 601) Physiology of Exercise. 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)

**641 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. (W)

**751 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. (B)

**752 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. (Y)

**755 Designing Physical Education and Fitness Programs. 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. (B)

**757 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. (B)

**758 Biomechanical Analysis of Motor Activity. Cr. 3**  
Prereq: basic course in kinesiology. Material fee as indicated in *Schedule of Classes*. 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. (B)

**853 Motor Learning. Cr. 3**  
Prereq: P E 750. 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)

**854 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. (Y)

**856 Exercise Physiology. Cr. 3**  
Material fee as indicated in *Schedule of Classes*. 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. (B)

**858 Seminar in Professional Literature. Cr. 2-4(Max. 4)**  
Examination of the literature on specific topics within the physical education profession. (S)

## RECREATION AND PARK SERVICES (R P)

**562 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. (T)

**563 TR: Program Development. Cr. 3**  
Prereq: R P 367 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)

**565 Recreation Services for the Aging. Cr. 3**  
Programming for the aged and the aging in a variety of leisure settings; communication of program availability and stimulation of participation. (B;W,S)

**566 Independent Study. Cr. 1-2(Max. 6)**  
Supervised research, applied or action, in the student's area of concentration or interest. (F,W)

**576 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)

**578 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)

**660 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)

**663 TR: Program Implementation. Cr. 3**  
Prereq: R P 367 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)

**667 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)

**673 TR: Physical Disabilities. Cr. 3**  
Prereq: R P 367 or equivalent experience. 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)

**678 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)

**761 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. One hour arranged. (B)

**764 Administration of Therapeutic Recreation Programs. Cr. 3**  
Prereq: R P 563 and 663 or consent of instructor. 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)

**768 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*

Donald J. Bissett, Asa J. Brown, Janice Hale, Leonard Kaplan, Peter L. Sanders, Gary R. Smith, Samuel B. Stone

## *Associate Professors*

Rudi Alec, Fred G. Attebury, Daniel E. Behner, Navaz Bhavnagri, James Boyer, John S. Camp, Sharon W. Elliott, Karen Feathers, Stella S. F. Liu, David H. Makinson, Rodolfo Martinez, John T. Nonman, Jr., Arthur R. Park, Beverly N. Parke, Richard M. Parres, Virginia L. Pearson, James H. Quina, R. Craig Roney, Joseph Sales, Sr., Jacqueline Tilles, Paula Wood, Anga Youssef

## *Assistant Professors*

James H. Blake, Loretta B. Jones, Manuel Mazon, Jo-Ann Snyder, Marshall Zumberg

## 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  
Science Education

Secondary Education—with concentrations in:

Bilingual-Bicultural Education  
English Education  
Foreign Language Education  
Mathematics Education  
Science Education  
Social Studies Education

Vocational Education—with concentrations in:

Business Education  
Distributive Education  
Family Life Education  
Health Occupations Education  
Industrial Education

### *MASTER OF EDUCATION*

*with majors in*

Adult and Continuing Education

Art Education

Bilingual-Bicultural Education

Elementary Education—with concentrations in:

Children's Literature  
Early Childhood Education  
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

Preschool and Parent Education

Reading

Science Education

Social Studies Education: Secondary

Special Education—with concentrations in

Emotionally Impaired

Learning Disabilities  
Mentally Impaired Transition  
Vocational Education — with concentrations in:  
Business Education  
Distributive Education  
Family Life Education  
Industrial Education

### *EDUCATION SPECIALIST CERTIFICATE*

*with majors in:*

Elementary Curriculum and Instruction  
English Education: Secondary  
Mathematics Education  
Reading  
Science Education  
Secondary Curriculum and Instruction  
Social Studies Education: Secondary  
Special Education  
Vocational 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)  
Early Elementary Education  
General Elementary Education  
English Education—Secondary  
Foreign Language Education—Secondary  
K-12 Curriculum  
Mathematics Education  
Preschool and Parent Education  
Science Education  
Secondary Education  
Social Studies Education: Secondary  
Reading (Ed.D. only)  
Special Education  
Vocational Education

### *POST-BACHELOR'S TEACHER CERTIFICATES*

*with majors and minors in:*

Elementary Education — with concentrations in:

Bilingual-Bicultural Education  
Early Elementary Education  
General Elementary Education  
Science Education

Secondary Education — with concentrations in:

Art Education  
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

## 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 85 of this bulletin.

**Admission** to the Master of Arts in Teaching is contingent upon admission to the Graduate School; for requirements, see page 14. 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 acceptable to 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.

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 67 and 20-30, respectively. Requirements for the Master of Arts in Teaching degree must be completed within six years after admission to the program.

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:

	<i>credits</i>
EDP 621 —Foundations of Educational Psychology .....	3
EHP 760 —Philosophy of Education .....	2
TED 515 or TED 516	
— Analysis of Elementary School Teaching .....	3-6
— Analysis of Secondary School Teaching .....	3

**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 or internship) are an integral part of all M.A.T. programs, for which students register in TED 515 or 565, TED 578; bilingual-bicultural or early childhood students must complete an additional field experience: BBE 660 or TED 579. Information on the student teaching phase of the program is presented on page 86 of this bulletin.

## Elementary Education Major

**Major Requirements:** Courses which must be completed prior to student teaching are EDP 621; TED 515; RDG 712; ELE 629, 631, 639, 650, 660, and 722 or 724. Courses required for the M.A.T. degree following completion of the certification phase of the program are BBE 500, EHP 760, SED 705, and ED 799. 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 621; TED 515; RDG 712; ELE 604, 631, 634, 639, 660, 722. In addition to student teaching, other courses required for the early childhood endorsement and the M.A.T. degree

are ELE 602, 607, 608, 702; EDP 545; BBE 500; SED 705; EHP 760; ED 799. 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 500, 502, 550, 553, 656, 660, 670, 685; TED 700; and LED 652.

Only two general professional core courses are required: TED 515, and EDP 545 as an alternate for EDP 621.

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 700; twelve credits of science education course work including ELE 650. 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 500, 502, 550, 553, 656, 660, 670, 685; RDG 712; TED 700; and ED 799. 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 548 as an alternate for EDP 621.

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 520, 612, 621, 631, 633; ED 799; RDG 712, plus elective courses chosen in consultation with an adviser.

**FOREIGN LANGUAGE EDUCATION:** Requirements for this major include TED 578, 700; LED 652, 653; RDG 712; ED 799 and specialty courses including the following: LED 658, 721 and ED 790.

The required general professional core courses should include: TED 516, EDP 621, and EHP 760.

The required cognate courses are chosen with the approval of the adviser.

**MATHEMATICS EDUCATION:** Requirements for this major include TED 700; ED 799; RDG 712; MAE 515; and three courses selected from: MAE 605, 805, 810, 815. Additional courses are selected in consultation with an adviser.

**SCIENCE EDUCATION:** Requirements for this major include TED 602, 700; ED 598, 799; SCE 506, 507; RDG 712; and CHM 674. Additional methods courses and electives are selected in consultation with an adviser.

**SOCIAL STUDIES EDUCATION:** Required courses in this major include SSE 671, 673, 778, 874; ED 790; ED 799; and RDG 712. Additional elective courses (a minimum of seven credits) are selected in consultation with an adviser.

**VOCATIONAL EDUCATION:** The vocational areas include business education, distributive education, family life education, health occupations education, and industrial education. Each area requires a minimum of forty-two credits in graduate course work excluding any deficiencies in major or minor requirements.

The following courses are required in each of the above-mentioned fields: V E 541, 693, 699, 783, 898; RDG 712; TED 602; and ED 799.

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 68) for secondary education, EDP 548 should be substituted for EDP 621.

The student teaching assignment (TED 578) 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 (may be a group major) and one minor. 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 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 an infant, toddler, preschool and kindergarten (pre-primary) endorsement for teachers holding an elementary or secondary certificate. Individuals must pass a state examination in early childhood education before receiving this endorsement. The endorsement is an eighteen credit program earned after the granting of the Provisional Certificate. The courses may be

part of an M.Ed., M.A.T., or Educational Specialist program. Students should consult an early childhood 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 and obtain written approval to be submitted with application forms.
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

#### Field Courses

TED 355 — Teaching: Theory and Practice .....	5
ELE 330 — Teaching Language Arts: Preprimary – 9 .....	3

#### Campus Courses (must be taken prior to TED 578)

RDG 443 — Teaching Reading in Subject Matter Areas .....	3
EDP 331 — Educational Psychology .....	3
ELE 340 — Teaching Mathematics: Preprimary – 9 .....	3

### PHASE II

#### Field Courses

TED 356 — Pre-Student Teaching Field Experience .....	3
ELE 332 — Teaching Reading .....	3

#### Campus Courses

(must be taken after TED 355 and prior to TED 578)

ELE 350 — Teaching Science: Preprimary – 9 .....	3
ELE 360 — Teaching Social Studies: Preprimary – 9 .....	3

### PHASE III

#### Field Course

TED 578 — Directed Teaching .....	10
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### PHASE OPTIONAL

#### Courses taken in any phase

ELE 320 — Literature for Children .....	3
SED 501 — The Exceptional Child in the Regular Classroom .....	2
BBE 500 — Multicultural Education in Urban America .....	2
TED 602 — Computer Applications in Teaching I .....	3

## SECONDARY EDUCATION SEQUENCE (forty 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, 489 Education Building.

### PHASE I

TED 516 — Analysis of Secondary Teaching .....	3
Methods (first course) .....	3
EDP 331 — Educational Psychology .....	3

### PHASE II

RDG 443 — Teaching Reading in Subject Matter Areas .....	3
Methods (second course) .....	3
Field Course	
TED 565 — Pre-Student Teaching .....	5

### PHASE I OR II

#### Courses to taken PRIOR to Phase III

BBE 500 — Multicultural Education in Urban America .....	2
EHP 360 — Introduction to the Philosophy of Education .....	3
SED 501 — The Exceptional Child in the Regular Classroom .....	2
TED 602 — Computer Applications in Teaching I .....	3

### PHASE III

TED 578 — Directed Teaching and Conferences .....	10
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## Master Of Education

Generic admission and degree requirements for the Master of Education degrees offered by this department are presented on page 67. 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 Education

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. 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 67.

**DEGREE REQUIREMENTS:** see page 67. This program is offered under Plans B or C (as defined on page 67).

**Major Requirements:** A minimum of thirty credits is required in this program. Course requirements include ACE 710, 711, 712, and ED 799. 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 67. 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 67. This program requires thirty credits in course work: eight credits in art education research (TED 700, ED 799, and AED 740); six credits in professional education courses; and sixteen credits in electives. Fifteen 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.

**DEGREE REQUIREMENTS:** see page 67. This program is offered as a master's Plan B or Plan C, as defined on page 67. A minimum of forty-five credits is required for this concentration: twenty-seven credits in art education and art therapy; six credits in the general professional sequence; three research credits and three credits in educational psychology. The remaining six credits are approved electives in an area of 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: 577-1820.

### — 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 67. Students entering this program must be proficient in both English and the cognate language of their individual program.

**DEGREE REQUIREMENTS:** see page 67. The Master of Education in this area is offered under Plans B or C, as defined on page 67. A minimum of thirty-three credits is required including TED 700 and ED 799. 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 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 67.

**DEGREE REQUIREMENTS:** see page 67. The Master of Education in this area is offered under Plan A, B, or C, as defined on page 67. All M.Ed. students in elementary education must demonstrate proficiency in curriculum development by completing successfully one of the following: ELE 610, 726, or 780.

### — 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 67. Admission to this program requires a teaching certificate and at least twenty-one credits in English.

**DEGREE REQUIREMENTS:** see page 67. The Master of Education is offered in this area under Plans A, B, or C, as defined on page 67. 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 seven 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 700; ED 790 and 799; LED 658 and 722; general professional courses include EDS 765, CED 670, and EDP 548. Additional courses in the language major are chosen with the approval of the adviser.

### — with a Major in Mathematics Education

The Master of Education in this area may be completed in programs with orientations suitable to teachers certified for elementary or secondary teaching. The programs differ in their mathematics and mathematics education requirements.

**Admission Requirements:** see page 67.

**DEGREE REQUIREMENTS:** see page 67. This degree is offered under Plans B or C (as defined on page 67), and requires a minimum of thirty credits.

**Elementary Education:** Elementary school teachers may choose a general mathematics program that relates to the teaching of mathematics from grades K-8 or may elect to specialize in an area of interest including elementary or middle school mathematics or computer applications in mathematics education. Applicants with elementary certificates must complete the following required courses: TED 700 and ED 799; nine to twelve credits in the major field, selected in consultation with an adviser; six credits in general professional courses (see page 68); and six to twelve credits in electives in mathematics or mathematics education.

**Secondary Education:** The secondary 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 700 and ED 799; twelve to fifteen credits in the major field,



selected in consultation with an adviser; six credits in general professional courses (see page 68); and six to nine credits in mathematics or mathematics education.

### — with a Major in Preschool and Parent 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 a field experience in a preprimary setting is required. Students without student teaching or on-the-job teaching at the preschool level are assigned to the Wayne State University Nursery School for a field placement as part of the program.

**Admission Requirements:** see page 67.

**DEGREE REQUIREMENTS:** see page 67. This degree is offered under Plans A, B, or C (as defined on page 67), and requires a minimum of thirty credits. Required courses include: TED 700 and ED 799; ELE 602; twelve credits in the major field, selected in consultation with an adviser; six credits in general professional courses (see page 68); 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. 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 67.

**DEGREE REQUIREMENTS:** see page 67. This degree is offered under Plan A, B, or C (as defined on page 67), requiring a minimum of thirty-three credits of course work distributed as follows: RDG 712, 713, 714, 753, 754, 862; and ED 799; six credits in general professional courses (see page 68); and six elective credits selected from: ELE 631, 722 or 724.

### — 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.

**Admission Requirements:** see page 67.

**DEGREE REQUIREMENTS:** see page 67. This degree is offered under Plans A, B, or C (as defined on page 67), requiring a minimum of thirty credits. Required courses include: TED 700 and ED 799; six credits in general professional courses (see page 68); a minimum of

ten credits in science education courses selected in consultation with an adviser; and additional elective credits in a graduate science 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 67.

**DEGREE REQUIREMENTS:** see page 67. This degree is offered under Plans A, B, or C (as defined on page 67), requiring a minimum of thirty credits. Required courses include: SSE 673, 778, 874, and ED 799; six credits in general professional courses (see page 68); 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 are:

Emotionally Impaired ..... Asa Brown, Paula Wood  
Learning Disabilities . Asa Brown, Richard Parres, Virginia Pearson  
Mentally Impaired ..... Virginia Pearson, Marshall Zumberg

**Admission Requirements:** see page 67.

**DEGREE REQUIREMENTS:** General degree requirements for Master of Education programs are presented on page 67. This degree program in special education is offered under Plans A, B, or C, as defined on page 67. 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 777, 784, and 870. The general course requirements are EDP 548, EER 761, and CED 670. Electives are selected with the adviser.

**Emotionally Impaired:** A minimum of forty-seven credits is required for this concentration including SED 776, 777, 782, 783, 784, and ED 799. The general professional course requirements are CED 670, EER 761, and EDP 545 or 548. Electives should include EDP 749.

**Learning Disabled:** A minimum of thirty-five credits is required for this concentration including SED 776, 777, 779, 782, 783 or 784; and ED 799. The general professional course requirements are CED 670; EER 761; and EDP 545 or 548. EDP 753 is required as part of the elective credit allowance for this degree.

## — with a Major in Vocational Education

This program is designed for students with a secondary teaching certificate in a vocational 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 vocational 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 vocational endorsement.

**Admission Requirements:** see page 67.

**DEGREE REQUIREMENTS:** see page 67. The program consists of a minimum of thirty credits. Required courses include: V E 699, 782, 783, 898; and ED 799; 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 vocational education programs may be obtained from the Teacher Education area on the second floor of the College of Education Building.

## 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 68.

**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.

## Doctor of Education (Ed.D.) and Doctor of Philosophy (Ph.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 multi-racial and multi-cultural nature of the metropolitan society; and (3) the importance of the integration of theory, research, and practice as the basis for sound professional development.

90 *College of Education*

**Admission Requirements:** see page 69.

**DEGREE REQUIREMENTS:** see page 69. 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 613, 813, 827, 828, 913; I T 611; EDA 865; and ACE 711.

## GRADUATE COURSES

*The following courses, numbered 500-999, are offered for graduate credit. Courses numbered 500-699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090-499). Courses in the following list numbered 500-699 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 463.*

### TEACHER EDUCATION DIVISION (TED)

#### 515 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)

#### 516 Analysis of Secondary School Teaching. Cr. 3

Overview of structure and purposes of American education. Analysis of instructional objectives. Analysis of classroom communication, both verbal and non verbal, in relation to secondary school teaching. (T)

#### 529 Directed Teaching for In-Service Teachers. Cr. 3-10

Offered for S and U grades only. Student teaching under supervision of appropriate school and Directed Teaching Office personnel. (T)

#### 546 (DNC 546) Music and Dance in the Music Class II. (MED 558). Cr. 1-2

Prereq: TED 544. Continuation of TED 544; added experience using the Orff instrumentation for accompaniment. (S)

#### 565 Pre-Student Teaching Field Experience for Secondary Majors. Cr. 3-5

Prereq: TED 516 or equiv.; admission to secondary certification program. Field experience in secondary school settings prior to full-time student teaching. (F,W)

#### 574 (D E 574) Problems in Driver Education and Traffic Safety. Cr. 3

Prereq: TED 594. Issues and concerns in professional preparation to meet traffic safety needs of schools and communities. (F,S)

#### 575 (D E 575) Seminar in Driver Education and Traffic Safety. Cr. 3

Prereq: TED 574. Behavioral, administrative, and professional aspects of the teaching role in driver and traffic safety education. (W,S)

#### 578 Directed Teaching and Conference. Cr. 1-10

Prereq: admission to student teaching. 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)

#### 579 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)

**581 (DNC 581) Creative Dance for Children. (DNE 581). 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)

**582 (DNC 582) Creative Movement for the Pre-School Child I. Cr. 3**

Creative dance activities; manipulative, musical, imaginative and kinesthetic approaches to movement. (F,W)

**594 (D E 573) 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)

**602 Computer Applications in Teaching I. Cr. 3**

Advanced programming in BASIC and other languages appropriate for instruction; computers and teaching; problem-solving, modeling, data-analysis and testing; development of computer-based instructional materials and evaluation of existing materials. (T)

**603 Computer Applications in Teaching II. Cr. 3**

Prereq: TED 602 or equiv. Development and evaluation of computer-based instructional systems for use with pupils in their schools. (F,W)

**613 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)

**614 Local School Curriculum Planning. Cr. 1-6(Max. 12)**

Prereq: teaching experience. For classroom teachers and teacher educators. Consideration of local problems in elementary and secondary school programs. Planning for better teaching and learning. (I)

**700 Introductory Master's Seminar. Cr. 2-3**

Prereq: admission to a master's degree program in Teacher Education Division. (F,W)

**701 Field Study in Computer Applications in Teaching. Cr. 2-12(Max. 12)**

Prereq: TED 602 or equiv.; access to computer facilities. Supervised professional study in field settings; development, implementation and evaluation of computer-based instructional materials. (I)

**813 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)

**817 Advanced Seminar. Cr. 2-6 (Max. 6)**

Prereq: admission to education specialist or doctoral program. Topics to be announced in *Schedule of Classes*. (I)

**827 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)

**828 Research Seminar: Curriculum and Instruction I. Cr. 3**

Prereq: EER 763, EER 764. Methods of research in curriculum and instruction. Critical review of types of research in curriculum and instruction. Research design. (W)

**913 Doctoral Seminar in Curriculum and Instruction. Cr. 3**

Prereq: formal admission to a doctoral program in education. Open only to doctoral majors in other areas of concentration. 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)

**710 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)

**711 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)

**712 Adult and Continuing Education Methods. Cr. 3**

Prereq: graduate standing. 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)

**501 Art Teaching Laboratory. Cr. 5**

Prereq: consent of instructor. Material fee as indicated in *Schedule of Classes*. 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. (F)

**510 Art for Special Groups. Cr. 1-3(Max. 9)**

Material fee as indicated in *Schedule of Classes*. Art experiences designed for the specific needs of special groups. Topics to be announced in *Schedule of Classes*. (I)

**512 Art for Special Education. Cr. 2-4**

Material fee as indicated in *Schedule of Classes*. Students will experience a wide variety of two- and three-dimensional art forms selected and designed specifically for use with exceptional children and adults as a way to produce self-esteem, encourage learning and provide therapeutic value. (Y)

**513 Visual Communication. Cr. 3(Max. 9)**

Material fee as indicated in *Schedule of Classes*. Basic design, lettering, layout, aesthetic evaluation, organization, content selection, and communication skills are explored, as well as use of appropriate techniques, tools, materials and equipment. Students create a variety of two- and three-dimensional visual-verbal communications. (W)

**515 Computer Graphics in the School Art Room. Cr. 3**

Instruction and laboratory experiences in the production of computer graphics, primarily using the Appelle 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)

**516 Theory and Practice in Art Education. Cr. 3 (Max. 9)**

Prereq: AED 501; prereq. or coreq: student teaching. Required for certification in art education. 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)

**517 Methods and Materials: Fibers. Cr. 3(Max. 9)**

Material fee as indicated in *Schedule of Classes*. Comprehensive exploration of fiber-fabric art forms: applique, trapunto, 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. (F)

**519 Light, Sound, Space and Motion. (I T 519). Cr. 3(Max. 9)**

Required for certification in Art Education. Material fee as indicated in *Schedule of Classes*. 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. (W)

**520 (I T 513) Computer-Programmed Multi-screen/Multi-image Presentations. Cr. 3(Max. 9)**

Material fee as indicated in *Schedule of Classes*. 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. (W)

**522 Methods and Materials: Painting. Cr. 3(Max. 9)**

Material fee as indicated in *Schedule of Classes*. 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. (F)

**523 Ceramics Education I. Cr. 3**

Required for certification in Art Education. Material fee as indicated in *Schedule of Classes*. 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. (Y)

**526 Methods and Materials: Wood, Metal and Plastic. Cr. 2-3(Max. 9)**

Material fee as indicated in *Schedule of Classes*. 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. (W,S)

**528 Methods and Materials: Printmaking. Cr. 3(Max. 9)**

Prereq: one college-level drawing class. Material fee as indicated in *Schedule of Classes*. 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. (W)

**530 Survey of Art Therapy. Cr. 3**

Slide lectures, readings, and studio experience in and related to art therapy. (Y)

**615 Instructional Applications of Computer Graphics. (I T 615). Cr. 3**

Material fee as indicated in *Schedule of Classes*. 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. (T)

**622 Drawing and Watercolor - Field Studies. Cr. 3(Max. 9)**

Material fee as indicated in *Schedule of Classes*. 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. (S)

**623 Ceramics Education II. Cr. 3 (Max. 9)**

Prereq: AED 523. Material fee as indicated in *Schedule of Classes*. 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. (Y)

**625 Aspects of Ceramics. Cr. 3-9(Max. 9)**

Material fee as indicated in *Schedule of Classes*. Various aspects of ceramics chosen to develop the students' understanding of the potential for ceramic education. Topics to be announced in *Schedule of Classes*. (I)

**632 Introduction to Art Therapy. Cr. 3**

Prereq: admission to art therapy program. Slides, lectures, and studio experiences covering the definition, theory, goals and ethics of art therapy; the role and duties of the art therapist in various settings. (Y)

**634 Literature of Art Therapy. Cr. 3**

Prereq: AED 632; admission to art therapy program. Slide lectures, studio experiences and assigned reading in the literature of art therapy. (Y)

**636 Aspects of Art Therapy. Cr. 3-12**

Aspects of the use of art therapy chosen to develop students' breadth or depth in art therapy practice with various groups and settings. (Y)

**723 Advanced Ceramics Education. Cr. 3(Max. 9)**

Prereq: AED 623, 524. Material fee as indicated in *Schedule of Classes*. 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. (Y)

**732 Art Therapy with the Emotionally Impaired. Cr. 3**

Prereq: AED 632, A634; admission to art therapy program. 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. (Y)

**734 Art Therapy with Exceptional Children and Older Adults. Cr. 3**

Prereq: AED 632, 634; admission to art therapy program. Slides, lectures and studio experiences relating to the research, theory and practice of art therapy in public schools, and with older adults. The use of art therapy to develop self-concept and its role in human development. (Y)

**738 Art Therapy Laboratory. Cr. 4**

Prereq: TED 700, AED 632, AED 634, 636, 732, 734; enrollment in Art Therapy Program. 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)

**740 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)

**770 Advanced Graduate Problems. Cr. 3–12(Max. 12)**  
Prereq: prior experience as announced in *Schedule of Classes*.  
Material fee as indicated in *Schedule of Classes*. Pursuit of specific  
problems in depth. Laboratory hours coordinated with regularly  
scheduled classes in the selected area. (T)

**860 Curriculum Problems and Design. Cr. 1–3(Max. 9)**  
Art education as part of the total school curriculum. Purposes, content,  
development of meaningful sequences. (T)

## BILINGUAL/BICULTURAL EDUCATION (BBE)

**500 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)

**502 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)

**550 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)

**553 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)

**656 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)

**660 Internship in Bilingual/Bicultural Teaching. Cr. 2–12**  
Prereq: admission to bilingual internship. 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)

**670 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)

**685 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)

**901 Theoretical Implications of Bilingual/Bicultural  
Education. Cr. 3**  
Prereq: admission to doctoral program. Theoretical foundations for the  
development of bilingual/bicultural and multicultural education  
programs in our schools. (I)

**903 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)

**530 Business/Distributive Education Word Processing I:  
Typewriting. Cr. 3**  
Prereq: touch typewriting knowledge. 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)

**533 Business/Distributive Education Methods: General.  
Cr. 4**  
Prereq: TED 516, BDE 530; coreq: V E 541. Determination and  
development of needed minimum skills for beginning office  
occupations. Methods, materials and equipment for teaching selected  
office occupation subjects. Students demonstrate selected course  
objectives in a field setting. (I)

**537 Business/Distributive Education Word Processing III:  
Principles. Cr. 3**  
Prereq: BDE 535 or typewriting course. Principles and concepts in the  
design, utilization and evaluation of word processing systems in  
business, government, and education. Laboratory and field trips  
familiarize student with current equipment. (F)

**553 Business/Distributive Education Methods: Marketing  
and Distributive Education. Cr. 4**  
Prereq: TED 516, BDE 530; coreq: V E 541. Determination and  
development of needed minimum skills for beginning distributive  
occupations. Methods, materials, and equipment for teaching  
selected distributive occupation subjects. Students demonstrate  
selected course objectives in a field setting. (W)

**630 Business/Distributive Education Cooperative  
Internship. Cr. 1–6**  
Prereq: consent of instructor. Supervised work experience designed to  
correlate classroom theory with current word processing, secretarial,  
or selected distributive occupations. (I)

## ELEMENTARY EDUCATION (ELE)

**602 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)

**603 Observation and Assessment of Caregiver-Infant  
Interactions. Cr. 3**  
Prereq: one course in child growth and development, or consent of  
instructor. Developing skills in observing and recording infant's  
relationship with parent/caregivers; assessments of caregiver  
interactions; family-interaction and attachment theories related to  
practice of administering assessments. (Y)

**604 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)

**606 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)

**607 Parent Intervention Programs in Home and School. Cr. 3**

Program models, research, and relationship between school and parent intervention programs. (Y)

**608 Preprimary Goals and Practice. Cr. 2**

An examination of current programs and research in nursery school and kindergarten education. (F,W)

**609 Introduction to Infant Mental Health Theory and Practice. Cr. 1**

Prereq: PSY 240, PSY 243; EDP 331 or equiv. 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)

**610 Planning and Implementing Nursery School Curriculum. Cr. 2**

Prereq: teaching experience. Short and long term planning, staff and parent relationships, curriculum areas. (I)

**629 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)

**630 Language Arts Curriculum: Preprimary-9. Cr. 3**

Content of language arts programs. Objectives, procedures, materials, and organizational patterns. (T)

**631 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)

**632 Reading Curriculum: Preprimary-9. Cr. 3**

The reading process; procedure, materials and organizational patterns used when teaching reading. (T)

**634 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)

**636 Remedial Instruction in Reading and Related School Subjects. Cr. 3**

Prereq: teaching experience. Diagnosis, treatment, and prevention of learning difficulties in reading and related subjects. Emphasis on overcoming learning difficulties within the regular classroom. (Y)

**639 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)

**640 Mathematics Curriculum: Preprimary-9. Cr. 3**

Developing competence in school mathematics programs: objectives, procedures, materials, organizational patterns, evaluation. (T)

**650 Science Curriculum: Preprimary-9. Cr. 3**

Material fee as indicated in *Schedule of Classes*. 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. (T)

**660 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)

**702 Problems in Early Childhood Education. Cr. 3**

Prereq: ELE 602. Current innovations, controversies, and research in educational programs for young children in child care centers, kindergarten, and primary grades. (Y)

**722 Survey and Analysis of Literature for Younger Children. (L S 651). Cr. 3**

Intensive examination of books appropriate for preprimary and primary children. Analysis of the literary and extraliterary factors that affect the young child's experiences with fiction and non-fiction. (Y)

**724 Survey and Analysis of Literature for Older Children. (L S 652). 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)

**726 Functions of Literature in Early and Late Childhood. Cr. 3**

Prereq. or coreq: ELE 724. 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)

**728 Storytelling. (L S 655). Cr. 3**

Prereq: ELE 320 or 720 or 724. 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)

**740 Seminar in Mathematics Curriculum: Preprimary-8. Cr. 3**

Prereq: teaching experience and a methods course in mathematics. Role of mathematics in contemporary life and the school curriculum, organization of a valid elementary mathematics program, psychology of learning as applied to mathematics, classroom procedures, examination of new programs, development and instructional materials. (Y)

**780 Practicum in Curriculum Development. Cr. 1-5**

Identification of specific problems in curriculum development; proposals for solutions. (T)

**785 Current Developments in Elementary Education. Cr. 1-9**

Topics to be announced in *Schedule of Classes*. (I)

## ENGLISH EDUCATION (EED)

**520 Methods of Teaching English: Grades 7-12. Cr. 3**

Prereq: 18 credits in English beyond freshman composition; TED 516. Introduction to the purposes and methods of teaching English composition and literature in grades seven through twelve. (Y)

**601 Language and Reading Programs for Middle Schools. Cr. 3**

Analysis and development of instructional methods and programs for improving reading and language competence of early adolescents in middle schools. (Y)

**612 English Composition in Secondary Schools. Cr. 3**

Prereq: EED 520 or teaching experience. 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)

**621 Linguistics and Learning. Cr. 3**

Prereq: directed or regular teaching. Intensive review of current linguistic theory; introduction to psycholinguistics application for teaching grammar, usage, and composition; development of teaching materials. (S)

**631 Literature for Adolescents. (L S 653). Cr. 3**  
Prereq: directed or regular teaching. 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)

**633 Teaching Literature in Secondary Schools. Cr. 3**  
Prereq: EED 520 or teaching experience. 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)

**705 Current Developments in the Teaching of English. Cr. 2-8**  
Prereq: teaching experience. Application of modern theories in classroom settings. Advanced experimental teaching. (T)

## FAMILY LIFE EDUCATION (FLE)

**501 Methods of Teaching Health Occupations Education. Cr. 4**  
Prereq: TED 355; coreq: V E 541. Basic principles, methods of instruction, and organization of material in allied health occupations. Consideration given to practical application of the Michigan minimal objectives for health occupation education programs. (W)

**545 Teaching Consumer Home Economics and Family Living. Cr. 4**  
Prereq: TED 355; Coreq: V E 541 Open only to Family Life Education majors. Basic principles, methods of instruction and organization of material for teaching consumer home economics and family living according to the Vocational Education Act and suggested Michigan Vocational Plan. (W)

**547 Teaching Family Financial Management. Cr. 3**  
Prereq: S S 191, S S 192 or equiv. Economic, social and cultural conditions and needs relating to personal and family finance. Emphasis on financial planning by the consumer and its relevant supporting concepts. (F)

**641 Survey of Home Economics Related Occupational Courses. Cr. 3**  
Prereq: teaching experience. Experiences specifically related to teaching occupational training courses; exploration of various curricula patterns; identifying content and procedures; criterion referenced materials. (I)

## INDUSTRIAL EDUCATION (IED)

**677 Methods and Materials of Instruction II - Industrial Education. Cr. 4**  
Practice and techniques for teaching units in industrial education with group and individualized methods; locating, selecting, and using educational materials. Students demonstrate selected course objectives in a field setting. (W)

## LANGUAGE EDUCATION (LED)

**652 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)

**653 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)

**658 Culture as the Basis for Language Teaching. Cr. 2-4**  
Relevant cultural materials and teaching techniques as a vehicle for language teaching, whether in a bilingual/bicultural school setting, English as a second language classroom, or a foreign language program. (B)

**721 Special Problems in Language Education. Cr. 3**  
Prereq: consent of adviser. Current problems which inhibit foreign language teaching. Students identify particular problems and work individually or in groups to seek solutions. (Y)

**724 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)

**505 (MAT 516) Mathematics for Elementary School Teachers I. Cr. 3**  
No credit toward a major or minor for secondary mathematics teaching. Graduate credit for MAE 505 only; undergraduate credit for MAT 516 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)

**506 (MAT 517) Mathematics for Elementary School Teachers II. Cr. 3**  
No credit towards a major or minor for secondary mathematics teaching. Graduate credit for MAE 506 only; undergraduate credit for MAT 517 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)

**510 (MAT 518) Mathematics for Middle/Junior High School Teachers I. Cr. 3**  
Prereq: MAE 505 and 506 or consent of instructor. No credit toward a major or minor for secondary mathematics teaching. Graduate credit for MAE 510 only; undergraduate credit for MAT 518 only. Development of Euclidean geometry as a mathematical system; related historical topics; introduction to other geometries; selected topics such as transformations and tessellations. (F)

**511 (MAT 519) 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 511 only; undergraduate credit for MAT 519 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)

**515 Methods and Materials of Instruction - Secondary School Mathematics. Cr. 3**  
Prereq: admission to teacher education; 21 credits toward secondary mathematics major (incl. MAT 614) or consent of instructor. Graduate credit only in M.A.T. program. 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)

**605 Teaching Mathematics in the Middle School and the Junior High School. 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. (B)

**615 Creative Approaches in Mathematics Education.**  
**Cr. 2-6(Max. 12)**

Prereq: teaching experience. Current issues and trends; areas of neglected content; curriculum proposals; related research. Topics to be announced in *Schedule of Classes*. (I)

**805 Advanced Studies in Teaching Algebra. Cr. 3**

Prereq: mathematics major or minor and teaching experience. Fundamental concepts of algebra for a modern secondary school mathematics program; current trends and experimental programs; related research; methods and materials of instruction. (B)

**810 Advanced Studies in Teaching Geometry. Cr. 3**

Prereq: mathematics major or minor and teaching experience. 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)

**815 Teaching General Mathematics. Cr. 3**

Major ideas of junior and senior high school general mathematics; classroom management; methods and materials of instruction; techniques for motivating students; promising practices; related research. (B)

## READING EDUCATION (RDG)

**640 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)

**641 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)

**642 Practicum in Reading in the Content Areas. Cr. 1-4**

Prereq: RDG 443 or equiv.; consent of instructor. Identifying and solving field problems in reading in the content areas. (I)

**712 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)

**713 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)

**714 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)

**753 Diagnosis and Remediation in the Elementary School.**  
**Cr. 3**

Prereq: 3 graduate semester credits in reading courses. Material fee as indicated in *Schedule of Classes*. Use of informal inventories, criterion-referenced tests, norm-referenced tests in diagnosing reading difficulties. Use of diagnostic data to plan remedial reading instruction. (Y)

**754 Diagnosis and Remediation in Middle Schools and High Schools. Cr. 3**

Prereq: 3 graduate semester credits in reading courses. Material fee as indicated in *Schedule of Classes*. Use of informal inventories and surveys, observation, and norm-referenced and criterion-referenced tests to diagnose reading difficulties and plan remedial instruction in the middle school and high school. (Y)

**852 Practicum in Reading Diagnosis and Instruction. Cr. 4**

Prereq: RDG 751. Offered for S and U grades only. Material fee as indicated in *Schedule of Classes*. Practice in testing and teaching children, teenagers, adults with reading difficulties, and in reporting test results, interpretations, recommendations, and observations about progress. (B)

**862 Psychology, Linguistics, and Reading. Cr. 3**

Prereq: 6 graduate semester credits in reading courses. Motivation, perception, cognition, learning, language acquisition, dialect, and bilingualism as factors that affect pupil response to reading instruction. Implications for theory and research. (Y)

**870 Organizing for Reading Instruction. Cr. 3**

Prereq: two of the following courses: RDG 630, 650, 710, 711, 712. 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)

**880 Seminar: Survey of Research in Reading I. Cr. 3**

Prereq: admission to educational specialist or doctoral program. 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)

**881 Seminar: Survey of Research in Reading II. Cr. 3**

Prereq: admission to educational specialist or doctoral program. Survey of studies in the organization and evaluation of reading materials, readability, the monitoring and reporting of achievement, the diagnosis and correction of reading difficulties, sociological factors affecting reading, teaching reading to the culturally different, adult basic literacy, preservice and in-service training, and contemporary issues in reading education. Exploration of strategies commonly used in reading research. (B)

## SCIENCE EDUCATION (SCE)

**501 Biological Sciences for Elementary and Middle School Teachers. Cr. 3-4**

Material fee as indicated in *Schedule of Classes*. 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. (F,W)

**502 Physical Sciences for Elementary and Middle School Teachers. Cr. 3-4**

Material fee as indicated in *Schedule of Classes*. 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. (F,W)

**504 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)

**506 Methods and Materials of Instruction in Secondary School Science I. Cr. 3**

Material fee as indicated in *Schedule of Classes*. 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. (F)



**507 Methods and Materials of Instruction in Secondary School Science II. Cr. 3**

Prereq: SCE 506. Material fee as indicated in *Schedule of Classes*. 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. (W)

**603 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)

**604 Advanced Studies in Teaching Science in the High School. Cr. 3**

Material fee as indicated in *Schedule of Classes*. 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. (S)

**608 Teaching Environmental Studies. Cr. 3-6**

Material fee as indicated in *Schedule of Classes*. 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. (S)

**701 Curriculum Planning in Elementary and Secondary School Science. Cr. 1-6(Max. 12)**

Prereq: teaching or supervisory experience. 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)

**671 Methods and Materials of Instruction in Secondary Social Studies. Cr. 3**

Foundations of social studies instruction and curriculum; methods of teaching in middle, junior, and senior high school. (F,W)

**673 New Perspectives in Social Studies Education. Cr. 3**

Prereq: TED 516, SSE 671. 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)

**778 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)

**874 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)

**503 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)

**504 Speech Improvement in the Classroom. Cr. 2**

Identification of the speech characteristics and needs of teachers and pupils; deviations from normal speech; integration of speech improvement in classroom activities. (S)

**505 (NUR 525) Introduction to Developmental Disabilities. (S W 555)(P T 505). Cr. 3-4**

Prereq: junior standing; senior standing for nursing students. Nursing students must elect for four credits. Cross-disciplinary overview of developmental disabilities, e.g., mental impairment, epilepsy, cerebral palsy, autism, through presentation of contrasting theoretical schools of thought and intervention schema. (I)

**507 (CDS 701) Acoustics of Speech. Cr. 3**

Prereq: CDS 508, CDS 509. Acoustic consequences of phonetically-relevant articulatory movements. (F)

**511 Mental Retardation and the Cognitive Process. Cr. 3**

Characteristics, classifications, etiologies, evaluation and learning strategies for the improvement of the cognitive processes in mentally impaired learners. (F,W)

**513 Curriculum Development: Mental Impairments. Cr. 3**

Specialized instructional approaches, evaluation, techniques, curriculum and instructional aids for the mildly to profoundly mentally-impaired learner. (Y)

**514 Behavior Management: Mental Impairments. Cr. 3**

Specialized instructional and training approaches for management of behavior problems of mildly to profoundly mentally impaired and multiply impaired learners. (Y)

**526 Home and Hospital Education of Children with Physical Impairments. Cr. 4**

Emphasis on educational, recreational and vocational programs for children with physical health and neurological impairments in home, school and hospital settings. (F)

**530 (CDS 530) Introduction to Communication Disorders. Cr. 3-4**

Speech-language pathology in clinical and educational settings; classification of communication disorders and related management strategies. (F,S)

**531 (CDS 531) Clinical Methods in Speech Pathology. Cr. 3**

Prereq: SED 530. Procedures and materials for clinical diagnosis of articulatory, language, rhythm, and voice deficits of organic and non-organic causation. (W)

**532 (CDS 508) Phonetics. Cr. 3**

Multisensory study of sounds of the English language, emphasizing acoustic, physiologic, kinesio logic approaches. (F)

**533 (CDS 509) Anatomy and Physiology of the Speech Mechanism. Cr. 3**

General science of normal speech; anatomy, physiology and mechanics of respiration, phonation, resonance, articulation. (W)

**534 (CDS 536) Clinical Practice in Speech Pathology. Cr. 2**

Prereq: consent of instructor. Material fee as indicated in *Schedule of Classes*. Supervised experience in application of methods of diagnosis and treatment of clinical cases. (T)

**536 (CDS 532) Normal Acquisition and Usage. (LJN 536). Cr. 3**

Language development in children and the associated areas of emotional and motor development; language stimulation techniques and programs. (F)

**560 Introduction to Education of Hearing- and Visually-Impaired Children. Cr. 3**

Prereq: SED 503. 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)

**561 Pathology of Organs of Vision. Cr. 3**

Prereq: SED 560. Anatomy, physiology of vision; lectures by ophthalmologists on pathologies and correction of refractive errors; clinical observations; coordinated with procedures for teaching the visually handicapped. (I)

**562 Teaching Visually Impaired Children. Cr. 3**

Prereq: SED 503 and 560. Program planning including pupil evaluation, teaching methods and material; curriculum adaptation and pupil guidance. Off-campus observation required. (I)

**563 Braille Methods. Cr. 2**

Prereq: SED 560. Credit only upon satisfactory completion of SED 564. Acquisition of competency in reading and writing braille and Nemeth Code. (I)

**564 Advanced Braille and Technical Aids for Blind. Cr. 2**

Prereq: SED 563. Continuation of the braille code and instruction in technical aids including Optacon. Course to be taken the semester following SED 563. (I)

**570 Computer and Adaptive Technology in Special Education. Cr. 2-3**

Prereq: SED 503, TED 602. 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)

**600 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)

**601 Seminar in Multi-Handicapped. 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)

**602 Educating Intellectually Superior, Creative, and Talented Children. Cr. 3**

Prereq: six credits in psychology or special education. Individual differences, characteristics, identification, development, curriculum, adaptations, teaching procedures. (I)

**636 (CDS 636) Advanced Clinical Practice In Speech Pathology. Cr. 2 (Max. 8)**

Prereq: written consent of instructor. Material fee as indicated in *Schedule of Classes*. Supervised experience in application of diagnosis and treatment of clinical cases. (T)

**638 (CDS 638) Diagnostic Tests in Communication Disorders. Cr. 3**

Prereq: Junior standing; SPD 508, SPD 509, SPD 514, SPD 530, SPD 532. Diagnostic tests and instruments used in the appraisal of speech-language disorders. Test protocol and administration procedure. (W)

**646 (CDS 646) Communication Disorders I. Cr. 4**

Introduction to the clinical management of articulation and language disorders. (F)

**648 (CDS 648) Communication Disorders II. Cr. 4**

Introduction to the clinical management of cleft palate, voice, and stuttering disorders. (F)

**662 (CDS 662) Introduction to Voice Disorders and Cleft Palate. Cr. 3**

Prereq: SED 530. 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)

**664 (CDS 664) Language Pathology: Etiology and Diagnosis. (LIN 664). Cr. 3**

Prereq: SED 530 and 532. Descriptions, etiology, methods of diagnosis of language disorders in children, including remediation. (F)

**665 Orientation and Mobility: Visually Impaired Children. Cr. 2**

Prereq: SED 503, 560. Orientation and mobility methods for blind and partially seeing children, including a review of basic research in sensory perception relevant to orientation of the visually impaired to the physical environment. (I)

**701 Evaluation of Special Education Programs. Cr. 3**

An in-depth experience evaluating an appropriate learning system for use with a special group of severely/profoundly impaired citizens. The learning system will be based on a search for objectives, analyses of processes, and an identification of possible outcomes. (W)

**705 Mainstreaming Handicapped Students. Cr. 2**

Open only to non-majors. Strategies and techniques for integrating handicapped students into regular classrooms. (Y)

**706 Curriculum Planning for Gifted Secondary Students. Cr. 3-4**

Prereq: SED 602. Designing curriculum for gifted and talented students in secondary schools. Topics include: differentiating instruction, independent study, higher level thinking skills, and classroom management of learning. (B)

**714 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)

**730 (CDS 736) Internship in Speech Pathology. Cr. 2-4(Max. 4)**

Prereq: written consent of instructor. Advanced professional experience in clinical speech language pathology. (T)

**731 (CDS 738) 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)

**732 (CDS 702) Speech Production and Perception. Cr. 3**

Prereq: SED 507. Integration of the information from various disciplines involved in the production and measurement of speech and language. (F)

**736 (CDS 730) Behavior Modification in Speech Pathology. Cr. 3**

Presentation of classical, instrumental, implosive and modeling treatment paradigms applied to the various speech and language disorders in individual and group therapy. (F)

**760 (CDS 760) Advanced Clinical Methods: Phonology. Cr. 3**

Prereq: SED 660. The etiology, diagnosis and advanced treatment regimens of phonological disorders in children and adults. (S)

**761 (CDS 761) Advanced Clinical Methods: Stuttering. Cr. 3**

Prereq: SED 661, SPD 736. The etiology, diagnosis and treatment of stuttering disorders in children and adults. (W)

**762 (CDS 762) Advanced Clinical Methods: Voice Disorders. Cr. 3**

Prereq: SED 662. The etiology, diagnosis and treatment of voice disorders in children and adults. (S)

**763 (CDS 763) Advanced Clinical Methods: Aphasia. Cr. 3**  
Prereq: SED 663. Assessment and remediation principles designed for the adult aphasic. (Y)

**764 (CDS 764) Advanced Clinical Methods: Language Disorders. Cr. 3**  
Prereq: SED 664. Linguistic, cognitive, pragmatic, and perceptual considerations in assessment and remediation of childhood language disorders. (W)

**765 (CDS 765) Advanced Clinical Methods: Cleft Palate Speech. Cr. 3**  
Prereq: SED 662. The etiology, diagnosis and treatment of cleft palate disorders in children and adults. (S)

**766 (CDS 766) Advanced Clinical Methods: Neuromuscular Disorders. Cr. 3**  
The etiology, diagnosis and treatment of neuromuscular disorders in children and adults. (F)

**768 (CDS 767) Counseling in Communication Disorders. Cr. 3**  
Prereq: graduate standing. Principles of counseling appropriate to the student's work with families of/and the communicatively disordered. Video tapes, guest counselors, and supervised counseling experience. (F)

**776 Teaching Learning Disabled Children. Cr. 4**  
Prereq: learning disabilities/emotional impairment major. Methods, materials, and procedures for education of children with learning disabilities in elementary school programs. (F)

**777 Teaching Learning Disabled Adolescents. Cr. 4**  
Prereq: SED 776; learning disabilities/emotional impairment major. Methods, materials, and procedures for education of adolescents with learning disabilities in secondary school programs. (W)

**779 Language Bases of Learning Disabilities. (CDS 633). Cr. 3**  
Prereq: learning disabilities/emotional impairment major. 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)

**780 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)

**782 Psycho-Educational Information for Teachers of Emotionally Impaired. Cr. 3 or 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)

**783 Psycho-Educational Management and Curricula for Emotionally Impaired. Cr. 3 or 4**  
Prereq: SED 503. 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)

**784 Psycho-Educational Intervention and Acting Out Phenomenon. Cr. 2-3**  
Prereq: SED 782. Orientations of teachers of the emotionally impaired and ancillary personnel to techniques of intervention with acting out children and youth. (W)

**836 (CDS 809) Research In Speech Science. Cr. 1-3(Max. 6)** (T)

**837 (CDS 839) Seminar in Speech and Language Pathology. Cr. 3(Max. 18)**  
Prereq: consent of instructor. Topics to be announced in *Schedule of Classes*. No topic may be repeated for credit. (T)

**838 (CDS 838) Seminar in Speech Science. Cr. 3 (Max. 12)**  
Topics to be announced in *Schedule of Classes*. (T)

**850 Advanced Curriculum Seminar in Gifted Education: K-12. Cr. 1-3**  
Prereq: SED 602, 752. Advanced students in gifted child education work to refine skills in curriculum development for gifted and talented students. Students work on actual curriculum development projects to be used in their place of work. (B)

**870 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)

**907 Advanced Seminar. Cr. 2**  
Prereq: specialist or doctoral standing in special education. Major problems and trends. (I)

## SPEECH EDUCATION (S E)

**537 (SPC 504) Communication in the Black Community. (LIN 504). Cr. 3**  
Sociolinguistic and rhetorical analysis of speech and language behaviors among Afro-Americans, linguistic history and development of black English, related issues concerning the education of black children. (Y)

**606 (SPC 606) 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)

## VOCATIONAL EDUCATION (V E)

**541 Vocational Education Practicum in Instruction. Cr. 4**  
Coreq: BDE 532, FLE 545, FLE 501, or I E 677. Open only to vocational education majors. Strategies and materials for the teaching of vocational education subjects in a competency-based education setting. Teaching techniques, basic assessment, and evaluation as well as community and technological influences on teaching. (W)

**692 Cooperative Education - Field Study. Cr. 1-10(Max. 12)**  
Prereq: vocational major and curriculum area approval. Field experience to correlate with the teaching of vocational subjects. (F,W)

**693 Special Problems in Vocational Education. Cr. 1-4 (Max. 6, M.Ed.; max. 8, Ed. Spec.; max. 12, Ed.D. and Ph.D.)**  
Prereq: vocational teaching experience, consent of adviser. Special workshops and short term seminars in vocational subjects. (F,S)

**699 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)

**782 Planning and Organizing Instruction in Vocational 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 Vocational Education master's program. (F)

**783 Objective-Referenced Evaluation in Vocational Education. Cr. 3**

Prereq: V E 782 or functional background in competency-based education. Open only to vocational teachers and administrators. Principles and procedures of objective-referenced evaluation and assessment as incorporated into the competency based model of instruction. (W)

**898 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 vocational education. Economic, sociological, psychological, and technical factors. (W,S)

# THEORETICAL and BEHAVIORAL FOUNDATIONS

*Assistant Dean:* Alan Hoffman  
*Office:* 341 Education Building; 577-1721

## *Professors*

Walter J. Ambinder, Arthur Brown, John J. DeWitt, Guy T. Doyal, Donald Marcotte, Barry S. Markman, John J. Pietrofesa

## *Associate Professors*

Arnold Coven, John A. George, Stephen B. Hillman, Alan Hoffman, JoAnne Holbert, Patricia Leonard, Sandra L. Lyness, Paul W. Sullivan, Maurice O. White

## *Assistant Professors*

Michael Brown, Henderson Hendrix, Shlomo Sawilowsky, Barbara Wayne

## Graduate Degrees

*MASTER OF EDUCATION with majors in educational evaluation and research, counseling, history and philosophy of education, educational psychology, and educational sociology.*

*MASTER OF ARTS with majors in school and community psychology, counseling, and vocational rehabilitation counseling*

*DOCTOR OF EDUCATION with majors in educational psychology, educational sociology, educational evaluation and research, counseling, and history and philosophy of education*

*DOCTOR OF PHILOSOPHY with majors in educational psychology, educational sociology, educational evaluation and research, counseling, and history and philosophy of education.*

*EDUCATION SPECIALIST CERTIFICATES with majors in educational sociology, counseling, school and community psychology, and vocational rehabilitation counseling.*

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 therapy), educational sociology, history and philosophy of education, and vocational rehabilitation counseling. 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.

## COUNSELING

The counseling unit, through its graduate programs, offers students the opportunity to gain information, knowledge, and skills in the field of counseling. Sub-specializations include school counseling as well as adult/agency counseling and substance abuse counseling.

*Master of Arts* degree programs are offered for those 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 for those enrollees who expect to become school counselors, school guidance workers, career guidance specialists, and for those who wish to broaden or improve their teaching competency by including guidance skills.

In accordance with the Michigan Department of Education regulations, this program area has been approved to offer graduate programs leading to a recommendation for Michigan school counselor endorsement at the K-12 level. A currently valid Michigan teaching certificate is necessary for such a recommendation. Please obtain the program area statement and counselor endorsement information sheet for course and degree requirements.

*The Education Specialist Certificate* program is intended for those who are presently 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 prerequisites, 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, colleges, and community colleges. In addition, those desiring counseling positions in government agencies, and other facilities may require advanced training in counseling theory and practice, scholarly research, and the supervision of counselors at the doctoral level.

*The Doctor of Education* program is designed for persons who wish to become directors for guidance or pupil personnel programs, coordinators or consultants in guidance and counseling programs in K-12 and intermediate school districts and for those who wish to improve skills and competencies in counseling, program development, career development, research, and supervision of counseling.

The counseling 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.

### 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 14. A teaching certificate is not required for admission.

**DEGREE REQUIREMENTS:** The two specializations available in this program, community/agency counseling and substance abuse counseling, require a minimum of forty- credits. These programs are offered under the following master's degree options:

*Plan B: Forty-eight credits of course work including a three credit essay.*

*Plan C: Forty-eight credits of course work including a terminal project.*

Required courses for both specializations include: CED 607, 673, 700, 701, 704; ED 799; and EDP 737.

Students in the community/agency counseling concentration must also complete: CED 702, 703, 708, 715; and EDP 749. The gerontology and developmental disabilities certificates for students in community/agency counseling requires additional courses selected in consultation with an adviser.

Students in the substance abuse counseling concentration must complete: CED 503, 505, 509, 672, 702; and VRC 743.

Requirements for the Master of Arts degree must be completed within six years after admission into the program.

### Master of Education with a major in Counseling

**Admission:** For requirements, see page 67. A teaching certificate is required for admission to the K-12 counseling specialization.

**DEGREE REQUIREMENTS:** Generic requirements for the Master of Education may be found on page 67. In the area of counseling, two specializations are available: guidance worker/career education counselor and K-12 school counselor, requiring a minimum of thirty-seven and fifty-one credits, respectively. Required courses for both specializations include: CED 607, 700, 701, 704, 707, 708; ED 799; and EDP 749.

Students in the K-12 school counselor specialization must also complete CED 702, 715; SED 503; EDP 545 and 548.

Additional electives and General Professional courses are selected in consultation with an adviser.

### Education Specialist Certificate with a major in Counseling

**Admission:** In addition to meeting the admission requirements for Education Specialist Certificate programs stated on page 68, applicants must have one year of experience as a counselor. The applicant must also have completed a master's degree in counseling, or completed the following prerequisites, before applying to the program: CED 607, 702, 704, 708, 715; and EDP 749.

**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 69, applicants to the counseling doctoral program must take the Graduate Record Examination and submit a counseling interview tape to comply with program procedures.

**DEGREE REQUIREMENTS:** Basic degree requirements for the Ph.D. and Ed.D. programs are stated on page 69. Ph.D. and Ed.D. students in counseling are required to complete CED 800, 802, 804, 808, and 912, as well as two doctoral seminars.

For Ph.D. students, the research requirement includes EER 763, 765, 864, 865; and CED 807.

For Ed.D. students the research requirement includes EER 763, 765, 864; and CED 807.

## 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 67.

**DEGREE REQUIREMENTS:** A minimum of thirty credits is required for this degree under Plan A, B, or C as defined on page 67. Required courses include ED 799 if Plan B or C is elected, or ED 899 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 69.

**DEGREE REQUIREMENTS:** Basic degree requirements for Ph.D. and Ed.D. programs are stated on page 69. 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 14. A minimum of fifteen credits in psychology or educational psychology, or a master's degree in social work, counseling, special education, or equivalent preparation 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 April 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:

The Master of Arts degree is offered in this area under the following options:

*Plan B: A minimum of sixty-one credits including a three credit essay.*

*Plan C: A minimum of sixty-one credits in course work including a terminal project.*

Course work requirements for either plan include: EDP 622, 722, 724, 730, 739, 740, 741, 742, 743, 749, 756, 761, 762, 771, 832; EER 563; and ED 799.

#### Marriage and Family Psychology Emphasis:

Course work requirements for either plan include: EDP 719, 720, 724, 737, 741, 743, 749, 751, 752, 756, 761, 771; CED 509; EER 563; and ED 799. A practicum in clinical procedures (EDP 832) 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 67.

**DEGREE REQUIREMENTS:** Basic degree requirements for the Master of Education degree are stated on page 67. 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 Ed.D. and Ph.D. program must meet the admission requirements stated on page 69. 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 Ed.D. and Ph.D. degree are stated on page 69. This program requires

a minimum of ninety-six credits beyond the baccalaureate degree. All doctoral students must complete EDP 821, 823, and 825 during their first year of study. Research course requirements include: EER 763, 765, 864, 865, and 866.

A broad preliminary examination will be administered to the doctoral student at the end of the first year of study.

## EDUCATIONAL SOCIOLOGY

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 67.

**DEGREE REQUIREMENTS:** Basic requirements for the Master of Education degree are stated on page 67. 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 67. Students are urged to complete at least six credits in electives outside the major.

### Educational Specialist Certificate with a major in Educational Sociology

**Admission:** See page 68.

**CERTIFICATE REQUIREMENTS:** A minimum of thirty credits is required for this certificate. Basic requirements are stated on page 68. All *Plans of Work* are individually developed in consultation with an adviser.

### Doctoral Degrees with a major in Educational Sociology

**Admission:** See page 69.

**DEGREE REQUIREMENTS:** Basic degree requirements for Ed.D. and Ph.D. programs are stated on page 69. All courses in the major are selected in consultation with an adviser.

## HISTORY AND PHILOSOPHY OF EDUCATION

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 go on to a doctoral degree in philosophy of education as well as 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 67.

**DEGREE REQUIREMENTS:** Basic requirements for the Master of Education degree are stated on page 67. 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 67.

### Doctoral Degrees with a major in History and Philosophy of Education

The doctoral degree in history and philosophy of education is offered for students who intend to teach at the college or university level or for those with positions in schools, colleges, and other institutions which require an understanding of the philosophic nature of educational and other social problems.

Doctoral candidates may select from a wide range of cognate courses in the humanities, literature, music, art, psychology, philosophy, and the social sciences.

**Admission:** See page 69.

**DEGREE REQUIREMENTS:** Basic degree requirements for the Ed.D. and Ph.D. programs are stated on page 69. All courses in the major are selected in consultation with an adviser.

## VOCATIONAL REHABILITATION COUNSELING

Vocational rehabilitation programs prepare rehabilitation counselors for public and private rehabilitation agencies. These programs equip the student to work with young people and adults who are physically disabled, mentally retarded, emotionally ill, socially disadvantaged, or chemically dependent. In preparing the student, emphasis is placed on developing his/her ability to provide clients with (1) diagnostic and remedial services, (2) vocational counseling, (3) training, and (4) placement in suitable employment.

### Master of Arts with a major in Vocational Rehabilitation Counseling

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14.

**DEGREE REQUIREMENTS:** The Master of Arts degree in this discipline is offered under the following options:

**Plan B:** A minimum of forty credits including a three credit essay.

**Plan C:** A minimum of forty credits in course work including a terminal project.

Course requirements for either plan include: VRC 741, 742, 743, 745, 748; CED 704, 708; EDP 749; EER 764; ED 798 and 799. These course requirements include three practical experiences: field studies (ED 798), a counseling laboratory and an internship (VRC 742: Cr. 3-6, Max. 12). Through the field studies, students observe and interact with patients and clients in several rehabilitation settings. In the counseling laboratory, students interview clients in a realistic rehabilitation setting under University supervision. Upon satisfactory completion of the laboratory phase, students enter an internship of 600 clock hours in a rehabilitation agency or facility.

## Education Specialist Certificate with a major in Vocational Rehabilitation Counseling

Admission: See page 68.

**CERTIFICATE REQUIREMENTS:** A minimum of thirty credits is required for this certificate. Basic requirements are stated on page 68. All course requirements are selected in consultation with an adviser.

## GRADUATE COURSES

*The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.*

## COUNSELOR EDUCATION (CED)

### 503 Role of the Counselor in Substance Abuse. Cr. 3

Prereq: CED 360 or graduate standing. An overview of guidance methods, local substance abuse programs, referral sources, court and legal procedures. (F)

### 505 Counseling Strategies with Substance Abusers. Cr. 3

Prereq: CED 350, 503 or graduate standing. Use of specific counseling strategies and treatment models with substance abusers. (W)

### 509 Family Dynamics and Counseling: Substance Abusers. Cr. 3

Prereq: CED 350 or 503 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)

### 607 Introduction to Counseling. Cr. 4

Prereq: admission to master's program in counseling. Introduction to guidance and counseling theory and practice. Survey of counseling and guidance services in various settings. Overview of the counseling process, counseling theories, and practice with basic helping skills. (T)

### 670 The Role of the Teacher in Guidance. Cr. 2

Introduction to guidance principles, techniques and roles, with stress on classroom application. Primarily for school personnel other than counselors. (T)

### 672 Workshop In Guidance and Counseling. Cr. 2–4(Max. 18)

For counselors, teachers, and pupil personnel workers. Consideration of counseling and guidance issues in school, agency and community settings. Counseling, consultation, and coordination dimensions of guidance and counseling. (T)

### 673 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)

### 700 Introduction to Group Work. Cr. 2

Prereq: CED 607 or 670 or equiv.; coreq: 701. Open to counseling majors only. Methods and techniques of group work in counseling settings. Students will study various facets of group dynamics and their applications in various employment settings. (T)

### 701 Group Counseling Participation. Cr. 2

Prereq: CED 607 or 670 or equiv.; coreq: 700. Offered for S and U grades only. Open only to counseling majors. Group counseling session to experience counseling from the client's perspective, and to become familiar with procedures and methods of group counseling in a laboratory setting. (T)

### 702 Internship in Guidance and Counseling and Student Personnel Work. Cr. 2–10(Max. 10)

Prereq: consent of adviser and instructor during semester prior to registration. Field supervision of counselors or personnel workers in institutional settings. Students must engage at least part-time in such roles. Seminar to discuss problems encountered in guidance and counseling programs. (F,W)

### 703 Counseling and Consulting Services. Cr. 4

Prereq: CED 607. Not open to students in School Counseling Programs. Consultation theory and processes in agencies and post-secondary educational institutions. Roles and functions of counselors and student personnel specialists in program and proposal development; conflict management; organization, administration, and evaluation of services; public relations; knowledge of community referral resources and referral process. (Y)

### 704 Case Problems in Counseling and Guidance. Cr. 3

Prereq: CED 607 or 670 and graduate course in psychology or educational psychology; prereq. or coreq: EDP 749 or equiv. Theories and concepts for counseling case assessment. Identification and analysis of problems of individuals. Analysis of cases; design of solution proposals; intensive and extensive study of an individual. (T)

### 707 School Guidance, Counseling, and Consulting. Cr. 4

Prereq: CED 607. 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)

### 708 Career Development and Counseling. Cr. 4

Prereq: CED 607. Theories and practices of career development and counseling; occupational and educational information; use of traditional resources and computer-assisted guidance systems. (T)

### 715 Counseling Process and Practicum I. Cr. 5

Prereq: CED 704, EDP 749 or equiv.; prereq. or coreq: CED 708 and written consent of instructor. Theories of counseling and application to the therapeutic process. Stages of counseling and applicable counseling techniques. Students conduct counseling sessions with clients in the Counseling Center and receive individual and group supervision. (F)

### 716 Counseling Process and Practicum II. Cr. 5

Prereq: grade of B or above in CED 715; written consent of instructor. Application of counseling theories to individual counseling; advanced counseling skills and strategies. Students conduct counseling sessions with clients in the Counseling Center and receive individual and group supervision. (W)

### 800 Seminar in Group Counseling. Cr. 3

Prereq: CED 700 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)

### 802 Counseling Process and Practicum III. Cr. 2–8(Max. 8)

Prereq: admission to Ed.Spec. or doctoral program in counselor education; CED 716; consent of adviser. Supervised practice counseling in the counseling laboratory. Counseling competence evaluated. (F,W)

### 804 Advanced Counseling Theory and Method. Cr. 3

Prereq: CED 704. Theories of personality and learning applied to case diagnosis and projected remediation. (B)



**807 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)

**808 Advanced Career Development and Counseling. Cr. 2-4(Max. 8)**  
Prereq: CED 708 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)

**902 Internship In Counseling/Counselor Education. Cr. 2-8(Max. 24)**  
Prereq: admission to counselor education doctoral program. Purposes, objectives, materials, techniques and practices in counselor education programs. Supervised experience in advanced counseling and in various phases of the counselor education program. (F,W)

**912 Seminar and Internship Supervising Counselors. Cr. 3**  
Prereq: CED 802, admission to counselor education doctoral program. Theory and practice of supervision. Students supervise practicum counselors under staff guidance. (F,W)

## EDUCATIONAL EVALUATION AND RESEARCH (EER)

**563 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)

**761 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)

**762 Practicum In Evaluation. Cr. 2-6(Max.6)**  
Application of principles of quantification in education; construction of examinations, scales, tests, evaluational instruments for classroom use. Rationales for improving diagnosis and appraisal of behavioral goals in curriculum and school programs. Special emphasis on student's own evaluation and measurement programs. (T)

**763 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)

**764 Fundamental Research Skills. 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)

**765 Computer Use in Research. Cr. 3**  
Prereq: EER 763. Introduction to computer use in educational research with emphasis on using statistical packages (MIDAS and SPSS, BASIC programming language); writing statistical programs. (T)

**862 Measurement Problems in Medical Education II. Cr. 3**  
Prereq: EER 761 or equiv. Theory and rationale of response contingent testing; development and scoring of response contingent

tests; psychophysical methods related to scaling problems; multidimensional scaling. (Y)

**864 Variance and Covariance Analysis. Cr. 3**  
Prereq: EER 763 or equiv. Multiple, partial, canonical correlation: variance and covariance analysis; Models I and II. Statistical analysis in experimental designs; Random Blocks, Latin Squares, Graeco-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)

**865 Multivariate Analyses. Cr. 3**  
Prereq: EER 763 or equiv. Discriminant analysis, profile analysis; placement and classification problems; component and factor analysis. Supporting topics and techniques; transformation of variables, computer usage. (Y)

**866 Research and Experimental Design. Cr. 3**  
Prereq: EER 763 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)

**961 Current Issues and Problems in Medical Education. Cr. 3(Max. 9)**  
Prereq: admission to doctoral program. Detailed analysis and review of the literature on current topics of research or theoretical concern related to problems in medical education. (Y)

**962 Internship in Evaluation and Research. Cr. 2-6**  
Prereq: EER 761, 763, 764 or equiv. and consent of adviser. Negotiated and supervised placement into a constructive research situation. May be taken in lieu of the specialized research techniques requirement. (F,W)

## EDUCATIONAL HISTORY AND PHILOSOPHY (EHP)

**760 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)

**764 Seminar: Economic and Political Philosophies and Policies As They Affect Education. Cr. 2-4**  
Import for educational aims, methods, and the organizational structure of educational systems of economic and political philosophies and policies. (B)

**767 (HED 853) Seminar In the History and Philosophy of Higher Education. (HIS 811). 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)

**768 Seminar: Current Controversies in Education. Cr. 3(Max. 6)**  
Selected contemporary issues; emphasis on value conflicts. (I)

**769 Moral Judgment and Moral Education. Cr. 3**  
Alternative bases for making moral judgments and analysis of alternative forms of moral education. Values clarification, moral stage development, indoctrination, behavior modification, and the moral influence of the school and society. (B)

**865 Seminar: The Educational Thought of John Dewey. Cr. 3**  
Prereq: EHP 360 or 760. Appraisal of the contributions to educational theory and practice of America's most noted philosopher-educator. (I)

**960 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)

### **545 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)

### **548 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)

### **621 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)

### **622 Psychology of Exceptional Children. Cr. 3 or 4**

Material fee as indicated in *Schedule of Classes*. Psychological aspects of cognitive and physical deficits in children; laboratory experience in differential diagnosis. (F)

### **635 The Learning Process and Programmed Instruction. Cr. 2-3**

Development and use of programmed instruction skills including the writing of behavioral objectives for cognitive and affective domain, task analysis performance, taxonomic sequence of objectives, pre-testing and post-testing. Demonstration of learned skills in writing and field testing instructional programs. (F)

### **719 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)

### **720 Advanced Marriage and Family Therapy. Cr. 3**

Prereq: EDP 719. Advanced development of skills and knowledge of therapy with couples and families. (W)

### **722 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)

### **724 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)

### **730 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)

### **735 The Learning Process. Cr. 2-3**

Substantive issues involved in learning as they relate to school practice. (T)

### **737 Adult Psychopathology. Cr. 3**

Psychopathology of adulthood; mental disorders, treatment and diagnosis. (Y)

### **739 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)

### **740 Social Psychology of Educational Issues. Cr. 3**

Open only to students in the school and community psychology program. 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)

### **741 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)

### **742 Introduction to Behavioral Psychology. Cr. 4**

Basic principles and theories of behavioral psychology. Theoretical aspects of both operant and respondent conditioning. (I)

### **743 Applications I: Behavioral Psychology and Social Learning. Cr. 4**

Behavioral techniques used in dealing with the social behavior of both groups and individuals. (Y)

### **749 Psychological Evaluation I. Cr. 1 or 3**

Material fee as indicated in *Schedule of Classes*. Intensive overview of psychological tests, psychometric theory of intelligence, educational achievement, and the assessment of personality. (F,W)

### **751 Therapy for Children Under Stress. Cr. 3**

Prereq: admission to school and community psychology, or marriage and family therapy program. The family system distressed by marital conflict and its effect upon the children as part of the family unit. Consideration also given to available remedial measures. (W)

### **752 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)

### **753 Diagnostic Study of Learning Disability. Cr. 4**

Prereq: EDP 622. Material fee as indicated in *Schedule of Classes*. 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. (W)

### **756 Psychological Evaluation II. Cr. 4**

Open only to students in school and community psychology, or marriage and family therapy program. Material fee as indicated in *Schedule of Classes*. 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. (W)

### **761 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)

### **762 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)

### **771 Psychological Evaluation III. Cr. 4**

Open only to students in school and community psychology, or marriage and family therapy program. Material fee as indicated in

*Schedule of Classes.* 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. (F)

**796 Research in Educational Psychology. Cr. 1–8(Max. 8)** (Y)

**821 Fundamental Studies In Educational Psychology I – Learning. Cr. 3**

Prereq: admission to a doctoral program. 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)

**823 Fundamental Studies in Educational Psychology II – Growth and Development. Cr. 3**

Prereq: admission to a doctoral program. Contemporary issues in child growth and development related to classroom practice. (F)

**825 Fundamental Studies in Educational Psychology IV. Cr. 3–9(Max. 9)**

Advanced study of a specific area in psychology with application to educational practice. Topics to be announced in *Schedule of Classes*. (W)

**832 Practicum in Clinical Procedures. Cr. 1–10(Max. 10)**

Open only to students in school and community psychology, or marriage and family therapy program. Practicum 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; practicum experience will equal or exceed 500 hours. (T)

**833 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. Placements in a school or community mental health agency appropriate to the student's plan of study. (T)

**931 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)

**501 Survey of Educational Systems of Major European Countries. Cr. 3**

Present-day developments in education in those countries of Europe which have influenced schools in all parts of the world; notably England, France, Germany, Scandinavia, Russia; emphasis on historical, political, social and economic bases for school systems in these countries. Recent reform movements and developments stressed. (I)

**662 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 subcultural backgrounds found in modern urban areas. Emphasis on contemporary educational problems in the urban setting. (Y)

**762 The Study of Black History and Culture. Cr. 3**

Afro-American culture with emphasis on sociological implications in contemporary American society. (I)

**763 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)

**764 Topical Seminar in Educational Sociology. Cr. 1–8(Max. 8)**

Topics with a unique sociological perspective in education. (I)

**765 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)

**864 Socio-Cultural Factors In Learning. Cr. 2–3**

Prereq: any graduate course in education sociology or sociology. Construction of personality, life orientation, identity, emotion, aspiration, perception, cognition, and learning as taking place in a given culture or cultures within specific social experience. (B)

**962 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)

## VOCATIONAL REHABILITATION COUNSELING (VRC)

**741 Vocational Rehabilitation of the Handicapped. Cr. 3**

Rehabilitation philosophy; historical, legislative, and organizational concerns in serving the handicapped. Causes, incidence, and nature of various disabilities; diagnosis, treatment, education and training, placement and follow-up. (F)

**742 Practicum in Vocational Rehabilitation. Cr. 3–6(Max. 12)**

Prereq: admission to the vocational rehabilitation counseling program and consent of adviser. Supervised educational experiences in approved rehabilitation agency settings. Integration of professional practice with understandings and skills acquired through course work. Practicum experiences in public and private rehabilitation agencies. (T)

**743 Rehabilitation Counseling of the Handicapped. Cr. 3**

Principles, procedures, and methods in counseling the physically and mentally handicapped; referral, interviewing, testing, determining eligibility; selecting vocational objectives, personal adjustment counseling, vocational training, selective placement and follow-up. Types of disabilities, their implications for rehabilitation with case studies. (W)

**745 The Placement Process in Rehabilitation Counseling. Cr. 3**

Vocational structure of society; occupational information in rehabilitation counseling; job development; job analysis related to employment of the handicapped; job entry requirements; selective placement procedures; follow-up techniques; case studies. (W)

**748 Medical Information for Vocational Rehabilitation Counselors. Cr. 3**

Open only to majors in vocational rehabilitation counseling. Consideration of medical care in the rehabilitation process. Etiology, prognosis, therapy, and related psychological factors. Relationship of physical capacities and limitations of disabled individuals to job functioning. (W)

**796 Research in Vocational Rehabilitation. Cr. 1–6(Max. 6)**

Prereq: written consent of adviser. (T)

## EDUCATION (ED)

*The following courses, designated ED, are College-wide courses and thus are interdivisional in nature.*

**598 Field Studies. Cr. 1-8(Max. 8)**

Prereq: consent of adviser or instructor. Supervised professional study in field settings. (T)

**790 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)

**796 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. (T)

**798 Field Studies. Cr. 1-8(Max. 16)**

Prereq: consent of adviser or supervising instructor. Supervised professional study in field situations. (T)

**799 Terminal Master's Seminar and Essay or Project. Cr. 3**

(T)

**899 Master's Thesis Research and Seminar. Cr. 1-8(8 req.)**

(T)

**999 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: Fred W. Beaufait**

# 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. Each of the graduate programs and disciplines of this College offers opportunities for graduate study at the master's and doctoral level.

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 Division of Engineering offers the Master's and Doctor of Philosophy degrees in chemical, civil, computer, electrical, industrial, mechanical, and materials science and engineering, and in 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 in Hazardous Waste Management and in Polymer Engineering:* The College offers certificate programs in these areas through the combined efforts of the Departments of Chemical Engineering and Materials Science and Engineering. For requirements, see page 114.

## Graduate Degrees and Certificates

### *MASTER OF SCIENCE in*

- Chemical Engineering
- Civil Engineering
- Computer Engineering
- Electrical Engineering
- Electronics and Computer Control Systems
- Engineering Technology
- Hazardous Waste Management
- Industrial Engineering
- Manufacturing Engineering
- Materials Science and Engineering
- Mechanical Engineering
- Operations Research

### *DOCTOR OF PHILOSOPHY in*

- Chemical Engineering
- Civil Engineering
- Computer Engineering
- Electrical Engineering
- Industrial and Manufacturing Engineering
- Materials Science and Engineering
- Mechanical Engineering
- Operations Research

### *GRADUATE CERTIFICATE PROGRAMS in*

- Hazardous Waste Management
- 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.

**The Machine Tool Laboratory** in the College of Engineering has been organized with the goal of developing a better balance between hardware and software, utilizing hands-on approaches, and focusing on prototype development. The laboratory is supported by faculty in four departments of the College. Major strengths of the faculty are in the areas of vibration and acoustics; sensors and instrumentation;

heat and mass transfer; control systems and machine tools (Mechanical Engineering); reliability, quality control and manufacturing systems (Industrial Engineering); metal and polymer materials (Chemical Engineering and Materials Science and Engineering); and machine drives and robotics (Electrical and Computer Engineering). The Laboratory has apparatus for testing, measuring, data acquisition, machining, milling, signal processing instrumentation and prototype utilization of robotics. The Laboratory has expertise and facilities to undertake industry-related projects in various areas of engineering, especially related to general purpose machine elements, machine tools, and robotics.

## Research Facilities

Laboratories and computer facilities with appropriate software and a modern microcomputer laboratory with networking facilities are available for graduate research purposes. Among the specialized laboratories are those for research in structural behavior under static and dynamic load, soil dynamics, and groundwater contamination. A new Intelligent Computers Laboratory has been developed and is now supporting extensive research in the areas of artificial intelligence and inductive learning.

## College Facilities

The College of Engineering occupies a new, three-story office building attached to its recently renovated classroom/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 classrooms and 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), 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.

# ACADEMIC REGULATIONS

*For complete information regarding academic rules and regulations of the Graduate School, see pages 14-30. 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. James McMicking; 577-3802

Civil and Environmental Engineering:

Dr. Tappan Datta; 577-3808

Electrical and Computer Engineering:

Dr. Pepe Siy; 577-3841

Electronics and Computer Control Systems

Dr. Donald J. Silversmith, Associate Dean; 577-3861

Engineering Technology

Dr. Mulchand Rathod; 577-0800

Hazardous Waste Management

Dr. Ralph Kummier; 577-3800

Industrial and Manufacturing Engineering:

Dr. Donald Falkenburg; 577-3821

Materials Science and Engineering:

Dr. Charles Manke; 577-3849

Mechanical Engineering:

Dr. Trilochan Singh; 577-3845

Dr. Ronald Gibson; 577-3843

Polymer engineering

Dr. K. Y. Simon Ng; 577-3805

**International Students:** Students from other countries desiring admission 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. All foreign graduate applicants MUST (1) present an acceptable scholastic record, (2) make financial arrangements for tuition, supplies, and living expenses, and (3) have sufficient proficiency in English as a foreign language to be able to study in classes conducted entirely in English. The TOEFL test is generally required, with a score of at least 550.

## 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 32. Requests for such support should be included with the Graduate School application.

## 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 receiving a 'C' grade are immediately placed on probation and the performance of these students is closely monitored by the Departmental Graduate Committees.

A graduate student may petition to repeat a graduate course in which a grade of 'C' or lower is received. A 'C' grade or lower in a Core course MUST be repeated. No more than two courses may be repeated in the graduate program, and a student must have the appropriate approvals BEFORE the repeat registration takes place. A grade of 'C' is regarded as a failing grade in the graduate program and can be the basis for terminating a student. Further, no more than two 'C's can be allowed for any student to continue in the program, whether or not the courses are repeated and better grades are subsequently received. No 'F' grades are permitted in subjects listed on the student's approved Plan of Work, and, generally, any such subject must be repeated.

All course work must be completed in accordance with the academic procedures of the Graduate School governing graduate scholarship and degrees; see pages 20–30.

## Transfer Credits

Every Wayne State student must complete at least twenty-four credits in residence. A student may file a Petition for Transfer of Graduate Credit provided: 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. All transcripts supporting the transfer of credits must be submitted before the close of 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.

## 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 degree of 'Master of Science in (major field)' is offered in chemical, civil, computer, electrical, industrial, mechanical, and materials science and engineering, operations research, and (as an interdisciplinary curriculum) electronics and computer control systems. The candidate must be recommended for a degree by a committee of not less than three regular graduate faculty members.

**Admission** to these programs is contingent upon admission to the Graduate School; for requirements, see page 14. 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 2.6 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 have a higher minimum acceptable upper division h.p.a. Regular 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.

Students enrolled in master's degree programs must file a *Plan of Work* by the time twelve graduate credits have been earned, or subsequent registration will be denied.

## 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 C: A minimum of thirty-two credits in course work. A thesis is not required.*

The *Master of Science in Engineering Technology* program is offered under **Plan B**, as detailed in the description for this program below.

## — 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 six credits must be in graduate courses in the major (700 and 800 series). Also, at least one-half of the course work, exclusive of thesis credit, must be in the major field.

## — 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.

## 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 and at the Ford Research and Engineering Center in Basildon, England and Cologne, Germany. 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 14. Ford Motor Company employees should submit admission credentials through the Ford Training and Education Office. Applicants 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 C: Thirty-two credits of course work.*

Both options require a three-course interdisciplinary core consisting of CSC 511, M E 555, and ECE 562. The additional twenty credits are elective chosen by the student through an approved *Plan of Work*. These courses must include at least two 700-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 506 and ECE 660 as part of their elective credit. It is recommended that at least one elective be chosen from each participating department (M E, 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: chemical engineering, civil engineering, computer engineering, electrical engineering, industrial engineering, manufacturing engineering, materials science and engineering, mechanical engineering, and operations research.

**Admission** to the doctoral programs of the College is contingent upon admission to the Graduate School; for requirements, see page 14. For admission into a Ph.D. engineering program, the student's overall honor point average must be 3.0 or better, and 3.2 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 3.3. Individual departments may have higher admission requirements.

A student need not obtain the Master of Science degree as an intermediate step.

**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.

## COLLEGE OF ENGINEERING DIRECTORY

### DEAN

Room 1150, Engineering Building; 577-3775

### ASSISTANT DEAN—UNDERGRADUATE PROGRAMS

Room 1172, Engineering Building; 577-3780

### ASSOCIATE DEAN—ACADEMIC AFFAIRS

Room 1170, Engineering Building; 577-3040

### ASSOCIATE DEAN—GRADUATE PROGRAMS AND RESEARCH

Room 1164, Engineering Building; 577-3861

### ADMINISTRATIVE OFFICER

Room 1158, Engineering Building; 577-3817

### DIRECTOR, ENGINEERING TECHNOLOGY

4855 Fourth Avenue; 577-0800

### DIRECTOR, SPECIAL PROGRAMS

Room 1174, Engineering Building; 577-3812

### COORDINATOR, COOPERATIVE EDUCATION

W.S.U. Placement Services, 1001 Faculty/Administration Bldg.;  
577-3390

### RESEARCH SUPPORT OFFICER

ROOM 1168, ENGINEERING BUILDING; 577-3759

### CHEMICAL ENGINEERING

Room 1116, Engineering Building; 577-3800

### CIVIL AND ENVIRONMENTAL ENGINEERING

Room 2172, Engineering Building; 577-3789

### ELECTRICAL AND COMPUTER ENGINEERING

Room 3103, Engineering Building; 577-3920

### HAZARDOUS WASTE PROGRAMS

Room 1103, Engineering Building; 577-3716

### INDUSTRIAL AND MANUFACTURING ENGINEERING

Room 3172, Engineering Building; 577-3821

### MATERIALS SCIENCE AND ENGINEERING

Room 1116, Engineering Building; 577-3800

### MECHANICAL ENGINEERING

Room 2103, Engineering Building; 577-3845

### BIOENGINEERING CENTER

Room 206, 818 West Hancock; 577-1344

### CENTER FOR AUTOMOTIVE RESEARCH

Room 2121, Engineering Building; 577-3887

### MACHINE TOOL LABORATORY

Room 2115, Engineering Building; 577-3898

### MAILING ADDRESS FOR ALL OFFICES:

College of Engineering,  
Wayne State University,  
5050 Anthony Wayne Drive,  
Detroit, MI 48202-3902

# CHEMICAL ENGINEERING

Office: 1116 Engineering Building 577-3800  
Chairperson: Ralph H. Kummier  
Associate Chairperson: James H. McMicking

## Professors

D.A. Crowl, E. Gulari, R.H. Kummier, R. Marriott, E. W. Rothe, S.K. Stynes

## Associate Professors

S.O. Salley, C.B. Leffert (Emeritus), J.H. McMicking, K.S. Ng, B. Shorhouse

## Assistant Professor

G. Yawson

## Adjunct Professors

J. Dragun, G. Boicourt, R. Edwards, H. Gandhi, K. Klein, J. Louvar, R. Powitz, E. Reck

## Graduate Degrees and Certificates

*GRADUATE CERTIFICATE in Hazardous Waste Management*

*GRADUATE CERTIFICATE in Polymer Engineering*

*MASTER OF SCIENCE in Chemical Engineering*

*MASTER OF SCIENCE in Hazardous Waste Management*

*DOCTOR OF PHILOSOPHY with a major in 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 modeling and process simulation, laser light scattering applications, supercritical transport, environmental and safety engineering, chemical kinetics, multiphase flow systems, alternative fuels, polymeric materials, atomic and molecular collision phenomena, and pharmacokinetics and biotechnology. New laboratories and extensive computer equipment are available for graduate research. In addition, there are many opportunities to conduct research in Detroit's diversified industrial facilities.

## Certificate Program and Master of Science in Hazardous Waste Management

These programs have been developed by the Department of Chemical Engineering in consultation with the Institute for Hazardous Materials Management. The program will 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. Completion of the Certificate Program is a prerequisite for admission to the Master of Science in this field.

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14. Applicants must have a Bachelor of Science degree, or the equivalent, in one of the disciplines cited in the preceding paragraph.

**CERTIFICATE REQUIREMENTS:** Students must complete thirteen credits including nine credits in required chemical engineering courses: CHE 551, 554, 556, and 751; and four credits in electives. The minimum h.p.a. must be 3.0. For recommendations about electives and additional information, interested students should contact the Departmental adviser; telephone: 577-3716.

## Master of Science in Hazardous Waste Management

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 13. Applicants must enter through initial enrollment in the Certificate Program in Hazardous Waste Management and have satisfied those admission requirements as cited above.

**DEGREE REQUIREMENTS;** This Master of Science degree is offered under the following options:

**Plan A:** *Thirty-eight credits including CHE 551 and 554 and an eight-ten credit thesis.*

**Plan C:** *Thirty-eight credits of course work including CHE 551 and 554.*

## Certificate Program in Polymer Engineering

This program provides technically-trained, Bachelor of Science-level graduates in engineering, chemistry, or physics with formal training in polymer engineering. It offers comprehensive coverage of the fundamentals of polymer science and engineering, and of specialized topics that are of current industrial relevance.

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14. Applicants must have a Bachelor of Science degree in engineering, chemistry, or physics.

**CERTIFICATE REQUIREMENTS:** Students must complete thirteen credits, including seven credits in required courses: CHE 535, 635, and 733 or 735; and six credits in electives. The minimum h.p.a. must be 3.0. For additional information and advice about electives, contact Dr. Simon Ng or Dr. Ralph Kummier; telephone: 577-3800.

## Master of Science in Chemical Engineering

The Master of Science program is open to students with a bachelor's degree in engineering, chemistry, 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 14. Regular admission requires a 2.8 honor point average or the equivalent as determined by the Department Graduate Officer. Applicants with an accredited Bachelor of Science in chemistry and a 3.0 h.p.a. may apply for a second Bachelor of Science, in chemical engineering, through a dual B.S./M.S. degree program. The requirements for these two degrees may be satisfied concurrently.

Prerequisite courses may be assigned to applicants lacking chemistry/engineering undergraduate degrees and to otherwise qualified applicants weak in some areas deemed essential to this profession.

**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 twenty-four credits in chemical engineering (including thesis credits for Plan A) including: CHE 710, 720, 730, 740, and either 505 or 697. 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 20–30 and 111–113, respectively.

## Doctor of Philosophy in Chemical Engineering

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14 Regular admission requires a 3.5 honor point average in a Master of Science program, or a Bachelor of Science program if no Master of Science work has been taken, AND the recommendation (signature) of a faculty member who will become the student's adviser. 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. The program requires a qualifying examination (written and oral, taken after the equivalent of one year of course work), and a final oral examination after completion of the doctoral dissertation. At least thirty credits must be completed in courses numbered 700 and above including CHE 820 or 840. Students should consult page 27 for Graduate School regulations governing doctoral study.

## GRADUATE COURSES (CHE)

*The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.*

### 503 Ethical and Legal Constraints in Chemical Engineering. Cr. 2

Prereq: upper division or graduate standing. Limitations placed on chemical process design and operation by non-technical and non-economic parameters, including ethical, environmental, safety, and legal considerations. (Y)

### 504 (ECE 504) Numerical Methods for Engineers. Cr. 4

Prereq: MAT 235, CHE 304. Student computer account required. Solution of ordinary and partial differential equations of engineering by modern numerical methods, including digital computer programming. (B)

### 505 Design of Chemical Process Experiments I. Cr. 3

Prereq: I E 322, CHE 304, CHE 380, 340. Application of modern statistical experimental design methods to improve effectiveness and success in experimental projects, in chemical industry manufacturing, and research and design. (F)

### 509 (MSE 509) Physical Ceramics. Cr. 3

Prereq: MSE 230. 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. (B)

### 520 Transport Phenomena. Cr. 3

Prereq: CHE 380, 340. Unified principles of heat mass and momentum transport with application to applied science and engineering problem areas. (F)

### 524 (M E 524) Industrial Combustion Systems. Cr. 4

Prereq: M E 420 or CHE 320. Introduction to operating principles and design features of modern boilers, furnaces, gas turbine combustors and advanced continuous combustion systems. Application of basic thermodynamic and heat transfer calculations to testing and design. (B)

### 532 (OE H 765) Chemistry of Industrial Processes. 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)

### 535 Polymer Science. (MSE 535). Cr. 3

Prereq. or coreq: MAT 204. Material fee as indicated in *Schedule of Classes*. 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. (Y)

### 536 Polymer Processing. (MSE 536). Cr. 3

Prereq: CHE 320 or equivalent undergraduate fluid mechanics. Material fee as indicated in *Schedule of Classes*. A detailed analysis of polymer processing. Rheology of polymers, flow in tubes, calendaring, extrusion, coating and injection molding. (Y)

### 551 Introduction to Hazardous Waste Management. Cr. 2

Prereq: senior standing in engineering, biological or physical sciences; MAT 203, CHM 224, PHY 214, CHM 542 or CHE 280. Solid waste, site selection, thermal processing, biological waste disposal, hazardous chemical spill cleanup, and transportation. (T)

### 552 (OE H 651) Air Sampling and Analysis. 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. (F)

### 553 Thermal Processing of Hazardous Waste. Cr. 2

Prereq: CHE 551. Thermal processing technologies, such as combustion fundamentals, thermal incineration equipment and hardware, chemical reaction and recovery systems for hazardous waste control. (Y)

### 554 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)

### 555 (OE H 642) Environmental Science I: Introduction to Air Pollution. Cr. 3

Prereq: CHE 280, MAT 235. 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)

- 556 Transportation and Emergency Spill Response. Cr. 2-3**  
Prereq: CHE 551. Open for two credits only to students enrolled through HMCRI or other short course programs. Overview of maritime, rail, and tank truck transportation methodology, planning, and regulations. An analysis of procedures for spill cleanup in watercourse, plants and laboratories. (W)
- 557 Health Aspects of Hazardous Materials Management. Cr. 1**  
Fundamental concepts of environmental health and safety, applied to the research and development laboratory; recognition and control of chemical, physical and biological agents. (F)
- 558 Land Disposal of Hazardous Waste. (C E 558). Cr. 2**  
Prereq: CHE 551. Industrial landfill, biological methods of disposal, land disposal techniques, ocean disposal techniques, disposal of flue gas cleaning wastes. (Y)
- 559 Biological Waste Disposal. (C E 559). Cr. 2**  
Prereq: CHE 551. Biological treatment of industrial wastes, including unit operations, solids handling and activated carbon processes. (S)
- 560 (MSE 560) Composite Materials. Cr. 3**  
Coreq: CHE 535. 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. (B)
- 577 Computer-Aided Design and Graphics Techniques in Chemical Engineering. Cr. 3**  
Prereq: CHE 304, 330, 380. 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)
- 580 Computer-aided Design of Separation Processes. Cr. 3**  
Prereq: CHE 304 and 380. Application of computer programs to design chemical process operations. Problems include stagewise and continuous operations. (B)
- 585 Vacuum Technology. (MSE 585). Cr. 2**  
Prereq: PHY 218. Vacuum techniques, flow of gases through tubes and orifices, operation of pumps and manometers, vacuum materials, vacuum systems. (B)
- 586 Elements of Nuclear Engineering. (MSE 586). Cr. 3**  
Prereq: senior standing. Material fee as indicated in *Schedule of Classes*. An introduction to nuclear energy. The relevant aspects of nuclear physics, radioactivity, shielding, heat transfer and fluid flow are reviewed and applied to the design of large thermal reactors. Biological hazard, waste disposal and developments such as fast breeder are discussed. (B)
- 595 Special Topics in Chemical Engineering I. Cr. 1-4**  
Prereq: CHE 380, 340. Maximum of six credits of 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)
- 613 (NFS 613) Food Preservation. (NFS 713). Cr. 4**  
Prereq: senior standing. Material fee as indicated in *Schedule of Classes*. Basic food preservation methods and the underlying physical, chemical, bacteriological and organoleptic properties of foods to be preserved. (W)
- 645 Biochemical Engineering. Cr. 2**  
Prereq: CHE 340, 380. 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)
- 652 Chemodynamics: Environmental Transport. Cr. 2**  
Prereq: CHE 330, 340, 380. Application of chemical engineering fundamentals and transport phenomena to study the movement and fate of chemicals within the environment (air, water, soil). (B)
- 653 Waste Minimization. Cr. 2**  
Prereq: CHE 420 or 697; or 558 and 559 and 553. 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. Chemical Engineering Design elective. (Y)
- 655 Fundamentals of Environmental Auditing. Cr. 2**  
Prereq: CHE 554, 651. Introduction to the fundamentals and techniques in environmental auditing with special emphasis on auditing protocols, verification of findings and interpretation. (Y)
- 656 Applications of Environmental Auditing. Cr. 2**  
Prereq: CHE 655. Application of the fundamentals of the environmental auditing process to examples such as air and water laws, solid and hazardous waste laws, hazardous materials management laws, and health and safety laws. Skills and tools necessary to audit for compliance illustrated through class studies. (Y)
- 657 Safety in the Chemical Process Industry. Cr. 3**  
Prereq: CHE 340, 380. Fundamental and practical experience necessary for safe operation of a chemical process plant. Actual industrial case studies conducted under industry supervision. (W)
- 658 Principles of Environmental Sampling. Cr. 2**  
Prereq: I E 322, CHE 655. Introduction to environmental sampling with emphasis on statistical design, quality control and quality assurance, and interpretation of data. (Y)
- 659 Bioremediation of Hazardous Waste. Cr. 3**  
Prereq: CHE 304, 340, and 380. 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)
- 660 Air Pollution Control Management. Cr. 2**  
Prereq: CHE 551 or 555. 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)
- 661 Risk Assessment. Cr. 3**  
Prereq: MAT 203, I E 322, and CHM 224. Introduction to risk assessment in environmental hazard management with emphasis on the chemical industry, including hazard identification, exposure analysis and risk characterization. (Y)
- 662 Environmental Auditing: Real Estate Transactions. Cr. 2**  
Prereq: CHE 655. Elements that should be included in a professionally-accepted real estate transaction audit; sources and procedures for audit. (Y)
- 665 Electrochemical Engineering. (MSE 665). Cr. 2**  
Prereq: CHM 544, CHM 380 and CHE 340. Material fee as indicated in *Schedule of Classes*. Advanced study of the design and operation of industrial electrochemical processes, including the treatment of problems involving simultaneous mass-transfer, heat-transfer and chemical reaction. (B)
- 670 Fundamentals of Fractals. Cr. 3**  
Prereq: MAT 235. Thorough introduction to fundamentals of fractal theory; application of fractal geometry to solve engineering and materials problems. (B)

**685 (MSE 685) 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)

**687 Elevated Temperature Corrosion. (MSE 687). Cr. 3**

Prereq: senior standing in engineering. Advanced study in the theories of high temperature corrosion and applications. Analysis of industrial problems and case histories. Classified as CHE design elective. (B)

**697 Strategy of Process Engineering. Cr. 2**

Coreq: CHE 420. Economic evaluation of chemical, metallurgical and petroleum processes and methods for determining the optimal conditions for their operation. Classified as a CHE Design elective. (F)

**698 Technical Aspects of Marketing in the Chemical Process Industries. Cr. 2**

Prereq: senior or graduate standing. Review of strategic marketing concepts for the chemical process industries; emphasis on technical issues related to strategies. (Y)

**710 Advanced Engineering Mathematics. (MSE 710). Cr. 3**

Prereq: MAT 204 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)

**720 Advanced Transport Phenomena I. Cr. 4**

Prereq: CHE 710 and 520, or equiv. Basic properties of heat, mass and momentum transfer systems; fundamental equations, formulation and solution of boundary value problems. (W)

**724 (M E 724) Processes in Continuous Combustion Systems. Cr. 4**

Prereq: ME 524 or CHE 524. 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)

**726 Waste Management Internship. Cr. 1-3**

Prereq: CHE 551, 556. 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)

**727 Hazardous Waste Laboratory. Cr. 2**

Prereq: CHE 551, 556. Material fee as indicated in *Schedule of Classes*. Demonstration of laboratory experiments in analysis and disposal techniques concerned with hazardous waste control. (Y)

**730 Advanced Thermodynamics. (MSE 730). Cr. 3**

Prereq: CHE 330, MSE 330 or CHM 542. Advanced presentation of the principles of thermodynamics; application to open systems, phase diagrams and chemical equilibria. (F)

**733 Polymer Rheology. (MSE 733). Cr. 3**

Prereq: CHE 520 or 720 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)

**735 Polymer Solutions. (MSE 735). Cr. 3**

Prereq: CHE 535. 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)

**738 Polymer Kinetics. (MSE 738). Cr. 3**

Prereq: CHE 535. Polymerization kinetics of various types of reactions, including emulsion polymerization and co-polymerization; polymer reactor design; batch and continuous stirred tank reactors;

classical methods for determining reaction rates; developing techniques and spectroscopic methods. (B)

**740 Advanced Kinetics and Reactor Design. Cr. 4**

Prereq: CHE 280, 340. Material fee as indicated in *Schedule of Classes*. 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. (W)

**751 Public Issues of Hazardous Waste. Cr. 2**

Prereq: senior standing. No credit in engineering graduate degree programs. Discussion and analysis of current issues related to hazardous waste management. Discussions led by outside experts. (Y)

**754 Law and Administration Issues in Hazardous Waste Management II. Cr. 2**

Prereq: CHE 551 and 554. Advanced management guidelines for hazardous waste control with case studies. (Y)

**790 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)

**795 Special Topics in Chemical Engineering II. Cr. 1-4**

Prereq: CHE 380, 340. 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)

**820 Advanced Transport Phenomena II. Cr. 3**

Prereq: CHE 720. Coupled transport phenomena in engineering systems; simultaneous fluid flow with heat and mass transfer, transport in multiphase systems and review of correlation methods. (I)

**840 Advanced Kinetics. Cr. 3**

Prereq: CHE 740. 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)

**845 Advanced Plant Design Concepts. Cr. 2**

Prereq: CHE 420, 697. Newest techniques in design of plants: profit analysis, productivity, cost estimation, new methodologies. (I,W)

**850 Graduate Engineering Internship. Cr. 0**

Offered for S and U grades only. Engineering practice under supervision in cooperative education program. (T)

**851 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)

**896 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)

**897 Chemical Engineering Graduate Seminar. Cr. 1**

Prereq: CHE 740 and 720. 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)

**899 Master's Thesis Research and Direction. Cr. 1-10 (Max. 10)**

Prereq: consent of adviser. (T)

**998 Proposals, Grants and Contracts. Cr. 1**

Open only to Ph.D. applicants. Writing of a brief proposal outside student's dissertation area; defense and refereeing of proposals. (I)

**999 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)

# CIVIL and ENVIRONMENTAL ENGINEERING

Office: 2172 Engineering Building; 577-3789

Chairperson: Mumtaz A. Usmen

## Professors

F. W. Beaufait, L.T. Cheney (Emeritus), T.K. Datta, S. Khasnabis, D.S. Ling (Emeritus), J. M. Paulson (Emeritus), M. A. Usmen

## Associate Professors

H. M. Aktan, T. T. Arciszewski, R. A. Dusseau, T. M. Heidtke, T. Kagawa, C. J. Miller

## 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 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, and transportation.

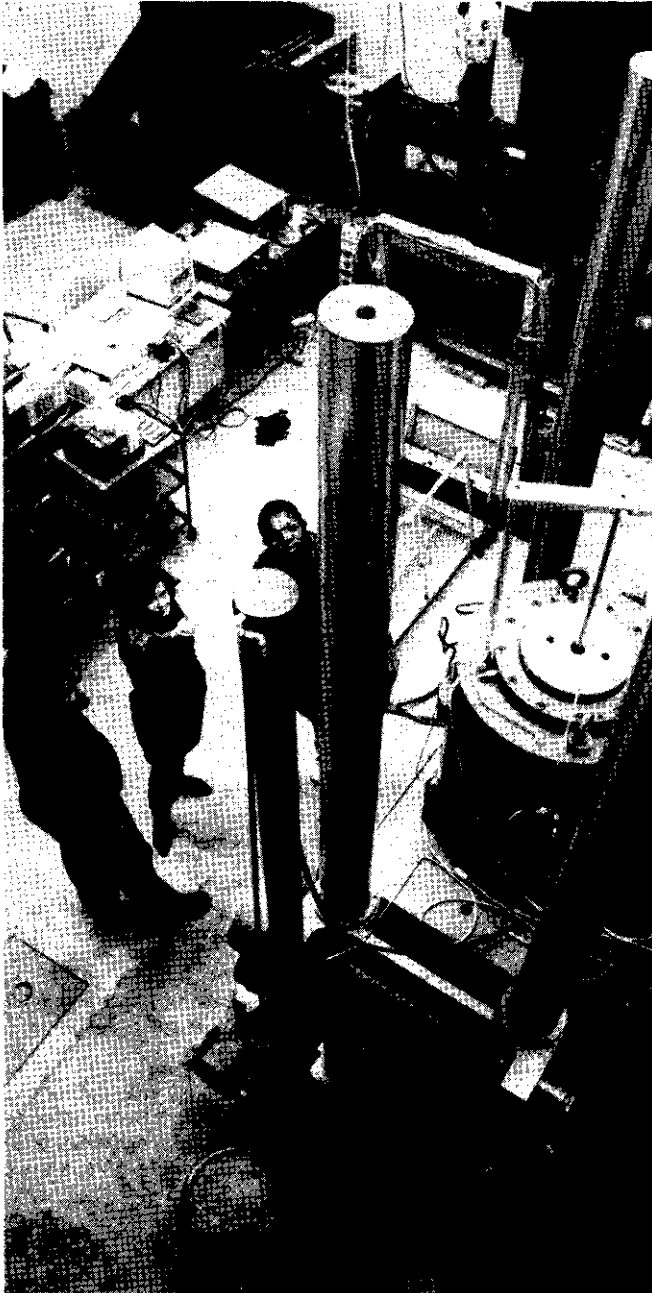
## Master of Science in Civil Engineering

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 14. 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 engineering background be admitted to the civil engineering graduate program, but in such cases significant undergraduate prerequisite course work will be necessary.

2. The student must have an overall honor point average (h.p.a.) of 2.8 for regular admission. Qualified or probationary admission may be granted to students with an h.p.a. marginally below 2.8; 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 twelve credits must be taken in the major (C E courses), of which six credits must be earned in courses numbered 700–899, and six credits will constitute a core to be selected from one of the following:

Environmental Engineering .....	C E 613, 615, 619, 710, 720, 722, and 726.
Geotechnical Engineering .....	C E 551, 552, 652, 751, 752, and 753.
Structures .....	C E 535, 633, 637, 641, and 730.
Transportation .....	C E 760, 762, 763, 764, and 765.

Students must maintain a grade of 'B' or better in all core courses. The remaining credits for the degree must include six credits of cognates; see page . 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* with the Engineering Graduate Office. 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 20–30 and 111–113, 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 14. For admission to the Ph.D. program, the student's overall honor point average must be 3.0 or better, and 3.2 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 3.3. Fellowship and assistantship support is available for qualified graduate students; see page 32.

**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 which should be developed in consultation with an adviser. Additionally, students should consult page 27 for Graduate School regulations governing doctoral study.

## GRADUATE COURSES (C E)

*The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463*

### 522 Sanitary Chemistry. Cr. 3

Prereq: C E 421. Material fee as indicated in *Schedule of Classes*. Fundamentals of chemical principles and their application to unit operations and processes encountered in the treatment of water and waste water. (B)

### 528 Sanitary Engineering Design. Cr. 3

Prereq: C E 422. Material fee as indicated in *Schedule of Classes*. Design principles of water and waste water treatment plants. Plant layouts and the design of elements of the plant. (W)

### 535 Introduction to Structural Dynamics. Cr. 3

Prereq: M E 340, C E 431. Dynamic properties of structures, nature of dynamic loads, response of structures to dynamic loading, design codes for dynamic loads. (W)

### 551 Foundation Engineering. Cr. 3

Prereq: C E 451. 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)

### 552 Earth Retaining Systems. Cr. 3

Prereq: C E 551. Application of soil mechanics principles to the analysis, design and construction of unbraced and braced excavations, bulkheads, retaining walls and earth slopes. (B)

### 558 (CHE 558) Land Disposal of Hazardous Waste. Cr. 2

Prereq: CHE 551. Industrial landfill, biological methods of disposal, land disposal techniques, ocean disposal techniques, disposal of flue gas cleaning wastes. (Y)

### 559 (CHE 559) Biological Waste Disposal. Cr. 2

Prereq: CHE 551. Biological treatment of industrial wastes, including unit operations, solids handling and activated carbon processes. (S)

### 581 Legal Aspects of Engineering Problems. Cr. 3

Open only to seniors and graduate students. Material fee as indicated in *Schedule of Classes*. Business of contracting, construction, liabilities of owner, architect, engineer and contractor. Rights in land, boundaries and foundations. Case studies. (F)

### 595 Special Topics in Civil Engineering I. Cr. 1–4(Max. 6)

Prereq: consent of chairperson. Maximum four credits in Special Topics in any one degree program. Student computer account required. Topics to be announced in *Schedule of Classes*. (I)

### 601 Construction Organization and Management. Cr. 3

Prereq: C E 401 or consent of instructor. Material fee as indicated in *Schedule of Classes*. 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. (W)

### 602 Construction Safety. Cr. 3

Prereq: C E 401 or I E 556. Safety problems in construction industry and their technical and managerial solutions. Accident and hazard analysis and control techniques; safety program design and implementation. (Y)

**613 Engineering Hydraulics. Cr. 3**

Prereq: C E 325 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)

**615 Hydrology. Cr. 3**

Prereq: C E 613. 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)

**619 Ground Water. Cr. 4**

Prereq: C E 325. 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)

**633 Advanced Structural Analysis I. Cr. 3**

Prereq: C E 431. 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)

**634 Bridge Analysis and Design. Cr. 3**

Prereq: C E 435. 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)

**637 Reinforced Concrete II. Cr. 3**

Prereq: C E 436. Theory and design of two-way slabs, footings, retaining walls, shear walls, and composite beams using ultimate strength design. (W)

**638 Prestressed Concrete. Cr. 3**

Prereq: C E 436. Theory and design of pretensioned and post-tensioned concrete members. (F)

**639 Plastic Analysis and Design of Steel Structures. Cr. 3**

Prereq: C E 431, 435. Structural properties of ductile and strain hardening materials, moment rotation characteristics of structural members, equilibrium methods of analysis, mechanism methods, upper and lower bound theorems, design of beams and frames, limitations of the theory. (B)

**641 Structural Steel Design II. Cr. 3**

Prereq: C E 435. 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)

**652 Earth Dams. Cr. 3**

Prereq: C E 552. 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)

**666 Pavement Management Systems: Principles and Practices Cr. 3**

Prereq: C E 460, 464. Principles and practices used in pavement management systems, including pavement serviceability, pavement design, priority programming. (Y)

**701 Civil Engineering Decision Processes. Cr. 3**

Prereq: I E 322. Student computer account required. Application of probability, statistics and decision processes to civil engineering problems. (B)

**710 Water Resources Systems Analysis and Economics. Cr. 4**

Prereq: C E 422 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)

**719 Advanced Groundwater. Cr. 3**

Prereq: C E 619. Analytical and numerical models of groundwater flow and contaminant transport. Advanced theory of groundwater hydraulics. (Y)

**720 Environmental Engineering Operations and Processes. Cr. 4**

Prereq: C E 422. Material fee as indicated in *Schedule of Classes*. 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. (B)

**722 Industrial Waste Treatment. Cr. 4**

Prereq: C E 720. Material fee as indicated in *Schedule of Classes*. 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. (B)

**726 Stream Sanitation. Cr. 3**

Prereq: C E 525 and 721. 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)

**730 Structural Mechanics I. Cr. 3**

Prereq. or coreq: C E 633. Student computer account required. Theory of bending and torsion of bars, beams on elastic foundations. Introduction to theory of thin plates. (F)

**731 Structural Mechanics II. Cr. 3**

Prereq: C E 730. Student computer account required. Continuation of C E 730. Theory of thin plates, stability of bars and thin walled members, plates and shells, time effects on stability of concrete structures. (I)

**733 Theory of Inelastic Structures. Cr. 3**

Prereq: C E 730. Student computer account required. General inelastic uniaxial stress-strain relations; theory of inelastic beams; analysis and design of inelastic columns and beam columns; theory of inelastic torsion of prismatic bars. (I)

**734 Analysis and Design of Shell Structures. Cr. 4**

Prereq: C E 637 and 730 or consent of instructor. Student computer account required. Analysis and design of folded plate structures and structures composed of shells of single and double curvature. (I)

**735 Behavior of Structures Under Dynamic Loads. Cr. 3**

Prereq: C E 535 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)

**736 Random Vibration of Structures. Cr. 3**

Prereq: C E 535 or consent of instructor. Student computer account required. Random vibration of structural systems by means of the correlation and spectral theories of random processes. Experimental techniques of measurement of correlation quantities. (B)

**737 Finite Methods of Structural Analysis. Cr. 3**

Prereq: C E 633 and 730 or consent of instructor. Student computer account required. Matrix analysis, force and displacement methods; finite element approach with applications; finite difference analysis and applications. (W)

**740 Optimization of Structural Designs. Cr. 3**

Prereq: C E 401. Student computer account required. Advanced topics in structural optimization including dynamic programming and its structural applications. Form optimization; heuristic methods. (B)



**751 Soil-Structure Interaction. Cr. 3**

Prereq: C E 552. 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)

**752 Vibrations in Geotechnical Engineering. Cr. 3**

Prereq: C E 551 or consent of instructor. Student computer account required. Vibration isolation; dynamic behavior of soils; elastic waves in soil layers; foundation vibration; earthquake engineering problems. (B)

**753 Soil Behavior. Cr. 3**

Prereq: C E 551 or consent of instructor. Material fee as indicated in *Schedule of Classes*. Investigation of the theories of shear strength and deformation characteristics of saturated and partly saturated soils. (B)

**754 Soil Plasticity. Cr. 3**

Prereq: C E 551, 552, 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)

**760 Highway Safety Analysis. Cr. 3**

Prereq: C E 464. Material fee as indicated in *Schedule of Classes*. Safety aspects of highways; emphasis on design, implementation and evaluation of highway safety measures. (B)

**762 Traffic Engineering Control and Operation. Cr. 3**

Prereq: C E 761. Material fee as indicated in *Schedule of Classes*. 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. (Y)

**763 Urban Transportation Planning. Cr. 3**

Prereq: C E 460. Material fee as indicated in *Schedule of Classes*. 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. (F)

**764 Economic Analysis In Transportation Systems Planning. (I E 764). Cr. 3**

Prereq: C E 485 or I E 587. Material fee as indicated in *Schedule of Classes*. 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. (Y)

**765 Mass Transportation Systems. Cr. 3**

Prereq: C E 763. 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)

**766 Highway Risk Management System. Cr. 3**

Prereq: C E 760. Methods and procedures in highway risk management system analysis; implementation and evaluation. (Y)

**790 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)

**795 Special Topics in Civil Engineering II. Cr. 1-4**

Prereq: consent of instructor. Maximum four credits in Special Topics in any one degree program. Student computer account required. A consideration of special subject matter in civil engineering. Topics to be announced in *Schedule of Classes*. (I)

**796 Research. Cr. 1-4(Max. 6)**

Prereq: consent of adviser and chairperson. (T)

**835 Introduction to Earthquake Engineering. Cr. 3**

Prereq: C E 735. Dynamic properties of structures, characteristics of earthquake behavior of structures during earthquake, analytical and experimental evaluation of seismic worthiness, principals of earthquake design. Earthquake resistance design code (UBC, SEAOC and ATC recommendations). (B)

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

Prereq: consent of adviser. (T)

**999 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: Michael P. Polis  
Associate Chairperson: Franklin Westervelt

## Professors

R. Arrathoon, R. D. Barnard, F. E. Brammer (Emeritus), A. Lewandowski, J. Meisel, A. W. Olbrot, M. P. Polis, M. B. Scherba (Emeritus), M. P. Shaw, D. J. Silversmith, H. Singh, Y. Wallach, F. Westervelt

## Associate Professors

J. S. Bedi, R. F. Erlandson, M. Hassoun, S. Mahmud, V. Mitin, P. Siy, J. R. Woodyard

## Assistant Professors

G. Auner, F. Lin, T. W. Lin, H. Mortazavian, J. Sun, L. Y. Wang, Y. Zhao

## Adjunct Professor

M. A. Rahimi

## Adjunct Associate Professors

T. E. Anderson, R. Pryor, D. R. Schneider, M. Zohdy

## Adjunct Assistant Professors

P. M. Nefcy, R. A. Spitzer

## 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 concurrent 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 14. In addition to University and College requirements (see page 112) for regular admission, students must have an honor point average of 3.0 ('B'=3.0) or above for the last two years of undergraduate course work from an engineering program accredited by the Accreditation Board for Engineering and Technology (ABET).

Students from a wide variety of undergraduate programs not specifically related to this discipline can be admitted into the master's program by taking 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

Computer ..... ECE 562, 568, 703, and 761 or 766

### Master of Science in Electrical Engineering

Biomedical Systems ..... ECE 510, 618, 703, and 710  
Communications and Circuits ..... ECE 531, 570, 577, 703, and 770  
Systems and Control ..... ECE 547, 703, 744 and 747  
Electronics ..... ECE 555, 655, 703, and 753  
Power Systems ..... ECE 541, 543, 547, 703, and 747  
Optical Engineering ..... ECE 587, 785, 703 and 885

Additional courses will be chosen upon consultation with an adviser. Six credits of cognate study are recommended (see page 117) and a Plan of Work must be filed by the time ten credits have been earned. 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 20-30 and 111-113, respectively.

## Grades and Probation

An overall 'B' average, as well as a 'B' average in all ECE courses (3.0 h.p.a.), is required for graduation. *Core courses in which a grade of 'C' has been received must be repeated.* No more than two courses may be repeated in the master's program. A student is put on probation if two 'C' grades are received or if his/her honor point average (h.p.a.) falls below 3.0. Students on probation must restore their cumulative h.p.a. to 3.0 or above within the next eight credits attempted; failure to do so will result in immediate termination from the program. Any grade below 'C' may result in termination from the program; receipt of more than two 'C' grades will result in termination.

## 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 14. Applicants must have an overall honor point average of 3.6 in a Master of Science degree program, however, 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 700 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.) A final examination is given with completion of the dissertation. Students should consult page 27 for Graduate School regulations governing doctoral study.

## GRADUATE COURSES (ECE)

*The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.*

### 502 (CSC 662) Matrix Computation I. (Lct: 4). Cr. 4

Prereq: CHE 304. Student computer account required. 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)

### 504 Numerical Methods for Engineers. (CHE 504). (Lct: 4). Cr. 4

Prereq: MAT 204 and CHE 304. Student computer account required. Solution of ordinary and partial differential equations of engineering by modern numerical methods, including digital computation aspects. (B)

### 510 (M E 510) Engineering Physiology. (I E 510). (Lct: 4). Cr. 4

Prereq: ECE 433 or ME 340. 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)

### 512 Artificial Neural Systems I. Cr. 4

Prereq: ECE 433 or M E 500. 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)

### 516 (M E 516) Biomechanics I. (I E 516). (Lct: 4). Cr. 4

Prereq: ME 510 or ECE 510 or I E 510; ME 240. Mechanics applied to biological systems. Static and dynamic analysis of bone, muscle and joints. Impact biomechanics, including experimental simulation of automotive collision, instrumentation and data analysis. (I)

### 531 Active Filters. (Lct: 4). Cr. 4

Prereq: ECE 433, 434. 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)

### 536 Computer-Aided System Analysis and Design. (Lct: 4). Cr. 4

Prereq: ECE 433, 434. 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)

### 541 Power Electronics and Control. (Lct: 3). Cr. 4

Prereq: ECE 433. 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)

### 542 Electromechanical Energy Conversion. (Lct: 4). Cr. 4

Prereq: ECE 433 and 480. 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)

### 543 Electric Energy Systems Engineering. (Lct: 4). Cr. 4

Prereq: ECE 433. 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)

### 544 Computer-Controlled Systems. Cr. 4

Prereq: ECE 447 or CHE 460 or M E 440. 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)

### 546 Stochastic Processes in Engineering. Cr. 4

Prereq: I E 322; and ECE 433 or M E 500. 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)

### 547 Control Systems II. (Lct: 4). Cr. 4

Prereq: ECE 447; prereq. or coreq: 448. 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)

### 548 Power Electronics Laboratory. Cr. 2

Prereq. or coreq: ECE 541. Material fee as indicated in *Schedule of Classes*. 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. (Y)

### 555 Solid-State Electronics I. (Lct: 4). Cr. 4

Prereq: ECE 457, 480. 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)

**557 Electronic Digital Circuit Analysis and Design. (Lct: 4). Cr. 4**

Prereq: ECE 361 and 457. Introduction to electronic digital devices and circuits including analysis of various logic gates using several techniques of implementation such as transistor-transistor logic (TTL), emitter-coupled logic (ECL), encoding/decoding circuits, diode matrices, counters, clocks, pulse distributors. Logic and storage circuits, switching speeds and other considerations involved in the design of digital circuits. (Y)

**560 Design of Computer Languages. (Lct: 4). Cr. 4**

Prereq: ECE 460, 468. Student computer account required. Statement structure, algorithmic structure, as well as list processing, string and array manipulation; and special topics in programming languages. (Y)

**562 Mini- and Microcomputers. (CSC 537). (Lct: 4). Cr. 4**

Prereq: ECE 460 and 468. 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)

**563 Microcomputer Laboratory. (Lct: 1; Lab: 3). Cr. 2**

Prereq: ECE 434, 460. Material fee as indicated in *Schedule of Classes*. 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. (T)

**564 (CSC 442) Computer Operating Systems. (Lct: 4). Cr. 4**

Prereq: CSC 370 and CSC 441 or ECE 468. Student computer account required. Hardware architecture for operating systems: privileged instructions, protection, interrupts, input and output via channel programming, buffering, services provided by operating systems; batch, multiprogramming, and time-sharing systems; memory management including virtual memory; concurrent processing; deadlocks, mutual exclusion and synchronization; job and processor scheduling; device control and virtual devices. (Y)

**568 Switching Circuits. (Lct: 4). Cr. 4**

Prereq: ECE 468. 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)

**570 Analog and Digital Communication Circuits. (Lct: 4). Cr. 4**

Prereq: ECE 457 and 470. Student computer account required. Amplitude, frequency, pulse modulation and digital modulation. Detection, operational amplifiers; introduction to linear integrated circuits. Digital modulation. (I)

**573 Communications Laboratory. (Lab: 2). Cr. 2**

Prereq: ECE 470; coreq: 570. Material fee as indicated in *Schedule of Classes*. Analog and digital modulation techniques, pulse code modulation, delta modulation, FSK, PSK and ASK, data communication, signal processing. (Y)

**577 Digital Signal Processing. (Lct: 4). Cr. 4**

Prereq: ECE 470. Student computer account required. Analysis of discrete signals and systems. Applications to digital filtering, active filters, digital communication and encoding. (Y)

**587 Introduction to Lasers. (Lct: 4). Cr. 4**

Prereq: ECE 457, 480. Fundamental principles of laser operation. Detailed description of various laser systems. An introduction to fiber and integrated optics; particular emphasis on modern communication systems. (Y)

**590 Directed Study. (Ind: 1). Cr. 1-4 (Max. 4)**

Prereq: admission to MSEE program, approval of outline for proposed study by adviser and chairperson prior to registration. Supervised study and instruction in the field selected by the student. (T)

**595 Special Topics in Electrical and Computer Engineering I. (Lct: 1). Cr. 1-4**

Prereq: 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)

**618 (M E 618) Bioinstrumentation. (I E 618). (Lct: 4). Cr. 4**

Prereq: ECE 510. Engineering principles of physiological measurements, signal conditioning equipment, amplifiers, recorders and transducers. Recent advances in instrumentation. (I)

**655 Solid State Electronics II. (Lct: 4). Cr. 4**

Prereq: ECE 555. Advanced concepts on the electronic properties and fabrication of solid state devices. Semiconductor surface devices and their technology. Charge-coupled devices and integrated circuit configurations. Solid state devices in the microwave region. Avalanche diodes. Magnetism and magnetic bubbles. Solar cells and optoelectronic devices. (Y)

**660 Engineering Software Design. (Lct: 4). Cr. 4**

Prereq: CSC 370 or ECE 562. 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)

**664 Database Machines. (Lct: 4). Cr. 4**

Prereq: ECE 562. 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)

**666 Design of Digital Systems. (Lct: 4). Cr. 4**

Prereq: ECE 461, 562. 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)

**703 Mathematical Methods in Engineering I. Cr. 4**

Prereq: ECE 433. 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, non-linear equations, and modeling system identification. (Y)

**704 Mathematical Methods In Engineering II. (Lct: 4). Cr. 4**

Prereq: ECE 703. Compact and dual spaces. Projection-operator and Lagrange-complement techniques. Advanced approximation, estimation, and optimization theory. Applications to system, control, and signal theory. (Y)

**710 (M E 710) Mathematical Modeling in Bioengineering. (I E 710). (Lct: 4). Cr. 4**

Prereq: M E 510 or ECE 510. 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)

**712 Artificial Neural Systems II. Cr. 4**

Prereq: ECE 512. 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)

- 716 (M E 716) Biomechanics II. (I E 716). (Lct: 4). Cr. 4**  
Prereq: M E 516. 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. (Y)
- 743 Control of Discrete Event Systems. Cr. 4**  
Prereq: ECE 547 or M E 555. 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)
- 744 Dynamic Systems and Control. (Lct: 4). Cr. 4**  
Prereq: ECE 644. 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)
- 745 System Identification and Adaptive Control. Cr. 4**  
Prereq: ECE 547 or 747 or M E 555. 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)
- 746 Stochastic Control. Cr. 4**  
Prereq: ECE 546; and 547 or M E 555. Elements of stochastic processes; properties of linear systems with stochastic inputs; control of Markov chain model; dynamic programming with partial observation; the linear quadratic Gaussain (LOG) problem and separation theorem; prediction and filtering theory; the Kalman filter and the Raccati-equation. (T)
- 747 Signal Analysis and Digital Control. (Lct: 4). Cr. 4**  
Prereq: ECE 547. Material fee as indicated in *Schedule of Classes*. Introduction to generalized functions and Fourier transforms. Laplace and Z-transform analysis, sampling theory, signal processing, sampled-data systems, and system simulation. Robust-controller design for asymptotic reference tracking and disturbance rejection. System modeling and identification. (Y)
- 748 Advanced Control System Design. Cr. 4**  
Prereq: ECE 547 or M E 555. 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)
- 753 Introduction to VLSI Systems. Cr. 4**  
Prereq: ECE 555 or 655. 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)
- 755 Advanced Solid State Electronics I. (Lct: 4). Cr. 4**  
Prereq: ECE 555 or 655. 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)
- 760 (CSC 640) Engineering Design of Operating Systems. Cr. 4**  
Prereq: CSC 442 or ECE 666. Student computer account required. Design and implementation of operating systems for digital computers. Sequential and concurrent processes, processor and store management, scheduling algorithms and resource protection. (I)
- 761 Parallel Processing Systems. (Lct: 4). Cr. 4**  
Prereq: ECE 560, 666. Review of parallel processing systems. Problems in programming parallel systems. Languages and features required. Examples of solving numerical problems in parallel. (Y)
- 762 Real-Time Languages. Cr. 4**  
Prereq: ECE 660. 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)
- 766 Parallel Processing Hardware. (Lct: 4). Cr. 4**  
Prereq: ECE 666. 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)
- 767 Pattern Recognition. (Lct: 4). Cr. 4**  
Prereq: ECE 703. Student computer account required. Statistical methods in pattern recognition. Estimation, feature extraction and classification. Applications of pattern recognition techniques. (Y)
- 768 Robotics and Machine Intelligence. Cr. 4**  
Prereq: ECE 703. Statistical methods in pattern recognition. Estimation, feature extraction and classification. Applications of pattern recognition techniques. (Y)
- 770 Statistical Communication Theory. (Lct: 4). Cr. 4**  
Prereq: ECE 570. Decision theory, binary decisions with single and multiple observations, signals in additive Gaussian noise, sequential decision theory, estimation theory, Kalman filtering. (Y)
- 783 Nonlinear Optics. Cr. 4**  
Prereq: ECE 555, 587. 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)
- 785 Fiber and Integrated Optics. Cr. 4**  
Prereq: ECE 587. 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)
- 787 Optical Information Processing. Cr. 4**  
Prereq: ECE 587. 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)
- 790 Directed Study. (Ind: 1). Cr. 1-8(Max. 12)**  
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)
- 795 Special Topics in Electrical and Computer Engineering II. (Lct: 1). Cr. 1-4(Max. 12)**  
Prereq: 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)

**796 Research. Cr. 1-8 (Max. 8)**

Prereq: consent of adviser and chairperson. Design, investigation and experimental work on some phase of electrical and computer engineering. Written report required. (T)

**799 Master's Essay Direction. (Ind: 2). Cr. 2**

Prereq: consent of adviser. (T)

**812 Advanced Artificial Neural Systems. Cr. 4**

Prereq: ECE 712; coreq: 703. 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)

**855 Advanced Solid State Electronics II. (Lct: 4). Cr. 4**

Prereq: ECE 755. 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)

**885 Optical Computing. Cr. 4**

Prereq: ECE 785. Student computer account required. Discussion of spatial light modulators, including those based on magneto-optic, optical bistable, and charge coupled device (CCD) effects. Review of multiple-valued logic and threshold logic. Analysis of systolic processors and optical logic arrays. Discussion of optical symbolic computing and optical artificial intelligence. (I)

**899 Master's Thesis Research and Direction. (Ind: 1). Cr. 1-8(8 req.)**

Prereq: consent of graduate adviser. (T)

**997 Doctoral Seminar. Cr. 1-4(Max. 4)**

Prereq: consent of doctoral adviser. Coreq: ECE 999. (T)

**999 Doctoral Dissertation Research and Direction. (Ind: 1). Cr. 1-16(30 req.)**

Prereq: 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

Office: 3172 Engineering Building; 577-3821

Chairperson: Donald R. Falkenburg

## Professors

Donald R. Falkenburg, H. Allan Knappenberger, Frank E. Plonka, Vinod K. Sahney

## Associate Professors

Kenneth R. Chelst, Herbert G. Ludwig (Emeritus)

## Assistant Professors

Heng H. Chang, Olugbenga O. Mejabi, Gary S. Wasserman, Kai Yang

## Graduate Degrees

*MASTER OF SCIENCE in Industrial Engineering*

*MASTER OF SCIENCE in Manufacturing Engineering*

*MASTER OF SCIENCE in Operations Research*

*DOCTOR OF PHILOSOPHY with a major in Industrial Engineering*

*DOCTOR OF PHILOSOPHY with a major in Operations Research*

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 14. Applicants who have a baccalaureate degree in engineering from an institution accredited by the Accreditation Board for Engineering and Technology (ABET) and who have an undergraduate upper division honor point average of 2.8 are eligible for admission without further preparation. Applicants whose admission credentials do not include an undergraduate major in industrial engineering or preparation comparable to I E 621 and I E 631, 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 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 626, 642, 643, and 756. 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 .....	IE 638, 640, 641, 741, 742
Quality Engineering .....	IE 627, 724, 725, 727
Engineering Management .....	IE 732, 752, 756, 781, 782, 785

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.

If the thesis Option (Plan A) is selected, eight credits of research (I E 899) may be elected 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 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 14. Applicants who have a baccalaureate degree in engineering from an institution accredited by the Accreditation Board for Engineering and Technology (ABET) and who have an undergraduate upper division honor point average of 2.8 are eligible for admission.

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 335.

**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: MET 501, I E 631, and either I E 785 or I E 645; and at least twelve credits in one of the following areas of specialization:

Computer Integrated Manufacture .....	IE 638, 640, 641, 642, 643, 741, 742
Quality Engineering .....	IE 626, 627, 724, 725, 727
Manufacturing Equipment Design .....	ME 504, 553, 547, 555, 557, 756, 702

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 899) 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 with a Major in Operations Research

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14. 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 identical to that of the Master of Science in Industrial Engineering (see above) with the same core course and specialization requirements. Students lacking sufficient undergraduate preparation may be required to take I E 621 and 631, 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 20-30 and 111-113, respectively.

## Doctor of Philosophy Degrees with Majors in Industrial Engineering and Operations Research

**Admission** to these programs is contingent upon admission to the Graduate School; for requirements, see page 14. 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.

**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)

*The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.*

**510 (M E 510) Engineering Physiology. (ECE 510). Cr. 4**  
Prereq: ECE 430 or ME 340. 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)

**516 (M E 516) Biomechanics I. (ECE 516). Cr. 4**  
Prereq: ME 510 or ECE 510 or IE 510; ME 240. Mechanics applied to biological systems. Static and dynamic analysis of bone, muscle and joints. Impact biomechanics, including experimental simulation of automotive collision, instrumentation and data analysis. (I)

**518 (CSC 518) Introduction to Modelling and Simulation. Cr. 3**  
Prereq: CSC 203 or equiv. and MAT 202. Student computer account required. Introduction to main concepts: modelling objectives, system boundaries, model formalism, experimentation with models, simulation. Concentration on finite state, cellular space and simple continuous and discrete event models. (I)

**525 Engineering Data Analysis. Cr. 4**  
Prereq: IE 322. Student computer account required. Advanced concepts for the analysis of variability in engineering problems, multivariate distributions, hypothesis testing, non-parametric statistics, point and interval estimation, fitting straight lines, goodness of fit tests, contingency tables and introduction to the analysis of variance. (W)

**526 Principles of Quality Control. Cr. 4**  
Prereq: IE 322. 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)

**547 Industrial Automation. Cr. 3**  
Prereq: ECE 331, CSC 105. Integrating logic design, machine interfaces, PLCs and hydraulic and pneumatic systems for the design of hard-wired automation and computer-integrated manufacturing (CIM) systems. (Y)

**556 Operations Research I. Cr. 4**  
Prereq: IE 322, MAT 204. 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)

**618 (M E 618) Bioinstrumentation. (ECE 618). Cr. 4**  
Prereq: ECE 330, M E 510. Engineering principles of physiological measurements. Signal conditioning equipment, amplifiers, recorders and transducers. Recent advances. (I)

**621 Probability Models and Data Analysis. Cr. 4**  
Prereq: MAT 204. No credit after IE 525. Student computer account required. Analysis of variability in engineering decision making; data analysis, probabilistic models, expectation, joint distributions, confidence limits and hypothesis testing. (F)

**626 Reliability and Quality Control. Cr. 4**  
Prereq: IE 322. Student computer account required. 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)

**627 Engineering Experimental Design. Cr. 4**  
Prereq: IE 525 or 621. Student computer account required. 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)

**631 Production Systems I. Cr. 4**  
Prereq: IE 621. No credit after IE 431 or IE 433. Fundamental theories and concepts in the design and operation of production systems for manufacturing and service organization. (W)

**638 Material Handling Systems. Cr. 4**  
Prereq: IE 642. Principles of material handling systems. Material handling systems analysis and design. Interfacing material handling systems. Principles of robotics. Robotic applications in manufacturing. (Y)

**640 Expert Systems in Manufacturing. Cr. 4**  
Prereq: ME 345. 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)

**641 Manufacturing Dimensioning and Tolerancing. Cr. 4**  
Prereq: IE 322 or 621 and 631 or ME 345. Study of dimensioning and tolerancing in design and manufacturing, exploring statistical tolerance analysis for production and quality control. (Y)

**642 Computer Aided Manufacturing II. Cr. 4**  
Prereq: IE 441 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)

**643 Computer Simulation Methods. Cr. 4**  
Prereq: IE 525 or 621; 577 or 771 and computer programming experience. Student computer account required. 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)

**645 (M E 645) Advanced Manufacturing Processes and Methods. Cr. 4**  
Prereq: ME 345, CHE 304, 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)



**710 (M E 710) Mathematical Modeling in Bioengineering. (ECE 710). Cr. 4**

Prereq: I E 510. Mathematical models that simulate physiological or anatomical function. Models of the nervous and vascular systems, models for impact acceleration and current topics. (I)

**716 (M E 716) Biomechanics II. (ECE 716). Cr. 4**

Prereq: M E 516. Material fee as indicated in *Schedule of Classes*. 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. (Y)

**724 Reliability and Quality Assurance Systems. Cr. 4**

Prereq: I E 621. 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)

**725 Quality Engineering. Cr. 4**

Prereq: I E 627. 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)

**727 Reliability Estimation. Cr. 4**

Prereq: I E 626. 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)

**732 Production Systems II. Cr. 4**

Prereq: I E 531 or 631, 752 and 771. Student computer account required. Advanced concepts in the design and operations of production systems for manufacturing and service organizations. Deterministic and stochastic forecasting, inventory control, production control and scheduling models. (B)

**741 Computer Aided Process Planning. Cr. 4**

Prereq: I E 641, 642, experience in computer programming in high level language. Group technology (GT) data retrieval systems for automated process planning and the design of semi-generated process planning systems. (Y)

**742 Flexible Manufacturing Systems. Cr. 4**

Prereq: I E 638. Analysis and design of flexible manufacturing systems. FMS control and communication architecture, FMS material handling architecture. Flexibility analysis. Computer-integrated manufacturing (CIM). (Y)

**743 (CSC 719) Theory of Modelling and Simulation. Cr. 3**

Prereq: CSC 518 or CSC 519 or CSC 618. 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)

**752 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)

**756 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)

**764 (C E 764) Economic Analysis in Transportation Systems Planning. Cr. 3**

Prereq: I E 587 or C E 605. Material fee as indicated in *Schedule of Classes*. 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. (I)

**771 Stochastic Service Systems I. Cr. 4**

Prereq: I E 577 or 621. 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)

**781 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)

**782 Engineering Administration. Cr. 4**

Prereq: I E 781. Basic concepts of engineering management as a process of organizing, planning, controlling and activating. (F)

**785 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)

**790 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)

**795 Special Topics in Industrial Engineering II. Cr. 1-4**

Special subject matter in industrial engineering. Topics to be announced in *Schedule of Classes*. (I)

**796 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)

**799 Master's Essay Direction. Cr. 2**

Prereq: consent of adviser. (T)

**820 Advanced Topics in Reliability and Quality Control. Cr. 4**

Prereq: I E 726 or 727. An in-depth study of current literature in reliability and quality control research. (F)

**870 Advanced Topics in Stochastic Systems. Cr. 4**

Prereq: I E 771. An in-depth study of the current literature in stochastic systems design research. (I)

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

Prereq: consent of graduate adviser. (T)

**999 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)

# MATERIALS SCIENCE and ENGINEERING

Office: 1116 Engineering Bldg.; 577-3800

Chairperson: R. H. Kummeler

## Associate Professors

W.G. Madden, C. W. Manke, Jr., S. K. Putatunda

## Assistant Professor

J.E. Benci

## Adjunct Professors

J. de Vries, G. Cole, R. Gibson, E. Gulari, R. McCune, S. Newman, S. Ng,  
E. Rothe, M. Semchyshev

## Graduate Degrees

**MASTER OF SCIENCE** in Materials Science and Engineering

**DOCTOR OF PHILOSOPHY** with a Major in Materials Science  
and Engineering

Materials problems constitute an important area of research and development in the complex technology of our industrial society. Power generation by nuclear reactors or solar cells, lighter and more crash-worthy automobiles, electronic device miniaturization, and earth-orbiting satellites all depend on the development of new engineering materials or the improvement of well-tried ones. As a result, the profession of materials science has been revolutionized in recent years. Materials engineers must master the science that enables them to understand the behavior of materials, their mechanical, optical, thermal, electrical and chemical properties and the internal structure that determines these properties. They can then apply their knowledge to the synthesis and processing of materials into useful products or controlling and improving the properties themselves.

## Assistantships and Fellowships

Assistantships and fellowships are available to do research in the areas of: deformation and fracture of materials at elevated temperatures; effects of processing on the elevated temperature mechanical properties of materials; high resolution radiography of damage in monolithic and composite materials; transport properties and phase equilibria of supercritical fluid/polymer solutions; light scattering in polymeric media; polymer rheology; molecular dynamics and kinetic theory of polymeric liquids; phase transformations and the influence of microstructure on fatigue, fracture toughness and stress corrosion cracking in metals; computer simulation of polymeric and microporous materials; theories for complex materials; ultraviolet laser spectroscopy applied to combustion analysis and fine machining of electronic material; spectroscopic and thermal analysis techniques applied to mechanisms of heterogeneous catalysis; superconductivity and polymer kinetics; dynamical-mechanical behavior of composite materials and adhesive joints; electronic materials. New laboratories and extensive computer facilities are available for graduate research purposes. In addition, there are many opportunities to conduct research in Detroit's diversified industrial facilities, such as in the automobile, electric power, and utility industries.

## Master of Science in Materials Science and Engineering

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14.

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 2.8 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 evaluated as insufficient, may be required to elect additional courses prior to admission. Applicants with an accredited Bachelor of Science in Chemistry, Physics, or Mechanical Engineering, and who have a 3.0 h.p.a., may apply for a second Bachelor of Science degree in materials science and engineering in a dual B.S./M.S. degree program; the requirements for the two degrees may be satisfied simultaneously.

**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 engineering courses, including MSE 710, 720, 730, and 740, and CHE 720 (and including 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 20-30 and 111-113, respectively.

## 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 14. In addition, applicants must have a 3.5 honor point average in the Master of Science degree (or in the Bachelor of Science if master's degree work has not been initiated), 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 700 and above, including MSE 710, 720, 730, and 740, and CHE 720. 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 (MSE)

*The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.*

### **501 Materials for Engineering. Cr. 4**

Prereq: CHM 107, PHY 218, MSE 130, 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. (Y)

### **509 Physical Ceramics. (CHE 509). Cr. 3**

Prereq: MSE 230. 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. (B)

### **510 Ceramic Processing and Fabrication. Cr. 3**

Prereq: MSE 409 or 509 or CHE 509. Principles and practices of the processing and fabrication of ceramic materials as well as the characterization of the properties of such materials. (Y)

### **535 (CHE 535) Polymer Science. Cr. 3**

Prereq. or coreq: MAT 204. 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. (W)

### **536 (CHE 536) Polymer Processing. Cr. 3**

Prereq: CHE 320 or equivalent undergraduate fluid mechanics. Material fee as indicated in *Schedule of Classes*. A detailed analysis of polymer processing. Rheology of polymers, flow in tubes, calendaring, extrusion, coating and injection molding. (Y)

### **550 Diffusion in Solids. Cr. 3**

Prereq: MSE 340, MAT 235. A comprehensive treatment of mass transport or diffusion in solids including mathematical formalism, atomic mechanisms of diffusion, diffusion kinetics, random walk and correlation effects. (B)

### **552 Deformation and Fracture of Materials at High Temperatures. Cr. 3**

Prereq: MSE 340, 370. Behavior of metals at elevated temperatures from the microstructural point of view; concepts of creep and failure mechanism at elevated temperatures. (Y)

### **553 Fatigue of Engineering Materials. Cr. 3**

Prereq: MSE 370, C E 240. Fatigue, cyclic stress and strain, fatigue crack initiation, dislocation behavior in cyclic loading, stress controlled fatigue, Goodman, Soderberg, Gerber diagram fatigue crack propagation in metals, polymers, ceramics and composite materials. (Y)

### **560 Composite Materials. (CHE 560). Cr. 3**

Prereq: MSE 370; coreq: 535. 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. (B)

### **562 Electron Microscopy. Cr. 4**

Prereq: MSE 340. Theory and practice of electron image formation, sample preparation, diffraction principles and interpretation of effects. (B)

### **563 Cast Ferrous Alloys. Cr. 3**

Prereq: MSE 340. Advanced study of the properties of ferrous castings and solidification mechanisms. (B)

### **565 Surface Science. Cr. 3**

Prereq: MSE 230; CHM 542 or MSE 330. 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)

### **573 Physical Metallurgy of Steels. Cr. 3**

Prereq: MSE 340. Properties of iron and other BCC metals; relations between microstructures and mechanical or physical properties of steel products; emphasis on products of greatest economic importance, including sheet, HSLA, alloy and stainless steels. (Y)

### **580 Powder Metallurgy. Cr. 3**

Prereq: MSE 340. 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. (B)

### **585 (CHE 585) Vacuum Technology. Cr. 2**

Prereq: PHY 218. Vacuum technique, flow of gases through tubes and orifices, operation of pumps and manometers, vacuum materials, vacuum systems. (B)

### **586 (CHE 586) Elements of Nuclear Engineering. Cr. 3**

Prereq: senior standing. An introduction to nuclear engineering. The relevant aspects of nuclear physics, radioactivity, shielding, heat transfer and fluid flow are reviewed and applied to the design of large thermal power reactors. Biological hazards, waste disposal and developments such as fast breeders are discussed. (B)

### **595 Special Topics in Materials Science I. Cr. 1–4**

Prereq: MSE 340, 370. 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)

### **650 Fatigue and Fracture of Metals. Cr. 3**

Prereq: MSE 370. 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)

### **665 (CHE 665) Electrochemical Engineering. Cr. 2**

Prereq: CHM 544, CHE 380 and CHE 340. Advanced study of the design and operation of industrial electrochemical processes, including the treatment of problems involving simultaneous mass transfer, heat transfer and chemical reaction. (B)

### **685 Corrosion. (CHE 685). 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)

### **687 (CHE 687) Elevated Temperature Corrosion. Cr. 3**

Prereq: senior standing in engineering. Advanced study in the theories of high temperature corrosion and applications. Analysis of industrial problems and case histories. Classified as CHE design elective. (B)

### **710 (CHE 710) Advanced Engineering Mathematics. Cr. 3**

Prereq: MAT 519 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)

**720 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)

**730 (CHE 730) Advanced Thermodynamics. Cr. 3**

Prereq: CHE 330, MSE 330 or CHM 542. Advanced presentation of the principles of thermodynamics; application to open systems, phase diagrams and chemical equilibria. (F)

**733 (CHE 733) Polymer Rheology. Cr. 3**

Prereq: CHE 520 or CHE 720 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)

**735 (CHE 735) Polymer Solutions. Cr. 3**

Prereq: CHE 535. 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)

**738 (CHE 738) Polymer Kinetics. Cr. 3**

Prereq: MSE 535. Polymerization kinetics of various types of reactions, including emulsion polymerization and co-polymerization; polymer reactor design; batch and continuous stirred tank reactors; classical methods for determining reaction rates; developing techniques and spectroscopic methods. (B)

**740 Mechanical Behavior of Materials. Cr. 3**

Prereq: MSE 370. Analysis of elastic and plastic deformation of single crystals and polycrystalline materials, emphasizing the relations between metallurgical microstructure and material properties. (I)

**760 Structure of Materials and Principles of Diffraction. Cr. 3**

Coreq: MSE 710. Advanced treatment of structure of materials: crystalline, amorphous, liquid. Methods of structure determination including x-ray, neutron and electron diffraction and scattering. (Y)

**790 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)

**795 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)

**896 Research. Cr. 1-6**

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)

**897 Seminar. Cr. 1**

Prereq: consent of adviser. (F,W)

**899 Master's Thesis Research and Direction. Cr. 1-6(10 req.)**

Prereq: consent of adviser. (T)

**999 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)

# MECHANICAL ENGINEERING

Office: 2103 Engineering Building; 577-3845

Chairperson: Kenneth A. Kline

Associate Chairperson: Trilochan Singh

## Professors

Adnan Akay, Carl DeSilva, Ronald Gibson, Naeim Hencin, Raouf Ibrahim, Albert King, Kenneth Kline, L. M. Patrick (Emeritus), Robert Piccirelli, Evgeny Rivin, Trilochan Singh, Alan Whitman

## Associate Professors

Mikhail Haykin, Pawel Karlic, Lutz-Peter Nolte, M. G. Koenig (Emeritus), E.C. Zobel (Emeritus)

## Assistant Professors

Nabil Chalhoub, Juru-Sheng Hu, Jerry Ku, Ming-Chia Lai, Weiping Li, Chin-An Tan, H. Mehmet Uras, Xiao-Feng Wu, King-Hay Yang

## Adjunct Professors

David Ardayfio, Walter Bryzik, Bruce Gans, Voigt Hodgson, Demetrius Lalas, Robert Levine, Kenneth Morman, P. R. Perumalswami, John Sullivan, David Viano, Joseph Wolf

## Adjunct Associate Professors

Gary Casey, Tawfik Khalil, John Melvin, Potru Subbarao, Roger Wehage

## Adjunct Assistant Professors

Pierre DeSmet, John Cavanaugh, David Fyhrle

## Visiting Professor

Emmanuel Ayorinde

## 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 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, robotics, manufacturing, computer graphics, structural analysis, automatic controls, vehicle dynamics and design, continuum mechanics, fluid dynamics, environmental design, mechanisms, acoustics and noise control, laser diagnostics, composite materials, and optimum mechanical design. 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, robotics, 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. 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 in Mechanical Engineering

Program specializations at the master's degree level may be undertaken in many areas, including acoustics, vibrations, machine tool design, robotics, 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 14. In addition, applicants must have a baccalaureate degree or the equivalent, from an accredited college or university; and must have the preliminary preparation and the ability to pursue graduate study in this discipline. Regular admission may be authorized if the applicant's honor point average totals 3.0 or above for the upper division (approximately the last eighty semester credits) of undergraduate course work. It is recommended that applicants submit Graduate Record Examination (GRE) scores, particularly if they are requesting financial assistance. An *Application for Admission*, with the 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 Department.

**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 700-level for Plan A students and three 700-level courses for Plan C students. Directed study and directed research courses (M E 790 and 796) cannot be counted toward the satisfaction of the 700-level course requirement. A maximum of four credits in directed study or directed research (M E 590, 790 and 796) 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, dynamics and robotics, biomechanics, solid mechanics, manufacturing, design/controls 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. In addition, a minimum of four credits in analysis, to be taken from the following list, is required: M E 500, 501; MAT 507, 522, 523, 541. Thesis credit requirements are met by satisfactory completion of M E 899.

Students enrolled in master's degree programs are expected to file a *Plan of Work* with the Graduate Officer of the College by the time an equivalent of eight graduate credits have been earned. Following this, the applicant will petition his adviser to advance his/her rank to 'candidate'; candidacy 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 governing graduate scholarship and degrees; see pages 20-30 and 111-113.

## 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 14. 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, including thirty credits in dissertation direction, and at least thirty credits in formal lecture courses. At least twenty of the lecture credits must be in the major field. A maximum of thirty credits may be earned in special topics courses, and a maximum of eight credits may be earned in directed study courses. At least thirty credits in course work beyond the bachelor's degree must be earned in courses numbered 700 and above. All Ph.D. students are required to elect a minor consisting of at least eight credits in courses numbered 500 and above. At least half of all course work exclusive of dissertation credits must be earned in the Department of Mechanical Engineering.

**Examinations:** All Ph.D. students must pass the following qualifying examinations:

1. *Preliminary Qualifying Examination:* This is a written examination administered twice annually in October and February. 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 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 field 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 999, Doctoral Dissertation Research and Direction.

An approved *Plan of Work* should be filed with the Office for Graduate Studies before the student has earned approximately forty-eight credits beyond the baccalaureate degree, or sixteen credits beyond the master's degree. The student must have filed the *Plan* before being recommended for final qualifying examinations. A student may be admitted to the status of doctoral candidate upon successful completion of the final qualifying examinations (written and oral).

**Dissertation requirements** are satisfied by completion of M E 999. All Ph.D. students must pass the written preliminary qualifying examination before election of dissertation credits, and no more than ten dissertation credits may be elected before doctoral candidacy is obtained by passing the final qualifying examination. All graduate students are required to register for dissertation credits for any semester in which they utilize University facilities or are under faculty supervision.

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. Research laboratories are available in the College, but situations may arise wherein a cooperative effort with industry will permit doctoral research to be performed in industrial laboratories.

## GRADUATE COURSES (M E)

The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.

### 500 Engineering Analysis I. Cr. 4

Prereq: MAT 204 and senior standing. Material fee as indicated in *Schedule of Classes*. 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 or variations. Applications to initial and boundary value problems in engineering. (F)

### 501 Engineering Analysis II. Cr. 4

Prereq: MAT 204 and senior standing. Material fee as indicated in *Schedule of Classes*. 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. (W)

### 503 Finite Difference Methods in Mechanical Engineering. Cr. 4

Prereq: CHE 304. Student computer account required. Finite difference techniques for the solution of ordinary and partial differential equations in mechanical engineering. Study of problems in steady and transient heat conduction, beam bending and vibrations, elastic stress analysis, plate bending and fluid mechanics. (F)

### 504 Finite Element Methods I. Cr. 4

Prereq: M E 360, MAT 235. 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)

### 510 Engineering Physiology. (ECE 510)(I E 510). Cr. 4

Prereq: ECE 433 or ME 340. 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)

### 516 Biomechanics I. (ECE 516)(I E 516). Cr. 4

Prereq: M E 510 or ECE 510 or I E 510; ME 240. Mechanics applied to biological systems. Static and dynamic analysis of bone, muscle and joints. Impact biomechanics, including experimental simulation of automotive collision, instrumentation and data analysis. (B:F)

### 517 Design of Human Rehabilitation Systems. Cr. 4

Prereq: M E 445; senior standing. Design, fabrication and testing of customized hardware to aid handicapped patients. (W)

### 520 Intermediate Thermodynamics. Cr. 4

Prereq: M E 221 or equiv. Applications of thermodynamics to flow and nonflow systems, cycles for power and HVAC systems. Irreversibility analysis of systems, combustion calculations, chemical and phase equilibrium, mixture properties. (S)

### 521 Convective and Radiative Heat Transfer. Cr. 4

Prereq: M E 420. 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)

### 524 Industrial Combustion Systems. (CHE 524). Cr. 4

Prereq: M E 420 or CHE 320. Introduction to operating principles and design features of modern boilers, furnaces, gas turbine combustors, and advanced continuous combustion systems. Application of basic thermodynamic and heat transfer calculations to testing and design. (B)

### 530 Intermediate Fluid Mechanics. Cr. 4

Prereq: M E 330. 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)

### 531 Topics in Fluid Mechanics. Cr. 4

Prereq: M E 330. Student computer account required. Review of fundamental concepts. Measurements and experimentation techniques. Drag calculations and vehicle aerodynamics, turbomachinery, airfoil theory and fluidics. (W)

### 540 Dynamics II. Cr. 4

Prereq: M E 340. Material fee as indicated in *Schedule of Classes*. 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. (F)

### 541 Vibrations II. Cr. 4

Prereq: M E 341. 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)

### 542 Computer Applications in Mechanical Design. Cr. 4

Prereq: M E 360, 347. Computer-based systems in implementation of engineering design and manufacturing. Use of MEDUSA designer and other comprehensive software systems, locally-developed programs, and those originated by students in the course. (I)

### 544 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. Noise measurement techniques and noise reduction methods. (F)

### 545 Fundamentals of Vehicle Design. Cr. 4

Prereq: senior or graduate standing. Material fee as indicated in *Schedule of Classes*. Design, analysis and synthesis of passenger vehicles and their major subsystems. (I)

### 546 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)

### 547 Fundamentals of Robot and Manipulator Design. Cr. 4

Prereq: senior standing; M E 440. Classification, design and analysis of robots and manipulators and their principal subsystems (structures and drives). Basic kinematics and dynamics of robots/manipulators. Advanced machine elements for robotic applications. (F)

### 550 Microprocessors for Measurement and Control. Cr. 4

Prereq: M E 440, 491, and CHE 304. Material fee as indicated in *Schedule of Classes*. Introduction to principles of microprocessors and high level languages for programming microprocessors for measurement and control. Typical systems include: DC motor speed,

stepping motors, temperature control of mixing process, automatic weighing, etc. (W)

**553 Mechanism Design. Cr. 4**

Prereq: senior standing. Student computer account required. Kinematics and dynamics of mechanisms including linkages, cams, universal joints, etc. Balancing, synthesis of mechanical systems. Introduction to computer-aided design and computer graphics facilities. (B:W)

**555 Modeling and Control of Dynamic Systems. Cr. 4**

Prereq: M E 440 or consent of instructor. Material fee as indicated in *Schedule of Classes*. 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. (F)

**557 Analytical Methods In Robots. Cr. 4**

Prereq: M E 440. Kinematics of robot manipulators using homogeneous transformations for direct and inverse kinematics. Differential kinematics and manipulator Jacobian determination. Trajectory calculation and static forces. Lagrangian dynamics for manipulator control modeling. Computer manipulation of kinematic and dynamic equations and simulation. (I)

**560 Advanced Mechanics of Materials. Cr. 4**

Prereq: M E 360. 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. (B:F)

**566 Introduction to Plates and Shells. Cr. 4**

Prereq: M E 360 and senior standing. Material fee as indicated in *Schedule of Classes*. Symmetrical and unsymmetrical bending of circular plates. Bending of rectangular plates. Various approximate methods. Membrane theory of shells of revolution. Bending of cylindrical and spherical shells. Applications to pressure vessels. (B:W)

**570 Introduction to Continuum Mechanics I. Cr. 4**

Prereq: MAT 507. Material fee as indicated in *Schedule of Classes*. 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. (F)

**572 Mechanics of Composite Materials. Cr. 4**

Prereq: M E 360, 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)

**580 Combustion Engines. Cr. 4**

Prereq: M E 220 and 221 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)

**581 Combustion and Emissions. Cr. 4**

Prereq: ME 580; 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)

**582 Thermal Environmental Engineering. Cr. 4**

Prereq: M E 320 and 420. 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. (B:F)

**590 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. (Y)

**595 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)

**618 Biinstrumentation. (ECE 618)(I E 618). Cr. 4**

Prereq: ECE 330 and M E 510. Engineering principles of physiological measurements. Signal conditioning equipment, amplifiers, recorders and transducers. Recent advances. (B:F)

**645 Advanced Manufacturing Processes and Methods. (I E 645). Cr. 4**

Prereq: M E 345, CHE 304, 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)

**661 (O T 661) Clinical and Experimental Biomechanics. (P T 504). Cr. 4**

Prereq: M E 510 or consent of instructor. Interdisciplinary course: quantitative and qualitative assessment of human motion and the analysis of human performance; normal and abnormal movement, motion problems and injuries, design and utilization of adaptive equipment. (Y)

**702 Finite Element Methods II. Cr. 4**

Prereq: M E 504. Student computer account required. Continuation of M E 504. 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)

**703 Advanced Finite Element Analysis. Cr. 4**

Prereq: M E 504 or equiv. Student computer account required. Finite element techniques in dynamics and vibrations. Consistent and diagonal mass matrices, natural frequency and mode shape calculations, design sensitivity analysis, use of natural frequency and mode shape test data to improve finite element models. (W)

**710 Mathematical Modeling In Bioengineering. (ECE 710) (I E 710). Cr. 4**

Prereq: M E 510 or ECE 510. Mathematical models that simulate physiological or anatomical function. Models of the nervous and vascular systems, models for impact acceleration and current topics. (W)

**716 Biomechanics II. (ECE 716)(I E 716). Cr. 4**

Prereq: M E 516. Material fee as indicated in *Schedule of Classes*. 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. (I)

**720 Advanced Thermodynamics for Mechanical Engineers. Cr. 4**

Prereq: M E 320 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)

**723 Turbulence. Cr. 4**

Prereq: M E 330. First course in turbulence. Introduction to the nature and dynamics of turbulence using dimensional analysis and statistical description. (Y)

**724 Processes in Continuous Combustion Systems. (CHE 724). Cr. 4**

Prereq: M E 524 or CHE 524. 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)

**725 Advanced Radiative Heat Transfer. Cr. 4**

Prereq: M E 521. Radiative heat transfer in participating media such as gases and particulates. Processes and properties describing the emission, absorption, and scattering in participating media. The radiative transfer equation. Zone method and spherical harmonics solutions of the radiative transferred equation. Computer projects assigned. (B:W)

**726 Heat and Mass Transfer. Cr. 4**

Prereq: M E 420. 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)

**727 Convective Heat Transfer. Cr. 4**

Prereq: M E 530. Prandtl's approximation and boundary layer equations. Introduction to turbulence. Solutions for velocity and temperature distributions for external flows with and without pressure gradients. Approximate integral methods for momentum of energy. Natural convection. High speed flows and compressibility effects. Numerical solutions of 2-D and 3-D boundary layers. Recent developments in heat transfer calculations. (I)

**729 Advanced Combustion and Emissions I. Cr. 4**

Prereq: M E 320 and 420 or consent of instructor. Material fee as indicated in *Schedule of Classes*. Flame propagation theories, structure or pre-mixed hydrocarbon flames, mathematical formulations for flame propagation and emission formation in homogenous mixtures in engines. (W)

**730 Advanced Fluid Mechanics. Cr. 4**

Prereq: M E 530 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)

**731 Computational Fluid Mechanics and Heat Transfer. Cr. 4**

Prereq: M E 530 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)

**740 Advanced Dynamics. Cr. 4**

Prereq: M E 540. Material fee as indicated in *Schedule of Classes*. Generalized coordinates, classification of dynamical systems with finite degrees of freedom. Lagrange's equations for rheonomic, non-holonomic systems. Ignorable coordinates, Jacobi's integral, dissipative systems. Hamilton's equations, small oscillations about steady solutions, and introduction to stability. (W)

**741 Vibrations of Continuous Systems. Cr. 4**

Prereq: M E 541. Introduction to integral transforms. Longitudinal torsional and transverse vibrations of rods; free and forced periodic and aperiodic vibrations. Transverse vibrations of continuous beams and frames. Transverse vibrations of thin plates. Approximate methods: iterative and difference methods, transfer matrices; Rayleigh-Ritz and Galerkin method. (W)

**742 Random Vibrations. Cr. 4**

Prereq: M E 541. Mathematical description of stochastic processes. Response analysis of mechanical systems. Frequency response, spectral density, filters. (I)

**746 Advanced Acoustic Radiation. Cr. 4**

Prereq: M E 500 or equiv., 546 or consent of instructor. Advanced theoretical treatment of sound generation and transmission with exact and approximate theories. (B:W)

**748 Nonlinear Vibration. Cr. 4**

Prereq: M E 541, 740. 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)

**750 Advanced Mechanisms. Cr. 4**

Prereq: M E 553. Material fee as indicated in *Schedule of Classes*. Analysis and synthesis of high speed machinery: elastodynamics, vibrations, dynamic stability. Modeling of joints, balancing, optimization studies, computer-aided design techniques. (B:F)

**755 Control of Dynamic Systems. Cr. 4**

Prereq: M E 555 or consent of instructor. Material fee as indicated in *Schedule of Classes*. 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. (W)

**756 Advanced Robot Dynamics and Control. Cr. 4**

Prereq: M E 557. Advanced developments in robotics including recursive Newton-Euler and Lagrangian dynamics formulation, improved trajectory generation algorithms, comparative control methods for robot manipulations and compliance modeling. Study of new concepts from current robotics literature. (B:F)

**757 Adaptive and Learning Control of Dynamic Systems. Cr. 4**

Prereq: M E 555. 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)

**759 Nonlinear Control Systems. Cr. 4**

Prereq: M E 555 or ECE 547. 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)

**761 Theory of Elasticity I. Cr. 4**

Prereq: M E 570. Material fee as indicated in *Schedule of Classes*. 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. (F)

**766 Theory of Plates. Cr. 4**

Prereq: M E 761. Material fee as indicated in *Schedule of Classes*. Bending of isotropic and orthotropic plates, continuous plates, plates of variable thickness, various approximate methods. (B:F)

**772 Advanced Mechanics of Composite Materials. Cr. 4**

Prereq: M E 572. 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)

**790 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)

**795 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)

**796 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)

**829 Advanced Combustion and Emissions II. Cr. 4**

Prereq: M E 729 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)

**861 Theory of Elasticity II. Cr. 4**

Prereq: M E 570, 761. Material fee as indicated in *Schedule of Classes*. 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. (B:W)

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

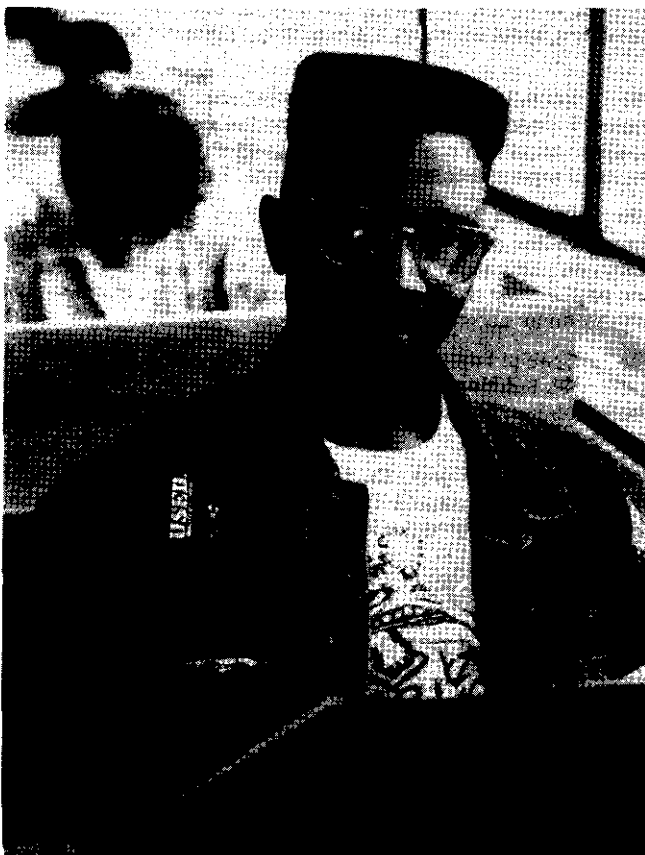
Prereq: consent of adviser. (T)

**997 Doctoral Seminar. Cr. 2-6(Max. 6)**

Prereq: consent of doctoral adviser; coreq: M E 999. (T)

**999 Doctoral Dissertation Research and Direction. Cr. 1-16**

Prereq: consent of doctoral adviser; coreq: M E 997. 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

Howard M. Hess (Emeritus), Mulchand S. Rathod, Donald V. Stocker (Emeritus)

## Associate Professors

Karl O. Anderson, Seymour Cuker (Emeritus), Vladimir Sheyman

## Assistant Professors

Gopi R. Jindal, Victor Korolov, Josef Sypniewski, Chih-Ping Yeh

## Part-Time Faculty

John Boyle, Leslie Bublin, Phillip Chams, Nicholas Daddario, Robert Ferrand, Roger Gay, Leopold Gendleman, Ravindra Gupta, Charles Loehr, Ahmed Mustafa, Charles Neff, Richard Netzloff, Sandra Overway-Freeman, Anthony Slominis, Edward Sturgeon, Mark Zachos

## 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 skill 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 14. Additionally, all applicants must satisfy the following:

1. The applicant must:

- a) Hold a bachelor's degree in engineering technology or a related discipline from a college or university of recognized standing, or the equivalent;
- b) Have maintained at least a 'B' average (3.0 h.p.a.) in junior and senior year coursework, or have successfully completed at least two

relevant graduate-level courses at an accredited institution with a grade of 'B' or better;

c) 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);

d) 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 14.

**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 20-30 and 111-113, 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

E T 743 - Methods of Engineering Analysis I .....	4
E T 745 — Methods of Engineering Analysis II .....	4
E T 785 — Statistical Methods and Applications .....	4
Total:	12

b) *Elective Courses* ..... 14-16 credits

Selected graduate-level courses engineering technology, engineering, science and/or applied sciences, based on program objectives.

c) *E T 799 — Master's Project* ..... 4-6 credits

*Minimum credits required for M.S.E.T. degree* ..... 32

**Master's Project:** The requirement of four to six credits in E T 799 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 Department, 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 799. Requests to elect additional credits in E T 799 beyond those originally allowed by the Master's Project Advisory Committee must also be approved by the Committee.

## GRADUATE COURSES

*The following courses, numbered 700-999, are offered for graduate credit. For interpretation of numbering system, signs and abbreviations, see page 463.*

### ENGINEERING TECHNOLOGY (E T)

**743 Methods of Engineering Analysis I. Cr. 4**  
Prereq: E T 345. Applications of differential equations, partial derivatives, Laplace transforms, Fourier series, matrices, vectors. (F)

**745 Methods of Engineering Analysis II. Cr. 4**  
Prereq: CSC 206; E T 743. Computer applications and numerical methods of solving differential and integral equations, fast Fourier transforms, spectrum analysis, curve fitting, approximation of function. (W)

**785 Statistical Methods and Applications. Cr. 4**  
Prereq: E T 385, coreq: 743. Sampling techniques in production data analysis, correlation coefficients, regression analysis, control charts, design of experiments, analysis of variance, Factor analysis. (S)

**790 Directed Study. Cr. 1-8(Max. 8)**  
Prereq: written consent of adviser and graduate officer. 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)

**795 Special Topics in Engineering Technology. Cr. 1-4(Max. 8)**  
Prereq: consent of instructor. Topics to be announced in *Schedule of Classes*. (I)

**799 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)

**715 Computer-Aided Circuit Design. Cr. 4**  
Prereq: E T 743, EET 415. Qwescent, frequency and tune domain analysis of electronic circuits (linear and non-linear) by computer. Sensitivity analysis circuit optimization. (I)

**720 Advanced Control Systems. Cr. 4**

Prereq: E T 743, EET 420. 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)

**730 Communication Systems. Cr. 4**

Prereq: E T 385, E T 743, EET 418. 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)

**MANUFACTURING/INDUSTRIAL ENGINEERING TECHNOLOGY (MIT)**

**770 Robotics and Flexible Manufacturing. Cr. 4**

Prereq: E T 743, MIT 470. Kinematics, dynamics and controls of the manipulators, their design and applications in flexible manufacturing cells. Computer-integrated manufacturing. (I)

**MECHANICAL ENGINEERING TECHNOLOGY (MCT)**

**723 Electronic Cooling and Packaging. Cr. 4**

Prereq: E T 743, MCT 715. Fundamentals of heat transfer and fluid mechanics, heat exchangers, thermal control techniques, cooling of electronic systems and devices. (I)

**741 Applied Vibrations. Cr. 4**

Prereq: E T 743, MCT 441. 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**

**DEAN: David J. Magidson**

# 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 Community Arts Gallery exhibitions 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, 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.

## Graduate Degrees and Certificates

### *POST MASTER'S CERTIFICATE in Museum Practice*

#### *MASTER OF ARTS with majors in*

- Art
- Art History
- Communication
- Design and Merchandising
- Music
- Theatre

#### *MASTER OF MUSIC*

#### *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 14. The following additions and amendments pertain to the College of Fine, Performing and Communication Arts.*

## Regular Admission

—See page 14.

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 regulations of the Graduate School (see pages 20–30) and this school governing graduate scholarship and degrees.

## GRADUATE DEGREE REQUIREMENTS

General requirements for graduate degrees may be found beginning on page 20. 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 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 (700 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 candidates under the thesis plan register for the course numbered 899 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 999 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 32. 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 SCHOOL

#### DEAN:

David J. Magidson ..... 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

#### DEVELOPMENT OFFICER:

Diane M. Shane ..... 5104 Gullen Mall; 577-5363

#### DEGREE CERTIFICATION:

Susan T. Tamm ..... 5104 Gullen Mall; 577-5364

#### PERSONNEL RECORDS:

Eunice Pappas ..... 5104 Gullen Mall; 577-5365

### Departmental Offices

#### ART AND ART HISTORY:

Jeffrey Abt ..... 150 Community Arts; 577-2980

#### COMMUNICATION:

Jack Kay ..... 585 Manoogian Hall; 577-2943

#### DANCE:

Georgia Reid ..... 125 Matthaeh Building; 577-4273

#### MUSIC:

Dennis J. Tini ..... 105 Schaver Music Building; 577-1795

#### THEATRE:

Robert T. Hazzard ..... 95 W. Hancock; 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:** Jeffrey Abt  
**Associate Chairperson:** Carolyn Hooper  
**Academic Services Officers:** Agnes Aoki, John Slick

## Professors

William A. Allen (Emeritus), Mary Jane Bigler (Emerita), Richard J. Bilaitis, Robert Broner (Emeritus), Olga Constantine, Phillip G. Fike, Peter J. Gilleran (Emeritus), Bernard M. Goldman (Emeritus), Joseph Gutmann (Emeritus), John G. Hegarty, David A. Mitchell (Emeritus), James Nawara, Louise J. Nobili (Emerita), Thomas C. Parish, William E. Pitney (Emeritus), Patricia A. Quinlan, G. Alden Smith (Emeritus), Horst Uhr, Robert J. Wilbert, William T. Woodward (Emeritus)

## Associate Professors

Jeffrey Abt, Phyllis A. Ashinger, Thomas P. Fitzgerald, Urban Jupena, Robert J. Martin, John C. Mills, James M. Raymo, Melvin Rosas, Stanley L. Rosenthal, Jeanne A. Stiller, Joseph B. Zajac, Marilyn Zimmerman

## Assistant Professors

Pamela DeLaura, Carolyn J. Hooper, Brian Madigan, Janice Mann, Judith Moldenhauer, Peter Williams

## W. Hawkins Ferry Endowed Chair in Art History and Criticism

Michael Plante

## Graduate Degrees and Certificates

**MASTER OF ARTS with a major in art and a specialization in one of the following:** ceramics, design, 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, design, drawing, fibers, metalsmithing, painting, photography, printmaking, or sculpture

**POST MASTER'S CERTIFICATE in museum practice**

## Master of Arts in Art

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14. 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

Students may elect the Master of Arts in Art History in either the College of Liberal Arts or in the College of Fine, Performing and Communication Arts. Those electing the major in the College of Liberal Arts must fulfill the requirements for graduate degrees of that College.

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14. The applicant must have an undergraduate or equivalent degree in art history, a minimum 'B' average in undergraduate art history, and two years of college-level work in one foreign language (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 700-level and eight credits in thesis.

**Plan B:** Thirty-three credits in course work, including at least six credits on the 700-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 509, (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 14. Applicants for a graduate degree in design and merchandising or interior design 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 interior design, 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.

**Interior Design:** Undergraduate preparation must include a minimum of twelve credits in interior design or environmental design with supporting courses in allied fields such as art, architectural drawing, urban planning, and other closely-related areas.

**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 700–799. 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 14. 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, plus three credits in the M.F.A. Colloquium, 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.

## Post Master's Certificate in Museum Practice

Students who have earned the M.A. in art history, or in a related field with a concentration of work in art history, may elect to earn a Certificate in Museum Practice.

**Admission:** Regular admission to the Graduate School of the University (see page 14) and the Department of Art and Art History is required. Applicants must have a master's degree in art history, or in a related area with a concentration of work in art history, and a reading

knowledge of two foreign languages (German and French are preferred). They also must have passed the departmental comprehensive slide examination. Candidates will be selected by the Director of Museum Practices program at Wayne State University and the Co-Director of the program in the Department of Education at the Detroit Institute of Arts, in consultation with the art history faculty at the University and the curatorial staff of the Detroit Institute of Arts. Admission will be considered only after interviews with the Director and Co-Director of the program; the approval of both is necessary for admission. The Certificate program is a twelve-month program, beginning in the fall semester of each academic year. No admission to the program is granted at any other time of the year.

**CERTIFICATE REQUIREMENTS:** Thirty credits in course work, to be divided among six credits in museum-related courses (A H 695, A H 789) and twenty-four internship credits (A H 788) at the Detroit Institute of Arts.

## ASSISTANTSHIPS and SCHOLARSHIPS

*General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 32. 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 twelve credits in the Fall and Winter terms, and six credits in the Spring/Summer semester. 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 one of the studio art areas; 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.

**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. 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.

## GRADUATE COURSES

The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.

## GRAPHIC DESIGN (AGD)

### 525 Graphic Design III: Complexity and Variety in Design. Cr. 3 (Max. 18)

Prereq: AGD 425, junior standing. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Complex design situations. Research and methodology. Project may include package design, instruction manuals, book and brochure design, publication design. (F,W)

### 526 Senior Seminar. Cr. 3

Prereq: senior standing. Material fee as indicated in *Schedule of Classes*. 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)

### 570 Special Topics. Cr. 3 (Max. 6)

Prereq: AGD 425, 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)

### 589 Directed Projects: Graphic Design. Cr. 3–6 (Undergrad. max. 9; grad. max. 18)

Prereq: written consent of instructor. Individual problems. (F,W)

### 590 Field Study: Internship. Cr. 3–6

Prereq: AGD 525, 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)

### 625 Graphic Design IV: Systems, Series, and Advanced Studies in Visual Communication. Cr. 3

Prereq: AGD 525, 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)

### 626 Advanced Graphic Design Concepts. Cr. 3 (Max. 6)

Prereq: AGD 525. Problem/solution exercises addressing advanced design in the following areas: corporate identity, packaging, architectural, environmental, print advertising, publication, collateral, out-of-home, TV/video. (F,W)

### 627 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)

### 725 Graduate Problems in Graphic Design. Cr. 3–9 (Max. 24)

Prereq: AGD 525. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Individual problems in advanced advertising design. (F,W)

## CERAMICS (ACR)

### 555 (ACR 255) Advanced Ceramics. (ACR 256) (ACR 355)(ACR 455)(ACR 755). Cr. 3–6 (Max. 12)

Prereq: ACR 455. Open only to art majors in ceramics. Election of more than 3 credits per semester requires consent of instructor. Material fee as indicated in *Schedule of Classes*. Individual research including kiln building, firing and studio management. Individual philosophy and group critiques emphasized. (T)

### 588 Directed Projects: Ceramics. Cr. 3–6 (Undergrad. max. 15; grad. max. 30)

Prereq: written consent of instructor. Material fee as indicated in *Schedule of Classes*. Individual problems. (F,W)

### 755 (ACR 255) Graduate Problems in Ceramics. (ACR 256)(ACR 355)(ACR 455)(ACR 555). Cr. 3–9 (Max. 24)

Prereq: ACR 555. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Individual problems in advanced ceramics. (T)

### 888 M.F.A. Studio: Ceramics. Cr. 6–9 (Max. 36)

Open only to M.F.A. students. Material fee as indicated in *Schedule of Classes*. Extended problems in ceramics; individual research with eighteen to twenty-seven hours of laboratory per week. (F,W)

## DESIGN (ADE)

### 522 Computer Art. Cr. 3

Prereq: ADE 121. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Survey of use of computer in art history; artist's work preparation and the practical generation of computer-assisted imagery; painting systems; specific media. Experimentation with computer tools as aspect of creative effort. No prior computer experience necessary. (Y)

### 523 Advanced Computer Art. Cr. 3 (Max. 6)

Prereq: ADE 522. Study and synthesis of graphics, text, motion, and sound through the use of micro-processor systems to develop individual student projects. (Y)

### 583 Directed Projects: Design. Cr. 3–6 (Undergrad. max. 15; grad. max. 30)

Prereq: written consent of instructor. Individual problems. (F,W)

### 883 M.F.A. Studio: Design. Cr. 6–9 (Max. 36)

Open only to M.F.A. students. Extended problems in design; individual research with eighteen to twenty-seven hours of laboratory per week. (F,W)

## DRAWING (ADR)

### 506 Advanced Drawing. (ADR 706). Cr. 3–6 (Max. 15)

Prereq: ADR 307. Election of more than three credits per semester requires written consent of instructor. Emphasis on individual direction and development in various media. (Y)

### 507 Advanced Life Drawing. (ADR 707). Cr. 3–6 (Max. 24)

Prereq: ADR 307. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Continued study of graphic translation of the human figure. Individual directions and variety of problems encouraged. More complex subject matter, scale and composition. (F,W)

### 508 Still Life and Landscape Drawing. Cr. 3–6 (Max. 12)

Prereq: ADR 106. Election of more than 3 credits per semester requires consent of instructor. Exploration of still life and landscape

subject matter through observation and imagination using various media. Emphasis on work done out-of-doors at various locations.

(S)

**509 Anatomy. Cr. 3**

Prereq: ADR 207. Material fee as indicated in *Schedule of Classes*. Drawing the human anatomy through studies of visual structural form; the skeletal and muscular systems and superficial characteristics.(Y)

**580 Directed Projects: Drawing.**

**Cr. 3-6(Undergrad. max. 15; grad. max. 30)**

Prereq: written consent of instructor. Individual problems. (F,W)

**706 (ADR 506) Graduate Problems in Drawing. Cr. 3-9(Max. 24)**

Prereq: ADR 506. Election of more than three credits per semester requires written consent of instructor. Advanced work in non-figurative drawing. Studio and criticism. (Y)

**707 (ADR 507) Graduate Life Drawing. Cr. 3-9(Max. 24)**

Prereq: ADR 507. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Advanced problems in drawing the human figure. Individual concepts and choice of medium. (F,W)

**880 M.F.A. Studio: Drawing. Cr. 6-9(Max. 36)**

Open only to M.F.A. students. Extended problems in drawing; individual research with eighteen to twenty-seven hours of laboratory per week. (F,W)

## FASHION DESIGN and MERCHANDISING (AFA)

**542 Fashion Design: Tailoring. Cr. 3**

Prereq: AFA 242. Tailoring techniques applied to coats and suits. (F)

**543 History of Costume. Cr. 3**

Prereq: one art history course. Survey of historic costumes from prehistoric to present. (F)

**544 Fashion Design: Flat Pattern. Cr. 3 (Max. 6)**

Prereq: AFA 242. Material fee as indicated in *Schedule of Classes*. Original designs from a basic sloper. (Y)

**545 Fashion Design: Draping. Cr. 3 (Max. 6)**

Prereq: AFA 242. Material fee as indicated in *Schedule of Classes*. Creation of an original garment by draping on a form. (I)

**546 Merchandising II. Cr. 3**

Prereq: AFA 346. Current trends in merchandising. Lectures by specialists. (F)

**547 Visual Merchandising: Display. Cr. 3**

Prereq: ADR 105 or ADE 120. Material fee as indicated in *Schedule of Classes*. 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. (F,W)

**549 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)

**592 Supervised Field Experience. Cr. 2-4**

Prereq: senior standing. Supervised field experience designed to correlate classroom theory with practical work. (F)

**642 Advanced Problems in Apparel Design and Construction. Cr. 3**

Prereq: AFA 542, 544 and 545. Individual problems in advanced design and construction. (I)

**685 Seminar. Cr. 2**

Topics to be announced in *Schedule of Classes*. (F,W)

**693 Study Tour. Cr. 3**

Prereq: written 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)

**741 Practicum in Textile Testing. Cr. 3**

Prereq: one course in textiles, one course in chemistry, or consent of instructor. No credit after AFA 341. Recent developments in textiles; advanced physical testing techniques. (W)

**785 Seminar. Cr. 2**

Prereq: consent of instructor. Topics to be announced in *Schedule of Classes*. (W)

**790 Directed Study. Cr. 1-4(Max. 8)**

Prereq: written consent of adviser, instructor and graduate officer. (F,W)

**791 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)

**796 Research. Cr. 2-6(Max. 6)**

Prereq: consent of adviser. (Y)

## FIBERS (AFI)

**565 (AFI 265) Weaving: Senior Project. (AFI 365)(AFI 765). Cr. 3-6(Max. 12)**

Prereq: AFI 365. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Directed project in weaving. Research and written evaluative statement required. (T)

**566 (AFI 266) Fibers: Senior Project. (AFI 366)(AFI 766). Cr. 3-6(Max. 12)**

Prereq: AFI 366. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Extensive project or series of works determined by student; research and written statement. (T)

**587 Directed Projects: Fibers.**

**Cr. 3-6(Undergrad. max. 15; grad. max. 30)**

Prereq: written consent of instructor. Individual problems. (F,W)

**765 (AFI 265) Graduate Problems in Weaving. (AFI 365)(AFI 565). Cr. 3-9(Max. 24)**

Prereq: AFI 565. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Advanced problems in weaving. (T)

**766 (AFI 266) Graduate Problems in Fibers.**

**(AFI 366)(AFI 466)(AFI 566). Cr. 3-9(Max. 24)**

Prereq: AFI 566. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Individual problems in fibers. (T)

## INDUSTRIAL DESIGN (AID)

**530 (AID 330) Industrial Design. Cr. 3-6(Max. 15)**

Prereq: AID 330. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Product design problems with emphasis on workability and form design. Sketches and three-dimensional models. (F,W)

**531 (AID 331) Advanced Presentation. Cr. 3-6(Max. 18)**

Prereq: AID 331. Election of more than three credits per semester requires written 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)

**630 Transportation Design. (AID 730). Cr. 3–6(Max. 18)**  
Prereq: AID 330. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. 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. (F,W)

**632 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 substyles, Art Nouveau, Arts and Crafts movement, Beaux Arts, Vienna Secession. (F)

**633 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)

**730 (AID 630) Graduate Industrial Design. Cr. 3–9(Max. 24)**  
Prereq: AID 530 or 630. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Individual problems in industrial design. (F,W)

## INTERIOR DESIGN (AIA)

**560 History of Interiors. Cr. 3**  
Prereq: junior standing or consent of instructor. Material fee as indicated in *Schedule of Classes*. History of interiors from ancient periods to the present. (F)

**561 Interior Materials and Systems. Cr. 3**  
Prereq: junior standing or above in interior design concentration. Material fee as indicated in *Schedule of Classes*. Estimating, specifying, and the techniques used in the application of materials and systems used in interior design. Lectures, guest speakers, and field trips. (F)

**562 Survey of Construction Technology. Cr. 3**  
Prereq: junior standing in interior design concentration. Introduction to modern structural, air conditioning, plumbing, electrical and acoustical engineering principles as applied to architectural interiors. Designer–engineer relationships. (Y)

**563 Interior Lighting Design. Cr. 3**  
Prereq: junior standing in interior design concentration. Light sources, fixtures, selection and application in architectural interiors; energy efficiency, comfort, basic calculations. (F)

**564 Interiors Construction Drawing. Cr. 3**  
Prereq: junior standing in interior design concentration. Material fee as indicated in *Schedule of Classes*. Preparation of detailed architectural working drawings for interior spaces. (W)

**566 Supervised Field Experience. Cr. 2–4**  
Prereq: written consent of instructor. Supervised field experience designed to correlate classroom theory with practical work. (F,W)

**591 Directed Projects: Interior Architecture. Cr. 3–6(Max. 9)**  
Prereq: written consent of instructor. Individual problems. (F,W)

**661 Advanced Interiors Studio. Cr. 3**  
Prereq: AIA 461 or equiv. Material fee as indicated in *Schedule of Classes*. Projects involving large-scale facilities, adaptive re-use, and retail spaces. Integration of human factors as they relate to specific environments. Portfolio development. (W)

**665 Interiors: Business Principles and Practices. Cr. 2**  
Prereq: senior or graduate standing. Examination of different types of business formations and their characteristics; professional practices and procedures; ethical behavior, legal and insurance aspects. (W)

**685 Senior Seminar: Contemporary Designers. Cr. 2**  
Prereq: consent of instructor. Topics to be announced in *Schedule of Classes*. (F,W)

**760 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)

**761 Graduate Interiors Studio. Cr. 3 (Max. 6)**  
Prereq: consent of instructor. Material fee as indicated in *Schedule of Classes*. Graduate level design experiences allowing topical design specialization. (W)

**765 Graduate Seminar: Contemporary Designers. Cr. 2**  
Prereq: consent of instructor. Topics to be announced in *Schedule of Classes*. (F,W)

**790 Directed Study. Cr. 1–4**  
Prereq: written consent of adviser, instructor, and graduate officer. (Y)

## METALS (AME)

**560 (AME 360) Advanced Metal Arts and Jewelry Design. (AME 760). Cr. 3–6(Max. 24)**  
Prereq: AME 360. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Comprehensive project development on an individual basis. Workshops in specialty areas. (F,W)

**586 Directed Projects: Metal Arts. Cr. 3–6(Undergrad. max. 15; grad. max. 30)**  
Prereq: written consent of instructor. Individual problems. (F,W)

**760 (AME 360) Graduate Study in Metal Arts. (AME 560). Cr. 3–9(Max. 24)**  
Prereq: AME 560. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Individual problems. Directed study and project development in metal arts. (F,W)

## PAINTING (APA)

**510 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)

**511 (APA 211) Advanced Painting: Water Media. (APA 311). Cr. 3–6(Max. 18)**  
Prereq: APA 311. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Continuation of APA 311. (T)

**512 (APA 212) Advanced Painting: Oil and Other Media. (APA 312). Cr. 3–6(Max. 18)**  
Prereq: APA 312. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Continuation of APA 312. (T)

**513 (APA 313) Figure Painting Advanced: Water Media. (APA 713). Cr. 3–6(Max. 12)**  
Prereq: APA 313. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Continuation of APA 313. (Y)

**514 (APA 314) Figure Painting Advanced: Oil and Other Media. (APA 714). Cr. 3-6(Max. 12)**

Prereq: APA 314. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Continuation of APA 314. (Y)

**581 Directed Projects: Painting. Cr. 3-6(Undergrad. max. 15; grad. max. 30)**

Prereq: written consent of instructor. Individual problems. (F,W)

**711 Graduate Problems in Painting: Water Media. Cr. 3-9(Max. 18)**

Prereq: APA 511. Election of more than three credits per semester requires written consent of instructor. Advanced problems in painting. (T)

**712 Graduate Problems in Painting: Oil Media. Cr. 3-9(Max. 18)**

Prereq: APA 512. Election of more than three credits per semester requires written consent of instructor. Advanced problems in painting. (T)

**713 (APA 313) Graduate Problems in Figure Painting: Water Media. (APA 513). Cr. 3-9(Max. 18)**

Prereq: APA 513. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Advanced problems in painting the human figure. (Y)

**714 (APA 314) Graduate Problems in Figure Painting: Oil Media. (APA 514). Cr. 3-9(Max. 18)**

Prereq: APA 514. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Advanced problems in painting the human figure. (Y)

**881 M.F.A. Studio: Painting. Cr. 6-9(Max. 36)**

Open only to M.F.A. students. Extended problems in painting; individual research with eighteen to twenty-seven hours of laboratory per week. (F,W)

## PHOTOGRAPHY (APH)

**542 (APH 442) Advanced View Camera. Cr. 3-6(Max. 9)**

Prereq: APH 442. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Refinement of view camera techniques and advanced lighting techniques. Projects include advertising, architectural, industrial and fashion photography. Preparation of a professional portfolio. (Y)

**543 (APH 443) Advanced Color Photography. Cr. 3-6(Max. 9)**

Prereq: APH 443. Election of more than 3 credits per semester requires written 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)

**544 Experimental Photography. Cr. 3-6(Max. 9)**

Prereq: APH 441. Election of more than 3 credits per semester requires written consent of instructor. Open only to photography majors. Material fee as indicated in *Schedule of Classes*. Examination of various historic processes and their contemporary applications: Cyanotype, Gum-Bichromate, and Van Dyke Brown printing, toners, and hand-applied emulsions. (I)

**545 Selected Topics in Photography. Cr. 3-6(Max. 9)**

Prereq: APH 441. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Topics to be announced in *Schedule of Classes*. (I)

**546 Photography Seminar. Cr. 3-6(Max. 9)**

Open only to photography majors. Election of more than 3 credits per semester requires written 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)

**585 Directed Projects: Photography. Cr. 3-9(Undergrad. max. 15; grad. max. 30)**

Prereq: written consent of instructor. Individual problems. (F,W)

**740 Graduate Photography. Cr. 3-9(Max. 24)**

Election of more than three credits per semester requires written consent of instructor. Individual problems in advanced photography. (F,W)

**885 M.F.A. Studio: Photography. Cr. 6-9(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)

**548 Advanced Intaglio Printmaking. (APR 748). Cr. 3-6(Max. 21)**

Prereq: APR 348. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Advanced problems in intaglio. Multiplate and rollup color printing. Photo intaglio techniques, experimental media. (F,W)

**549 (APR 349) Advanced Lithography. (APR 749). Cr. 3-6(Max. 21)**

Prereq: APR 349. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Advanced problems in lithography. Black and white, multicolor, transfer methods. (F,W)

**550 (APR 350) Advanced Serigraphy. (APR 750). Cr. 3-6(Max. 15)**

Prereq: APR 350. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Advanced problems in screen printing. Photo transfer, multi-media approaches. (I)

**551 Advanced Relief Printmaking. (APR 751). Cr. 3-6(Max. 21)**

Prereq: APR 350 and 549. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Specialized problems involving experimental use of various print media and technologies; relief, collagraph, intaglio. (I)

**553 The Handmade Book. (APR 753). Cr. 3 (Max. 12)**

Material fee as indicated in *Schedule of Classes*. Introduction to the fundamentals of the handmade book: binding, paper selection, typesetting, construction. Designing and producing handmade books incorporating original artwork. Exploring various types of book design. (Y)

**569 (APR 269) Advanced Papermaking. Cr. 3-6(Max. 9)**

Prereq: APR 269. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Advanced problems involving coloring, sheet making, sizing and sculptural use of the medium. (I)

**584 Directed Projects: Printmaking. Cr. 3-6(Undergrad. max. 15; grad. max. 30)**

Prereq: written consent of instructor. Individual problems. (F,W)

**748 (APR 548) Graduate Intaglio. Cr. 3-9(Max. 21)**  
Prereq: APR 348. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Advanced problems in intaglio. Multiplate and rollup color printing. Photo intaglio techniques, experimental media. (F,W)

**749 (APR 349) Graduate Lithography. (APR 549). Cr. 3-9(Max. 21)**  
Prereq: APR 349. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Advanced work in lithography. (F,W)

**750 (APR 350) Graduate Serigraphy. (APR 550). Cr. 3-9**  
Election of more than 3 credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Advanced work in serigraphy. (I)

**751 (APR 551) Graduate Relief and Collograph Printmaking. Cr. 3-6**  
Prereq: graduate standing in art. Graduate-level problems in woodcut, linocut, constructed relief and collograph printmaking. (Y)

**753 (APR 553) Graduate Bookmaking. Cr. 3**  
Material fee as indicated in *Schedule of Classes*. Advanced work in bookmaking. (Y)

**884 M.F.A. Studio: Printmaking. Cr. 6-9(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)

**516 (ASL 316) Advanced Sculpture: Non-Figurative. (ASL 616)(ASL 716). Cr. 3-6(Max. 18)**  
Prereq: ASL 316. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Continuation of ASL 316. Emphasis on advanced and self-directed problems in non-figurative sculpture. (T)

**517 (ASL 317) Advanced Sculpture: Figurative. (ASL 617)(ASL 717). Cr. 3-6(Max. 18)**  
Prereq: ADR 309 and ASL 317. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Emphasis on advanced and self-directed problems in figurative sculpture. (Y)

**518 Sculpture: Advanced Technology. Cr. 3-6(Max. 18)**  
Prereq: ASL 516 or 517. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. One major project which explores the application of non-traditional materials and technologies: research, industrial liaisons, equipment. (I)

**582 Directed Projects: Sculpture. Cr. 3-6(Undergrad. max. 15; grad. max. 30)**  
Prereq: written consent of instructor. Individual problems. (F,W)

**616 (ASL 316) Non-Figurative Sculpture. (ASL 516) (ASL 716). Cr. 3-6(Max. 18)**  
Prereq: ASL 516. Open only to sculpture majors. Election of more than 3 credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Continuation of ASL 516. Expansion of concepts and expressive form. Emphasis on portfolio of work and professional plans. (T)

**617 (ASL 317) Figurative Sculpture. (ASL 517)(ASL 717). Cr. 3-6(Max. 18)**  
Prereq: ASL 517 and 518. Open only to sculpture majors. Election of more than 3 credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Continuation of ASL 517. Emphasis on concepts and expressive form, portfolio of work and professional plans. (Y)

**716 (ASL 316) Graduate Problems in Non-Figurative Sculpture. (ASL 516)(ASL 616). Cr. 3-9(Max. 18)**  
Prereq: ASL 516 or equiv. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Self-directed problems. Emphasis on graduate study and exhibition awareness. (T)

**717 (ASL 317) Graduate Problems in Figurative Sculpture. (ASL 517)(ASL 617). Cr. 3-9(Max. 18)**  
Prereq: ASL 617 or equiv. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Self-directed problems. Emphasis on graduate study and exhibition awareness. (Y)

**882 M.F.A. Studio: Sculpture. Cr. 6-9(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)

**595 Making Culture. Cr. 3**  
Prereq: senior or graduate standing; prior consent of instructor. Seminar devoted to questions about the interrelations of culture production, the history of artists' consciousness, personal freedom, and social responsibilities. Emphasis on close reading and discussion of seminal texts as a vehicle for stimulating informed consideration of the issues. (Y)

**798 Seminar in Art. Cr. 2**  
Directed reading, research, bibliography. Offered fall semester only. (F)

**799 Master's Essay Direction. Cr. 1-3** (F,W)

**870 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)

**897 Master of Fine Arts Colloquium. Cr. 3**  
Open only to M.F.A. students. Special programs by visiting lecturers, graduate staff and graduate students. (W)

**898 Master of Fine Arts Seminar. Cr. 3**  
Open only to M.F.A. students. Concepts of art; contemporary art problems. (F)

**899 Master's Thesis Research and Direction. Cr. 1-8(8 req.)** (F,W)

## ART HISTORY (A H)

**507 Art and Archeology of Ancient Egypt. Cr. 3**  
Prereq: A H 111, 112. An introduction to the history and development of Egyptian artistic style in architecture, sculpture, painting and the applied arts; historical, social and religious background. (I)

**509 (W) 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)

**520 Early Greek Art. Cr. 3**  
Prereq: A H 111, 112. 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)

- 521 Hellenistic and Roman Art. Cr. 3**  
Prereq: A H 111, 112. Sculpture and painting in the Hellenistic kingdom and in Republic and Imperial Rome. (I)
- 522 Ancient Greek and Roman Architecture. Cr. 3**  
Prereq: A H 111, 112. Development of structural and ornamental traditions for various building types. Design and landscaping of cities and sanctuaries. (I)
- 525 Ancient Rome. Cr. 3**  
Prereq: A H 111, 112. Development of Rome into an imperial capital. Design, function and political significance of public monuments in the city. (I)
- 526 Classical Greek Art. Cr. 3**  
Prereq: A H 111, 112. Greek painting, sculpture and architecture of the fifth and fourth centuries B.C. Emphasis on decorative programs of temples and cult statues. (I)
- 530 Early Christian and Byzantine Art. Cr. 3**  
Prereq: A H 111, 112. The evolution of Christian imagery. (B)
- 531 The Ancient City of Athens. Cr. 3**  
Prereq: A H 111, 112. The history of Athens as an urban center in antiquity. Public monuments, buildings and landscape as reflecting the city's aspirations and fortunes. (I)
- 532 The Classical Tradition in Architecture. Cr. 3**  
Prereq: A H 111, 112. Architecture inspired by classical antiquity in renaissance Italy, baroque England, and colonial and federal America. (I)
- 538 Women and Visual Culture in the Middle Ages. Cr. 3**  
Prereq: A H 111, 112, 341, or consent of instructor. Role of women in production of medieval visual culture, and ways in which visual images reflect attitudes and beliefs about gender in the middle ages. (I)
- 541 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)
- 542 Art and Architecture of Medieval Spain. Cr. 3**  
Prereq: A H 111, 112. 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)
- 545 Romanesque Art and Architecture. Cr. 3**  
Prereq: A H 111, 112. 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)
- 548 The Illuminated Book. Cr. 3**  
Prereq: A H 111, 112. The pivotal role of the illustrated Christian manuscript from antiquity to the printed book. (B)
- 550 Early Renaissance in Italy. Cr. 3**  
Prereq: A H 111, 112. 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)
- 551 High Renaissance and Mannerism in Italy. Cr. 3**  
Prereq: A H 111, 112. The art of Leonardo, Raphael, Michelangelo, Titian, and their contemporaries. (I)
- 553 Northern European Painting in the Fourteenth and Fifteenth Centuries. Cr. 3**  
Prereq: A H 111, 112. Northern painting from its sources in the Franco-Flemish manuscript tradition and Bohemian schools to the great masters of the fifteenth century. (B)
- 555 Flemish and German Painting in the Sixteenth Century. Cr. 3**  
Prereq: A H 111, 112. Development of Flemish and German painting from 1475 to 1600, with emphasis on the art of Bosch, Breugel, Durer, Grunewald and Holbein. (B)
- 560 Baroque Art and Architecture in Italy, Spain and France. Cr. 3**  
Prereq: A H 111, 112. Art and architecture in Papal Rome and at the courts of Madrid and Versailles, including Caravaggio, Bernini, Borromini, Velasquez, and Poussin. (B)
- 561 Flemish and Dutch Painting in the Seventeenth Century. Cr. 3**  
Prereq: A H 111, 112. Netherlandish painting in the cultural context of Catholic, aristocratic Flanders and the Protestant, middle-class Dutch republic; Rubens, Van Dyck, Hals, Rembrandt and Vermeer. (I)
- 570 Nineteenth Century European Painting. Cr. 3**  
Prereq: A H 111, 112. Major styles, developments and masters. (B)
- 571 Trends in Nineteenth Century Art. Cr. 3**  
Prereq: A H 111, 112. Topics to be announced in *Schedule of Classes*. (B)
- 572 Twentieth Century Art. Cr. 3**  
Prereq: A H 111, 112. Specific topics to be announced in the *Schedule of Classes*. (B)
- 573 American Art from the Colonial Period to 1913. Cr. 3**  
Prereq: A H 111, 112. American painting, sculpture and architecture from its earliest appearance in Colonial times to the Armory Show of 1913. (Y)
- 574 Surrealism. Cr. 3**  
Prereq: A H 111, 112. Literary and artistic history of these movements; their development in Germany, France and America. (B)
- 575 Contemporary American Art. Cr. 3**  
Prereq: A H 111, 112. Major developments in American painting and sculpture from the Armory Show to the 1970s. (I)
- 576 German Expressionism. Cr. 3**  
Prereq: A H 111, 112. 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)
- 582 Precolumbian Art of South and Central America. Cr. 3**  
Prereq: A H 111, 112. 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)
- 589 Museums in Art History. Cr. 3**  
Prereq: A H 111, 112. 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)
- 590 Directed Study. Cr. 3**  
Prereq: consent of instructor. Open only to art history majors. Supervised advanced reading and research in the history of art. (F,W)
- 654 History of the Print. Cr. 3**  
Overview of the graphic arts from the fourteenth through the twentieth century; emphasis on the technical evolution of the medium as well as on the major artists who excelled in it. (F,W)
- 670 Nineteenth Century German Painting. Cr. 3**  
Winkelmann, Goethe, Mengs; Novalis and Schelling; Friedrich and Runge; the Nazarenes and the revival of panel and fresco painting; the



"German Romantics," Feuerbach, Bocklin, von Mares; Liebermann, Slevogt and Corinth. (B)

**693 Studies in Museum Theory and Criticism. Cr. 3-6**

Prereq: prior consent of instructor. Open only to art history majors. Advanced studies of art museum and exhibition theory and criticism from the Renaissance to the present day; emphasis on discovering and interpreting primary evidence. (Y)

**695 Museum Practices. Cr. 3**

Prereq: written consent of director of museology program. Open only to art history majors. History of public collections in Europe and the United States; introduction to museum administration and management. (Y)

**720 Seminar in Greek and Roman Art. Cr. 3-6(Max. 9)**

Election of more than three credits per semester requires written consent of instructor. Topics to be announced in *Schedule of Classes*. (B)

**730 Seminar in Early Christian and Byzantine Art. Cr. 3-6(Max. 9)**

Election of more than three credits per semester requires written consent of instructor. Topics to be announced in *Schedule of Classes*. (B)

**750 Seminar in Renaissance Art. Cr. 3-6(Max. 9)**

Election of more than three credits per semester requires written consent of instructor. Topics to be announced in *Schedule of Classes*. (Y)

**770 Seminar in Modern Art. Cr. 3-6(Max. 9)**

Election of more than three credits per semester requires written consent of instructor. Topics to be announced in *Schedule of Classes*. (F,W)

**779 Studies in Art History. Cr. 3(Max. 9)**

Open only to graduate students in art history. Graduate students attending a scheduled 500-level course pursue advanced research on topics related to the course. (F,W)

**780 Seminar in Ethnographic Art. Cr. 3-6(Max. 9)**

Election of more than three credits per semester requires written consent of instructor. Topics to be announced in *Schedule of Classes*. (I)

**788 Museum Internship. Cr. 8 (Max. 24)**

Prereq: admission to museology program. On-the-job training program in museum research and procedures at the Detroit Institute of Arts and other participating museums. (T)

**789 Studies in Connoisseurship. Cr. 3**

Prereq: admission to museology program or written consent of instructor. Problems of authentication, attribution, provenance, and conservation, with the assistance of the curatorial staff of the Detroit Institute of Arts. (Y)

**799 Master's Essay Direction. Cr. 1-3**

(F,W)

**899 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, Benjamin J. Burns (Visiting), Jack Kay, Edward J. Pappas, Raymond S. Ross (Emeritus), George W. Ziegelmueller

## Associate Professors

William A. Boyce, Jackie Byars, J. Daniel Logan (Emeritus), James S. Measell, Larry D. Miller, Matthew W. Seeger, Lawrence Silverman (Emeritus), John W. Spalding, Jack W. Warfield (Emeritus)

## Assistant Professors

Jack E. Esco, Mark L. McPhail, Murali Nair, Robert Steele, Richard Wright

## Lecturers

John B. Buckstaff, Ruth A. Seymour

## Graduate Degrees

**MASTER OF ARTS** with a major in *Communication and emphases in public relations and organizational communication; radio-television-film; speech communication education; speech communication; performance studies; or communication studies.*

**DOCTOR OF PHILOSOPHY** with a major in *Communication and emphases in speech communication; radio-television-film; or communication studies.*

The Department offers a wide variety of graduate degree programs from among its several academic areas. In the area of communication studies, the M.A. and Ph.D. programs lead the advanced student into study and research in all areas of communication, with an in-depth treatment and understanding of each.

In the area of speech communication, the Department offers the M.A. and the Ph.D. degree programs. At the M.A. level, students may develop programs emphasizing communication and rhetoric, public relations and organizational communication, performance studies, or general speech. The Ph.D. program is designed to promote study and research in all aspects of the communication process. An M.A. degree program may be developed in speech education. The program includes courses in pedagogy, with recommended cognate courses from the College of Education.

In the area of radio-television-film, the Department offers the M.A. and Ph.D. degrees. The M.A. student may follow a *Plan of Work* that integrates studio courses and research seminars, preparing for a career in broadcast or cable television production and management, a job in the corporate film and video industry, or teaching at the college level. The Ph.D. program stresses research courses and seminars in preparation for a career of teaching and research in a specialized area of radio-television communication or film studies. Cognate study in other departments is essential, especially in the case of film.

Facilities for individual research programs include radio/television studios, a radio station, a film laboratory, small-group laboratories and mainframe as well as microcomputer access. Graduate students are encouraged to participate in faculty research projects as well as to initiate their own. The Department uses the industrial, cultural, 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 14. The Department requires that the applicant have a 3.0 (B=3) honor point average. A minimum of fifteen semester credits in the area of specialization is required.

**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 in a major (total credits determined by major area of study).*

The graduate program should be worked out 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. SPB 700 must be included in all *Plans of Work* and must be taken at the earliest opportunity.

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 143–144 and 20–30, respectively.

Essays or theses may be written in any of the principal fields: speech communication; communication studies; public relations and organizational communication; performance studies; radio–television–film; speech education; or in any combination of these fields with related fields. A final oral examination is normally required.

### CONCENTRATION REQUIREMENTS

**Speech Communication:** Students in this area are required to take SPB 700 and at least one methodology course to aid them in the preparation of the essay or thesis. The *Plan of Work* should reflect a reasonable concentration of courses in one of the subareas of speech communication, communication theory, or performance studies.

**Communication Studies:** The M.A. degree in communication studies encourages students to sample broadly from the courses offered in the various areas of the Department, yet allows a student to construct a program related to his/her particular interests. Students must complete 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 700 and two methods courses from the following or other methods courses approved by the adviser—SPC 725, SPC 726, SPR 758, SPR 751, SPR 759, SPR 553. One theory course is required from the following: SPC 719, SPC 729, SPC 721, SPR 551, SPR 557, SPR 770. One course is required from each of the following areas (minimum of nine credits): speech communication (SPC 712, SPO 752, SPC 611, SPC 620, SPC 617, SPC 625); journalism (SPJ 500, SPJ 502, SPJ 521, SPJ 630); radio–television–film (SPR 555, SPR 759, SPF 502, SPF 506, SPF 852).

Plan A requires eleven credits in electives including an eight-credit thesis. Plan B requires eleven credits in elective courses including a three-credit essay.

**Performance Studies:** Those specializing in performance studies must take SPO 558, 656, 752 and at least two performance courses. If Plan C is elected, a one-hour performance recital is required.

**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 700, SPC 510, SPC 516, SPC 625, SPJ 630, SPC 716 or SPC 724. One course should be selected from the following methods courses: SPC 725, SPC 726, SPR 758, SPR 553. Two courses should be selected from the following electives (except for students under Plan A, who should select one course): SPC 520, SPC 611, SPC 617, SPC 619, SPC 620, SPC 712, SPC 721, SPC 726. One course should be selected from the following radio–television–film and journalism electives: SPR 540, SPR 551, SPR 553, SPR 759, SPJ 502. At least one additional elective is required from Marketing, or other Departments as appropriate.

The total minimum required credits from the electives above is thirty-three. Plan A requires the student complete an eight-credit thesis for a total minimum of thirty-eight credits. Plan B requires the student complete a three-credit essay for a total minimum of thirty-six hours. Plan C requires the student to enroll in SPC 722, Professional Issues in Applied Communication for a total minimum of thirty-five credits. Plan C is highly recommended.

**Radio, Television, and Film:** All students must take SPB 700 and under plan A or B either SPR 751 or 759 must be included in the *Plan of Work*, as well as one additional radio–television–film course numbered above 700. At least two of the following are also required: SPR 551, SPR 553, SPR 555, SPR 557; SPF 502, or SPF 506. The same course election requirements apply to Plan C, but a minimum of thirty-five credits in course work and a final written comprehensive examination are required.

**Speech Communication Education (Pedagogy):** Students in this area should elect SPC 606, 607 and 781; SPR 551. Election of all course work must be approved by the adviser.

## 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 analytical 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.
2. To provide intensive inquiry into such professional communication areas as radio, television, and film, organizational communication and public relations.
3. To prepare students for communication related careers in public service and private business organizations.
4. To prepare students as communication educators.

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14. In addition, applicants to the Ph.D. program in this Department must satisfy the following criteria.

The Department requires an M.A. degree with a 3.3 (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 strongly recommended and is required of all applicants for graduate assistantships. 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 should provide three letters of recommendation verifying academic interest and ability. The applicant should consult the Departmental Graduate Officer as soon as possible.

**DEGREE REQUIREMENTS** consist of a minimum of ninety credits beyond the baccalaureate degree (the speech communication concentration requires ninety-three credits), 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 Fine, Performing and Communication Arts and the Graduate School governing graduate scholarship and degrees; see pages 143–144 and 20–30, respectively.

Additional Departmental requirements include: (1) SPB 700 or its equivalent; (2) a departmental major and a minor outside the Department; (3) four courses (five courses for speech communication) in research methodologies germane to the student's dissertation research and ultimate personal objectives (proficiency in a language useful 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 research in the candidate's field of study. Specific guidelines for each area of specialization are available from the Departmental Graduate Officer. 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 32. 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. Contact the Department for information.

## GRADUATE COURSES

*The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.*

### BASIC SPEECH (SPB)

**700 Introduction to Graduate Study in Communication.**  
Cr. 3

Required during first twelve credits of speech graduate study. (Y)

**790 Directed Study.** Cr. 1–2(Max. 4)

Prereq: written consent of chairperson, adviser and graduate officer. (T)

**791 Directed Study: Ph.D.** Cr. 1–3(Max. 4)

Prereq: written consent of chairperson and graduate officer. Open only to doctoral students. Research in major field for advanced graduate students. (T)

**799 Master's Essay Direction.** Cr. 1–3

Prereq: consent of adviser. (T)

**899 Master's Thesis Research and Direction.** Cr. 1–8(8 req.)

Prereq: consent of adviser. (T)

**999 Doctoral Dissertation Research and Direction.**  
Cr. 1–16 (Max. 30)

Prereq: consent of doctoral adviser. Offered for S and U grades only. (T)

### SPEECH COMMUNICATION (SPC)

**503 Communication Ethics.** Cr. 3

Issues of responsible communication in a variety of contexts including mass, organizational, and interpersonal communication. (B)

**504 Communication in the Black Community.**

(S E 537)(LIN 504). Cr. 3

Sociolinguistic and rhetorical analysis of speech and language behavior among Afro-Americans; linguistic history and development of black English. Related issues concerning the education of black children. (Y)

**510 Speech Writing.** Cr. 3

Prereq: SPC 210 or 211 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)

**516 Communication and Public Relations.** Cr. 3

Prereq: SPC 317 or graduate standing. Overview of selected topics in communication as applicable to current practices and 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)

**517 Human Communication and the Aged.** Cr. 3

Training in communication theories and skills relevant to the aged, current literature reviewed in preparation for devising strategies for improving interpersonal and institutional communication. (B)

**520 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)

**521 Theories of Persuasion. Cr. 3**

Prereq: SPC 210. Survey of theory and research on communication as social influence. (I)

**604 Cross-Cultural Rhetorical Theory. Cr. 3**

Prereq: SPC 210, 216 or graduate standing. Similarities and differences characterizing approaches to language and symbolic interaction in Eastern, Western and African culture. (B)

**606 Teaching Communication at the Secondary Level. (S E 606). Cr. 3**

Prereq: fifteen credits in speech. Philosophy, pedagogical issues, and methods for teaching speech in secondary schools. (I)

**607 Directing Forensics. Cr. 3**

Prereq: SPC 211. 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)

**611 Argument and Controversy. Cr. 3**

Prereq: SPC 210 or 211 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)

**617 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)

**619 Internship in Organizational Communication and Public Relations. Cr. 1-4(Max. 6)**

Prereq: written consent of instructor. Open only to majors. On-the-job observations and work experience in business, service, social, governmental, and industrial organizations. Emphasis on public relations and organizational communication. (T)

**620 Theories of Small Group Processes. Cr. 3**

Prereq: SPB 101, SPC 520. Theory and research on communication in the small, task-oriented group. (B)

**625 Organizational Communication. Cr. 3**

Prereq: SPC 325 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)

**712 Contemporary Political Campaigns. Cr. 3(Max. 6)**

Prereq: SPC 210. Study of methods for analyzing political campaigns; a critical evaluation of presidential campaigns from 1960 to the present. (F)

**713 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)

**716 Interorganizational Relations and Public Relations. Cr. 3**

Prereq: SPC 625 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)

**719 Classical Rhetorical Theory. Cr. 3**

Prereq: SPC 210 or 211 or classical civilization major. Critical analysis of the Sophists, Plato, Aristotle, Cicero, and others on rhetoric. (B)

**721 Communication Theory. Cr. 3**

Prereq: SPC 521. 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)

**722 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)

**724 Organizational Communication Consulting. Cr. 3**

Prereq: SPC 625 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)

**725 Rhetorical Criticism. Cr. 3**

Prereq: SPC 210 or consent of instructor. 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)

**726 Behavioral Research Methods in Speech Communication I. Cr. 4**

Student computer account required. Methods of data collection and analysis in communication research, approaches to measurement, research design, and other quantitative methods of communication research. (F)

**728 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)

**729 Contemporary Rhetorical Theory. Cr. 3**

Exploratory analysis of a broad spectrum of recent works relevant to the art of discourse. (B)

**781 Seminar in Speech Education I. Cr. 3**

Philosophy and approaches to teaching speech on the college level with particular emphasis on teaching SPB 200, or its equivalent. Special topics include objectives, evaluation, motivation and teaching strategies. (F)

**782 Student Teaching of Speech Communication on the College Level. Cr. 3**

Prereq. or coreq: SPC 781. Offered for S and U grades only. (I)

**784 Seminar in Speech Education II. Cr. 3**

Prereq: SPC 781. Continuation of SPE 781. (I)

**812 History of Public Address. Cr. 3**

Topics to be announced in *Schedule of Classes*. (I)

**822 Advanced Studies in Language and Communication. (LIN 822). Cr. 3(Max. 12)**

Topics to be announced in *Schedule of Classes*. (I)

**826 Behavioral Research Methods in Speech Communication II. Cr. 4**

Prereq: SPC 726. Student computer account required. Continuation of SPC 726. (I)

**829 Special Topics in Speech Communication. Cr. 3 (Max. 9)**

Topics to be announced in *Schedule of Classes*. (I)

**835 Advanced Study in Rhetorical Criticism. Cr. 3**

Prereq: SPC 725 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)**

**502 Studies in Film History. Cr. 4(Max. 12)**

Prereq: FLM 201 or FLM 202; junior standing or above. Material fee as indicated in *Schedule of Classes*. 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*. (Y)

**506 Documentary and Non-Fiction Film. Cr. 4**  
Prereq: FLM 201 or FLM 202; junior standing or above. Material fee as indicated in *Schedule of Classes*. Study of the non-fiction film made for a social, cultural, or political purpose; screening and analysis of selected films. (Y)

**525 Screenwriting. Cr. 3**  
Prereq: SPR 221 and ENG 301; 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)

**540 (SPR 540) Techniques of Film/Video Production. Cr. 4**  
Prereq: completion of ten credits of film studies courses; junior standing or above. Material fee as indicated in *Schedule of Classes*. Experience with the preparation, shooting and editing of video projects in film-style production. (T)

**544 Film Production. Cr. 4**  
Prereq: SPF 540. 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)

**546 Motion Picture Animation Techniques. Cr. 3**  
Prereq: junior standing or above. Material fee as indicated in *Schedule of Classes*. Theory and application of various forms and styles of film animation. (B)

**852 Seminar in Film. Cr. 3(Max. 9)**  
Topics vary with instructor. Consult area office. (B)

## JOURNALISM (SPJ)

**500 History of American Journalism. Cr. 3**  
Prereq: one course in American history. Development of the American press from colonial times to the present. (T)

**502 Communication Law. Cr. 3**  
Prereq: junior or senior standing. Libel, invasion of privacy, contempt of court, copyright, pornography and obscenity. Laws affecting newspapers and other mass media as businesses. (T)

**505 Computer Graphics and Typography. Cr. 3**  
Prereq: SPJ 210, 321. Newspaper and other print media graphics using computers; use of various popular PC programs on Macintosh computers; type selection and preparation for publishing. (T)

**521 Newsletters and Corporate Publications. Cr. 3**  
Prereq: SPJ 321. Material fee as indicated in *Schedule of Classes*. Editing journalism newsletter; field trips to area magazines; editing internal publications. Journalism skills course. (T)

**525 News Management. Cr. 4**  
Prereq: SPJ 210, 321. Theory and practice of newsroom management; how to supervise; how to hire and direct news staffs. (Y)

**530 Publishing. Cr. 4**  
Prereq: SPJ 210, 321, 322, or consent of instructor. 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)

**531 Investigative Reporting. Cr. 4**  
Prereq: SPJ 210 and 321. Advanced reporting techniques involving use of Freedom of Information Act and computer-assisted data base searches; accessing public records. (I)

**630 Corporate Publications. Cr. 3**  
Prereq: graduate standing, SPJ 521 or 530; or consent of instructor. 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)

**631 Advanced Investigative Reporting. Cr. 4**  
Prereq: SPJ 531. Advanced use of Freedom of Information Act and computer-assisted reporting techniques in a major project. (Y)

## PERFORMANCE STUDIES (SPO)

**505 Advanced Voice and Articulation. Cr. 3**  
Prereq: SPO 204 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)

**550 Advanced Performance Studies. Cr. 3**  
Prereq: SPO 250 or equiv. Study of prosody systems and analysis of forms of poetry; study of scene, role and gesture as elements of point of view in prose fiction. Application of oral performance techniques through consideration of theories of oral interpretation and literature. (I)

**555 Performance Workshop. Cr. 1-3(Max. 6)**  
Prereq: SPO 250 or equiv. Workshop in conjunction with oral interpretation activities: festivals, contests, public performances such as Interpreters Theatre productions and Readers' Bureau programs. (B)

**558 Interpreters Theatre. Cr. 3**  
Prereq: SPO 250 or equiv. Theory and practice of theatres of oral interpretation: readers theatre, chamber theatre, choral reading, and multiple interpretation. Directing experience and participation for beginning and advanced students in theatre of the mind. (B)

**559 The Art of Storytelling. Cr. 3**  
Prereq: SPO 250 or equiv. Analysis and performance of types of oral literature, with study of interrelationships between storyteller and audience. (B)

**656 Performance Studies in the Social Context. Cr. 3**  
Prereq: SPO 250 or equiv. Oral interpretation in the social context. Sociological, psychological, educational and aesthetic considerations of program planning in the community using oral history and literature. Problems in audience analysis, collection and choice of materials, adaptation, rehearsal and presentation of materials. (B)

**752 The History of Oral Traditions. Cr. 3**  
The study of oral traditions from pre-Greek civilizations through the twentieth century. Methods and techniques relating to literary and performance theories. (B)

**898 Seminar in Performance Studies. Cr. 3 (Max. 6)**  
Advanced research into special topics. (B)

## RADIO AND TELEVISION (SPR)

**521 Advanced Radio-Television-Film Writing. Cr. 3(Max. 6)**  
Prereq: SPR 221; junior standing or above. Principles and practice in creating the full-length dramatic or documentary script for broadcast or film production. (Y)

**531 Radio Production. Cr. 4**  
Prereq: SPR 421; junior standing or above. Material fee as indicated in *Schedule of Classes*. Theory and practice in broadcast production techniques and experimentation with creative audio production. (T)

**540 Techniques of Film/Video Production. (SPF 540). Cr. 4**  
Prereq: SPR 421; junior standing or above. Material fee as indicated in *Schedule of Classes*. Experience with the preparation, shooting and editing of video projects in film-style production. (T)

**541 Television Production. Cr. 4**

Prereq: SPR 421; junior standing or above. Material fee as indicated in *Schedule of Classes*. Theory and practical application of techniques used in television production; utilization of graphic materials, design and staging concepts, lighting techniques and studio operation; the role of the television producer-director. (T)

**542 Director's Workshop. Cr. 4**

Prereq: SPR 531, 540, and 541; senior standing or above; production-ready script; written consent of instructor. Material fee as indicated in *Schedule of Classes*. Organization and execution of the film and video director's tasks through production of a major creative project. (Y)

**551 Mass Communications and Society. Cr. 3**

Prereq: completion of at least eighteen credits in SPR courses; senior standing or above. Theoretical and practical research on the social functions and effects of the mass media. (T)

**553 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)

**555 Electronic Media Management. Cr. 3**

Prereq: completion of at least twelve credits in SPR courses; junior standing or above. Principles of broadcast station and cable management; emphasis on business management, marketing, sales and audience analysis. Business plan, including market and media survey, required. (Y)

**557 International Communications. Cr. 3**

Prereq: SPR 201; junior standing or above. World mass communications systems, organizations and objectives. Political, economic and legal foundations of international media systems. (B)

**667 Internships in Radio-Television-Film. Cr. 1-4(Max. 8)**

Prereq: SPR 531 or 540 or 541; senior standing or above; written consent of instructor. (T)

**668 Individual Projects in Radio-Television-Film. Cr. 3 (Max. 6)**

Prereq: SPR 531 or 540 or 541; senior standing or above; written consent of instructor. (T)

**750 Seminar in Mass Communications. Cr. 3(Max. 9)**

Topics vary according to instructor. Students should consult with area office. (Y)

**751 Seminar in Mass Media Research. Cr. 3 (Max. 9)**

Topics vary according to instructor. Students should consult with area office. (Y)

**756 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)

**758 Content Analysis of Mass Communications. Cr. 3**

Theory and practice in quantitative techniques for analyzing media content. (B)

**759 Criticism of Mass Media. Cr. 3**

Theory and practice in the aesthetic analysis of media content and form. (B)

**770 Mass Media and Political Communication. Cr. 3**

Mass media research methods for political communication studied and applied. (I)

**857 (I T 714) Seminar in Computer-Assisted Instruction. Cr. 4**

Design and use of computer-assisted instruction in education and training; development of interactive video instruction. (Y)

# DANCE

Office: 125 Matthaei Building; 577-4273

Chairperson: Georgia Reid

## Associate Professors

Eva Jablonowski-Powers, Ann Zirulnik (Emerita)

## Assistant Professor

Georgia Reid

## Lecturer

Linda Cleveland-Simmons

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 32. 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

The following courses, numbered 500-999, are offered for graduate credit. Courses numbered 500-699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090-499). Courses in the following list numbered 500-699 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 463.

## DANCE (DNC)

**500 Performance Tour. Cr. 1 (Max. 8)**

Prereq: DNC 561 or 661. Open by audition only. Development and performance of informal concerts for elementary, middle and secondary schools. (W)

**511 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)

**541 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)

- 542 Dance Notation II. Cr. 2**  
Prereq: DNC 541 or equiv. Continuation of DNC 541. (B;W)
- 546 Music and Dance in the Music Class II. (TED 546) (MED 558). Cr. 1-2**  
Prereq: consent of instructor. Continuation of DNC 544; added experience using the Orff instrumentation for accompaniment. (S)
- 555 Choreography II. Cr. 3**  
Prereq: DNC 455 or equiv. Selection of dance themes, construction of dances, small group studies. Aesthetic considerations, form and elements of performance. (B)
- 556 Choreography III. Cr. 3 (Max. 6)**  
Prereq: DNC 555. Process of creating an entire dance from one singular concept to a finished work; includes small group studies. (W)
- 561 Dance Company I. Cr. 1(Max. 8)**  
Prereq: admission by audition. Coreq: DNC 401 or 601. Performing company. Open to students interested in performing and/or choreographing. Four credits required for dance majors. (F,W)
- 571 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)
- 580 Repertory. Cr. 1-4(Max. 12)**  
Prereq: DNC 401 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)
- 581 Creative Dance for Children. (TED 581)(DNE 581). 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)
- 582 Creative Dance Movement for the Pre-School Child. (TED 582). Cr. 3**  
Creative dance activities; manipulative, musical, imaginative and kinesthetic approaches to movement. (W)
- 590 Independent Study in Dance. Cr. 1-4(Max. 12)**  
Prereq: major or minor in dance. Independent work in dance under faculty guidance. (T)

- 601 Technique Laboratory III. Cr. 1(Max. 8)**  
Prereq: DNC 401 or equiv. Modern Dance technique, advanced level. (F,W)
- 621 Advanced Ballet. Cr. 1(Max. 8)**  
Prereq: DNC 221 or equiv. Continuation of study in ballet technique with emphasis on allegro and adagio work. (F,W)
- 661 Dance Company II. Cr. 1(Max. 8)**  
Prereq: DNC 561 or equiv. Required for students in the choreography and performance emphasis. Admission by audition. Performing company. Performing, choreographic and/or production responsibilities. (F,W)
- 783 Historical Foundations of Dance. Cr. 2**  
Evolution of dance from primitive times to early twentieth century art dance. Historical analysis of folk rituals, court and theatrical dance. Social influences on dance as an art. (B)
- 785 Laboratory in Choreography. Cr. 2**  
Prereq: DNC 555. Preparation for master's thesis or project in choreography. (F)
- 799 Master's Essay and Project Direction. (DNE 799). 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)

- 581 (DNC 581) Creative Dance for Children. (TED 581). 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)
- 799 (DNC 799) 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:** 105 Schaver Music Building; 577-1795  
**Acting Chairperson:** Dennis J. Tini  
**Associate Chairperson:** Ray P. Ferguson  
**Academic Services Officer:** Margot Demarais

## Professors

Harold Arnoldi, Angelo M. Cucci (Emeritus), Mark F. DeLeonard (Emeritus), Ray P. Ferguson, James J. Hartway, Morris Hochberg (Emeritus), Malcolm M. Johns (Emeritus), Joseph A. Labuta, Robert F. Lawson (Emeritus), Graham Overgard (Emeritus), Wilbur J. Peterson (Emeritus), Peter J. Schoenbach, Dennis J. Tini, C. William Young (Emeritus)

## Associate Professors

Lillian J. Cassie (Emerita), Carol J. Collins (Emerita), Bohdan J. Kushnir (Emeritus), Doris Richards

## Assistant Professors

Janice Fulbright, James Lentini, Frank Murch (Emeritus), Richard Piippo, Deborah Smith, Mary Wischusen, Michael Zelenak

## Lecturers

Mark Kilstoff, Sammi Liebman, Matthew Michaels, Bruce Singer

## Adjunct Professor

David DiChiera

## Program Directors

Harold Arnoldi (brass), Joseph Fava (guitar), Ray Ferguson (organ), Janice Fulbright (voice), James Hartway (theory and composition), Mischa Kottler (piano), Joseph Labuta (music education), Matthew Michaels (jazz studies), Richard Piippo (strings), Peter Schoenbach, (woodwinds), Dennis Tini (choral), Michael Zelenak (percussion)

## Affiliated Performance Faculty

Geoffrey Applegate (violin), Emily Austin (violin), Italo Babini (violoncello), Clement Barone (flute), Frances Brockington (voice), Keith Claeys (percussion), Rick Copeland (voice), Earl DeForest (saxophone), Lee Dyament (guitar), Joseph Fava (guitar), Paul Ganson (bassoon), Robert Gladstone (string bass), Marjorie Gordon (voice), Nathan Gordon (viola), Lana Gore (bayan), Oliver Green (clarinet), Carolyn Grimes (voice), Morris Hochberg (violin), William Horner (trumpet), Maxim Janowsky (string bass), Mischa Kottler (piano), Vladislav Kovalsky (piano), Henry Janzen (viola), Gale Kramer (organ), Oscar LaGasse (tuba), Min-Duo Li (piano), Lawrence Liberson (clarinet), Glenn Mellow (viola), Ervin Monroe (flute), Susan Mutter (French horn), Theodore Oien (clarinet), Salvatore Rabbio (percussion), Joseph Skrzynski (trombone and baritone), Anna Speck (voice), Michael Stockdale (guitar), Gordon Stump (trumpet), Darwin Swartz (piano), Patricia Terry-Ross (harp), George Troia (trombone), Sam Tundo (percussion), Brian Ventura (oboe), Eugene Wade (French horn), Robert Williams (bassoon)

## 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

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 14. 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-five 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 Officer 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 'F' 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 143-144 and 20-30, 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	<i>credits</i>
Theory and Music History (minimum of six credits in each, other than MUH 530 and directed study courses)	14
MUH 530	3
MUP 72X or MUA 78X	2
Music electives or cognates	5
MUH 899	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	<i>credits</i>
Music Theory — from: MUT 506, 700, 702, 704, 710	13
Music History (other than MUH 530 and directed study courses)	6
MUH 530	3
MUP 72X or MUA 78X	2
MUH 899—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 710	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	<i>credits</i>
Music Theory — from: MUT 506, 700, 702, 704, 710 (max. 3 cr.)	13
Music History (other than MUH 530 and directed study courses)	6
MUH 530	3
MUP 72X or MUA 78X	2
MUH 899	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	<i>credits</i>
MUH 530	3
Music History (other than MUH 530 and directed study courses)	6
MUT 702 (and other Music Theory courses except directed study courses)	6
MUA 745, Advanced Conducting: Choral and Orchestral	6
MUH 737, Studies in Choral Literature	3
MUP 72X	2
MUA 78x	2
Electives	4
Graduation recital 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	<i>credits</i>
MUP—72X series—Principal Instrument (max. 12 credits)	9
MUA 746	3
MUA 788	1
Music Theory (other than directed study courses)	6
Music History (other than MUH 530 and directed study courses)	6
MUH 530	3
MUA 78X	2
Music Electives	2
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	<i>credits</i>
MUP 722	12
MUH 530	3
MUH 537, 538	6
MUH 632, 633	6
MUT 702	2
Performance electives (Choral Ensembles and/or Opera Workshop)	4
MUA 789 (Chamber Recital with paper)	1
MUP 829 (Solo Recital with paper)	1
Total:	35

**— 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	<i>credits</i>
Music Education—including MED 799	18
Music history (other than MUH 530 and directed study courses)	6
MUH 530	3
MUP 72X or MUA 78X	2
Electives	3
Total:	32

**FINANCIAL AID**

General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 32. 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.

**Louise Conklin Scholarship:** An award of \$250 available to any music major with an outstanding record in musicology, awarded by the music faculty in the Winter term.

**Avery Crew Scholarship:** An award of \$250 open to any music major studying voice, awarded by the music faculty in the Winter term.

**Delta Omicron Scholarship:** An award of \$200 open to any music major, awarded by the music faculty during the Winter term.

**Detroit Symphony Orchestra—Bradlin Scholarship:** An award of \$500 open to any outstanding music major who plays an orchestral instrument, awarded by the music faculty during the Winter term.

*Evangeline Dumesnil Memorial Scholarship:* An award of variable amount open to any music major, awarded by the music faculty during the Winter term.

*Friends of Music Scholarship:* An award of \$1000 open to a music major who is an outstanding performer, awarded by the music faculty during the Winter term.

*Marjorie Gordon Scholarship:* An award of \$100 open to a music major who is an outstanding vocal performer, awarded by audition. Contact the Head, Vocal Division, for details.

*LeFevre Scholarship:* An award of \$250 open to any music major, awarded by the music faculty during the Winter term.

*Liberace Foundation Scholarship:* An award of \$3,750 open to full-time majors in the jazz or classical curriculum. One minority scholarship is available. Awarded by the music faculty during the Winter term.

*Mu Phi Epsilon Scholarship:* An award of \$350 open to a music major who has maintained at least a 3.0 h.p.a., awarded by the music faculty during the Winter term.

*Rev. Charles H. Nicks, Jr., Memorial Scholarship:* An award of \$500 open to a music major concentrating in sacred music, with preference given to a student with a background in gospel music; awarded by the music faculty during the Winter term.

*Presser Foundation Scholarship:* An award of \$2,250 open to any music major, awarded by the music faculty during the Winter term.

*Joan Rossi Scholarship:* An award of \$1,000 offered to a music major who is an outstanding vocal performer; awarded by audition. Contact the Head, Vocal Division, for details.

*Tuesday Musicale Scholarship:* An award of \$500 open to any music major, awarded by the music faculty during the Winter term.

*Vocal Music Education Scholarship:* An award of \$250 open to any vocal music major, awarded by the music faculty during the Winter term.

## GRADUATE COURSES

*The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.*

## MUSIC THEORY (MUT)

**506 Advanced Orchestration. Cr. 3**  
Prereq: MUT 300. Arranging and scoring for orchestra in all forms of ensemble structure. (I)

**507 Band Arranging. Cr. 3**  
Prereq: MUT 216. Open only to music majors. (W)

**700 Eighteenth Century Canon and Fugue. Cr. 3**  
Prereq: MUT 211 or equiv. Complex contrapuntal techniques of the eighteenth century and the fugal style of the Baroque period. (I)

**702 Seminar in Music Analysis. Cr. 2 (Max. 8)**  
Prereq: MUT 406 or equiv. Various approaches and theories for analyzing music. (B)

**703 History of Music Theory. Cr. 3**  
Prereq: junior standing. Comprehensive survey from ancient Greeks to present. (I)

**704 Seminar in Twentieth Century Music. Cr. 2 (Max. 6)**  
Prereq: MUT 406 or equiv. Compositional techniques, writings of various contemporary composers, and modern notation. (B)

**705 Seminar in Music Theory Pedagogy. Cr. 2**  
Prereq: graduate standing. Study of materials, teaching techniques, philosophy and organization of music theory classes. (I)

**710 Graduate Composition. Cr. 3 (Max. 9)**  
Prereq: MUT 411. Advanced creative work in all of the idioms of twentieth century musical composition. (F,W)

**792 Directed Study in Theory. Cr. 2 (Max. 6)**  
Prereq: written consent of instructor, adviser and graduate officer. (F,W)

## MUSIC HISTORY (MUH)

**530 Music Research. Cr. 3**  
Prereq: graduate standing in music or consent of instructor. Music bibliography and research techniques. (F)

**535 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)

**537 Diction, Song Literature, and Pedagogy I. Cr. 3**  
Singers' diction in Italian, Latin, French and Spanish; pedagogical studies and methodology, solo and chamber repertoire in these languages. (B)

**538 Diction, Song Literature, and Pedagogy II. Cr. 3**  
Prereq: MUH 537. Singers' diction in German, Hebrew, Russian and English; pedagogical studies not covered in MUH 537, solo and chamber repertoire in these languages. (B)

**630 Music Criticism. Cr. 3**  
Prereq: upper division or graduate standing. Basics of music criticism and practical experience in writing criticism for publication. (Y)

**631 Studies in Afro-American Music. Cr. 3**  
Contributions of Afro-Americans to the development of music in the United States. (Y)

**632 Advanced Dramatic Music I. Cr. 3**  
Prereq: consent of instructor; grad. major prereq. and undergrad. major prereq. or coreq: MUH 530. Graduate level survey of opera, oratorio, and musical theatre history, development, and literature from Renaissance through the Classical period. (B)

**633 Advanced Dramatic Music II. Cr. 3**  
Prereq: MUH 632. Graduate level survey of opera, oratorio, and musical theatre history, development, and literature from the classical period to the present. (B)

**731 Studies in Medieval Music. Cr. 3**  
Prereq: MUH 530. Music from its origins to the Burgundian School. Special reports; research projects. (B)

**732 Studies in Renaissance Music. Cr. 3**  
Prereq: MUH 530. Fifteenth and sixteenth centuries, from Burgundian School through Palestrina. Special reports; research projects. (B)

**733 Studies in Baroque Music. Cr. 3**  
Prereq: MUH 530. From Monteverdi to 1750. Special reports; research projects. (B)

**734 Studies in Classical Music. Cr. 3**  
Prereq: MUH 530. From 1750 to 1825. Special reports; research projects. (B)

**735 Studies in Romantic Music. Cr. 3**  
Prereq: MUH 530. Nineteenth century. Special reports and research projects. (B)

**736 Studies in Twentieth Century Music. Cr. 3**  
Prereq: MUH 530. Special reports and research projects. (B)

**737 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)

**791 Directed Study in Music History. Cr. 3(Max. 6)**  
Prereq: consent of instructor and written consent of graduate officer. Research investigations in historical musicology. (T)

**899 Master's Thesis Direction. Cr. 1-8(8 req.)**  
Prereq: nine credits in graduate Music History or nine credits in MUT 710 and consent of adviser. (T)

## MUSIC PRIVATE INSTRUCTION (MUP)

The following courses (72x series) are for graduate 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 72x 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. or M.S. 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*.

**720 Organ. Cr. 1 or 3**  
Only open, by audition, to music majors in M.M. curriculum electing two or more courses. (F,W)

**721 Piano. Cr. 1 or 3**  
Only open, by audition, to music majors in M.M. curriculum electing two or more courses. (F,W)

**722 Voice. Cr. 1 or 3**  
Only open, by audition, to music majors in M.M. curriculum electing two or more courses. (F,W)

**723 Stringed Instruments. Cr. 1 or 3**  
Only open, by audition, to music majors in M.M. curriculum electing two or more courses. (F,W)

**724 Woodwind Instruments. Cr. 1 or 3**  
Only open, by audition, to music majors in M.M. curriculum electing two or more courses. (F,W)

**725 Brasswind Instruments. Cr. 1 or 3**  
Open only, by audition, to music majors in M.M. curriculum electing two or more courses. (F,W)

**726 Percussion Instruments. Cr. 1 or 3**  
Only open, by audition, to music majors in M.M. curriculum electing two or more courses. (F,W)

**727 Harp. Cr. 1 or 3**  
Only open, by audition, to music majors in M.M. curriculum electing two or more courses. (F,W)

**728 Classic Guitar. Cr. 1 or 3**  
Only open, by audition, to music majors in M.M. curriculum electing two or more courses. (F,W)

**829 Recital. Cr. 1**  
Prereq: consent of instructor. Degree recital. (T)

## MUSIC APPLIED (MUA)

**560 Business of Music. Cr. 2**  
A discussion of copyright law, performing rights organizations, contractual agreements, publishing and recording considerations, and other business concerns. (W)

**562 Voice Class II. Cr. 2 (Max. 4)**  
Prereq: MUA 172 or equiv. Voice building and repertoire; simple art songs. (F,W)

**564 Electronic Music Synthesis I. Cr. 3**  
Prereq: MUA 561. Introduction to analog synthesizer programming, equipment, and techniques. Students required to design sounds for use in a final project. (B:F)

**565 Electronic Music Synthesis II. Cr. 3**  
Prereq: MUA 564. Presentation of digital synthesis methods, including software-based, FM and other synthesis types. Emphasis on assignments leading to a final project. (B:W)

**566 Recording Workshop. Cr. 2 (8 req.)**  
Prereq: music industry management major, or consent of instructor. Experience with recording studio equipment and operation through assigned projects. Assignments include in-studio and on-site recordings. (T)

**568 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. (F)

**573 Harpsichord Class. Cr. 2 (Max. 8)**  
Prereq: MUA 379 or equiv. (F,W)

**745 Advanced Conducting: Choral and Orchestral. Cr. 3(Max. 9)**  
Prereq: MUA 268 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)

**746 Studies in Performance Practices. Cr. 3**  
Prereq: MUH 530. Historical and theoretical sources examined as aids to authentic and artistic interpretation of music from the Baroque era to the twentieth century. (Y)

**780 University Bands. Cr. 1**  
Prereq: consent of director. (F,W)

**781 University Symphony Orchestra. Cr. 1**  
Prereq: consent of director. (F,W)

**782 Jazz Lab Band. Cr. 1**  
Prereq: consent of director. (F,W)

**783 Men's Glee Club. Cr. 1**  
Prereq: consent of director. (F,W)

**784 Choral Union. Cr. 1**  
Prereq: consent of director. (F,W)

**785 Concert Chorale. Cr. 1**  
Prereq: consent of director. (F,W)

**786 Opera Workshop. (THR 786). Cr. 1 (Max. 8)**  
Prereq: consent of director. (F,W)

**787 Women's Chorale. Cr. 1**  
Prereq: consent of director. (F,W)

**788 Chamber Music and Special Ensembles. Cr. 1**  
All forms including: Collegium Musicum, jazz improvisation, percussion ensemble, trios and quartets, and wind ensemble. (F,W)

**789 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)

**552 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)

**555 Choral Conducting and Rehearsal Techniques. Cr. 3**  
Prereq: MUA 267 or equiv. Conducting and rehearsal methods and materials for secondary schools. (F)

**556 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)

**558 (DNC 546) Music and Dance in the Music Class II. (TED 546). Cr. 1-2**  
Prereq: MED 554. Continuation of MED 554; added experience using the Orff instrumentation for accompaniment. (S)

**559 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)

**652 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)

**653 Conducting and Operating the School Band. Cr. 2-3(Max. 6)**  
Individual instruction correlated with actual administration and direction of summer youth band. (S)

**654 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)

**655 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. (I)

**756 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)

**758 Advanced Conducting Techniques. Cr. 2-3**  
Prereq: MUA 268 or equiv. Structural analysis relating to rehearsal techniques and the interpretation of performance materials. Review and clarification of manual baton techniques and styles. (B)

**790 Directed Study in Music Education. Cr. 1-3(Max. 8)**  
Prereq: written consent of adviser and graduate officer. (T)

**799 Master's Essay Direction. Cr. 1-3(3 req.)**  
Prereq: consent of chairperson and adviser. (T)

**851 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)

**852 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)

**853 Instructional Technology in Music Education. Cr. 2-3**  
Principles and techniques for utilizing media (hardware and software) and systematic instruction in the school music program. (B)



# THEATRE

Office: 95 W. Hancock; 577-3508  
Chairperson and Director: Robert T. Hazzard

## Professors

N. Joseph Calarco, Robert T. Hazzard, Leonard Leone (Distinguished Professor Emeritus), David J. Magidson, Robert E. McGill, Nira Pullin, Anthony B. Schmitt, Russell E. Smith (Emeritus)

## Associate Professor

Thomas H. Schraeder

## Assistant Professors

Addell Austin Anderson, John Woodland

## Lecturers

Blair Anderson, Mary Copenhagen, M. Reid Downey, Stephen Hurley

## Academic Service Officers

Philip Fox II, Margaret E. Spear

## Graduate Degrees

### MASTER OF ARTS with a major in Theatre

MASTER OF FINEARTS with a major in Theatre and specializations in acting, directing, scenography, costume design, lighting design, and theatre 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 14. 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:

Literature/Criticism (two courses from:) ..... THR 704, 720, 525, 526, 510, 521  
Development of Drama ..... THR 512 and 612  
Electives: 13-14 credits (elected with adviser's approval,  
and including one course from: ..... THR 789, 810, 850, or 881).

A final oral examination on the thesis or essay and all course work is required.

## 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, directing, technical theatre, or theatre management.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 14. 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.

**NOTE:** Changes in the M.F.A. curricula can be made only with the written permission of the Director of the University Theatre Department.

At the end of the first year of work on the M.F.A. in Acting, Directing, Management, or Technical/Design, each student will be interviewed by members of the theatre faculty, and his/her work will be evaluated and critiqued. This interview will determine whether the student will proceed toward the three-year M.F.A. degree, or will pursue the M.A. degree in the second year, or be asked to leave the program.

**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.)

Repertory Theatre ..... THR 707. (Max. 18 credits)  
Studio ..... THR 601, 602, 705, 706, 711, 712. (Max. 18 credits)  
Development of Drama ..... THR 512 and 612.  
Teaching Internship ..... THR 819 and 820.  
Seminar in Theatre ..... THR 802.  
Literature/Criticism Sequence:  
THR 704 and 720, or THR 525 and 526, or THR 510 and 521.  
Electives: 4 credits (elected with adviser's approval).

The final project will consist of:

1. Presentation of ten to twelve audition selections. The audition program will be reviewed initially by the student's committee, and finally adjudicated by selected members of the theatrical profession.

2. An oral review of the student's audition work, based primarily on the adjudication team's comments.

The student is examined on all work done on his/her M.F.A. program.

**DIRECTION:** sixty credits.

The following curriculum outlines requirements for Hilberry Fellowship students pursuing a directorial major. Students NOT connected with the Hilberry Company may complete this major only by substitution of THR 505 (Play Direction I) and elective credits in place of THR 707 (Repertory Theatre).

Repertory Theatre .....	THR 707. (Max. 18 credits)
Studio .....	THR 601, 602, 705, 706, 711, 712. (Max. 18 credits)
Development of Drama .....	THR 512 and 612.
Direction .....	THR 506.
Teaching Internship .....	THR 819 and 820.
Seminar in Theatre .....	THR 802.
Literature/Criticism/History Sequence:	
	THR 704 and 720, or THR 525 and 526, or THR 510 and 521.

*The final project will consist of:*

1. After consultation with the theatre arts faculty and successful production of two full-length plays, the student will be required to direct, independently, a third full-length production presenting a problem of suitable complexity. The production will be evaluated by a committee of the theatre arts faculty. The student will furnish evidence of his/her responsibility for all aspects of production.
2. The student must submit a paper including a historical and critical analysis of the play and its dramatist, and a production notebook explaining the problems encountered and a description and evaluation of the solutions attempted.
3. The student will be examined on all work done on his/her program.

**THEATRE MANAGEMENT: sixty credits.**

Repertory Theatre .....	THR 707. (Max. 18 credits)
Studio .....	THR 601, 602, 705, 706, 711, 712. (Max. 18 credits)
Internship in Theatre Management .....	THR 717.
Directed Study .....	THR 790.
Seminar in Theatre .....	THR 802.
Literature/History Sequence:	
	THR 512 and 612, or THR 510 and 521, or THR 525 and 526.

Electives: ten credits elected with adviser's approval.

*The final project will consist of:*

presentation of a portfolio demonstrating the candidate's competence in the field of theatre management. The committee's review of this portfolio will serve as the basis of the final oral examination, which will occur at the end of the student's third year.

**SCENOGRAPHY/STAGE DESIGN AND TECHNICAL THEATRE: sixty credits.**

Repertory Theatre .....	THR 707 (Max. 18 credits).
Development of Drama .....	THR 512.
Theatre Aesthetics .....	THR 720.
Direction .....	THR 505.
Teaching Internship .....	THR 819-820.
Technical Theatre Core .....	THR 508, 509, 514, 515, 530, 606, 703, 713 and 714.
Electives .....	THR 510 and 521.

*The final project will consist of:*

1. The design of the costumes, settings, or lighting for a play at one of the University Theatres, or an assigned design/technical project. The student will work under the close supervision of one or more of the theatre arts faculty.
2. The student will submit a document consisting of a paper on his/her design or project, including sketches, renderings, technical drawings, and photographs of the realized design.
3. The student will be examined on all work done on his/her program.

**SCENOGRAPHY/STAGE LIGHTING DESIGN: sixty credits.**

Repertory Theatre .....	THR 707. (Max. 18 credits)
Development of Drama .....	THR 512.
Theatre Aesthetics .....	THR 720.
Play Direction .....	THR 505.
Teaching Internship .....	THR 819, 820.
Technical Theatre Core .....	THR 501, 508, 514, 530, 531, 609, 703, 708, 714.
Electives: three credits (elected with adviser's approval).	

*Final project:* (see above, under: Scenography/Stage Design and Technical Theatre).

**STAGE COSTUMING: sixty credits.**

Repertory Theatre .....	THR 707. (Max. 18 credits)
Development of Drama .....	THR 512.
Play Direction .....	THR 505.
Technical Theatre Core .....	THR 502, 606, 608, 703, 714, 720,
	and two courses from: THR 503, 508, 530.
Teaching Internship .....	THR 819 and 820.
Electives: seven credits (elected with adviser's approval).	

*Final project:* (see above, under: Scenography/Stage Design and Technical Theatre).

**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 14. 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 32. See also the Academic Regulations section of the College, 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.

## Scholarships

*National Costumers Association Memorial Endowment Fund:* An award of variable amount open to any student majoring in theatre arts with an emphasis on costuming. Contact the Department for Details.

*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.

*Leonard and Mary Zudick Theater Endowed Scholarship Fund:* An award of variable amount open to any student enrolled in the theatre program. Contact the Chairperson of the Department for Details.

## GRADUATE COURSES (THR)

The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.

### 501 Theatre Costuming I. Cr. 3

Prereq: THR 101 or 103 recommended. Material fee as indicated in *Schedule of Classes*. Introduction to costume design and construction. Laboratory projects coordinated with University Theatre productions. (F)

### 502 Theatre Costuming II. Cr. 3

Prereq: THR 501. Advanced costume design projects concentrating on the expression of character through design principles. Further development of drawing and rendering skills. (W)

### 503 Introduction to Design for the Theatre. Cr. 3

Prereq: THR 213 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)

### 505 Play Direction I. Cr. 3

Prereq: THR 306. Principles and theories of stage movement, blocking, casting, rehearsing. Students required to direct scenes and one-act plays for class presentation. (F)

### 506 Play Direction II. Cr. 3

Prereq: THR 505. Continuation of THR 505. Lectures on the history of play direction. Students required to direct a one-act play on the University Student Stage. (W)

### 507 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)

### 508 Stage Design. Cr. 3(Max. 6)

Prereq: THR 503. 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)

### 509 Advanced Stage Design. Cr. 3(Max. 6)

Prereq: THR 508. Laboratory theory course in stylistic characteristics of modern stage designs. Advanced problems in scenic design. (I)

### 510 Theatre History I. Cr. 3

Required of all B.A. and B.F.A. majors. Material fee as indicated in *Schedule of Classes*. 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. (F)

### 511 Black Theatre: Literature and Criticism. Cr. 2

Prereq: THR 103 recommended. Plays by black American playwrights; examination of essays by black critics; existing black theatre in America; the aesthetics of twentieth-century black drama. (I)

### 512 Development of the Drama I: Greek to Eighteenth Century. Cr. 4

Plays from the Greek through the eighteenth century, including Shakespeare; relation of drama to an era and its theatre. (F)

### 513 (ENG 589) Writing for Theatre. Cr. 3(Max. 6)

Prereq: ENG 383 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)

### 514 Introduction to Scene Painting. Cr. 3

Prereq: THR 213. Material fee as indicated in *Schedule of Classes*. 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. (I)

### 515 Advanced Scene Painting. Cr. 3

Prereq: THR 514. Material fee as indicated in *Schedule of Classes*. Laboratory and demonstration course for the design or technical theatre student. Materials, techniques, styles of scene painting. (I)

### 517 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)

### 518 Advanced Musical Comedy I. Cr. 3(Max. 6)

Prereq: senior B.F.A. major. Material fee as indicated in *Schedule of Classes*. Musical comedy theatre dance; advanced performance techniques and styles of musical comedy theatre dance: tap and jazz. (W)

### 519 Costume History for the Theatre. Cr. 3

Prereq: THR 501. Survey of historical trends and patterns in the development of costume as related to various periods and genres of theatre. (I)

### 520 Advanced Musical Comedy II. Cr. 2

Prereq: junior or senior B.F.A., M.A. or M.F.A. standing. Material fee as indicated in *Schedule of Classes*. Continued study and practice of musical comedy dance styles. (I)

**521 Theatre History II. Cr. 3**

Prereq: THR 510 or consent of instructor. Material fee as indicated in *Schedule of Classes*. Continuation of THR 510. From English and continental eighteenth century to contemporary European and American theatres. (W)

**522 Black Dramatic Literature. Cr. 3**

Prereq: THR 103 recommended. 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)

**525 Playwriting I. Cr. 3**

Introduction to the craft of writing for the stage. Students required to write a full-length dramatic script. (B)

**526 Playwriting II. Cr. 3**

Prereq: THR 525. Continuation of the study and practice of writing for the stage. Students required to write a full-length dramatic script. (B)

**530 Advanced Stage Lighting Design. Cr. 3**

Prereq: THR 507; graduate standing or consent of instructor. Material fee as indicated in *Schedule of Classes*. Examination of situations and responsibilities encountered in professional lighting design. Project work based on large-scale, complex requirements. (I)

**531 Sound for the Theatre. Cr. 3**

Material fee as indicated in *Schedule of Classes*. Introduction to the practice of reinforcement and reproduction of sound within the theatrical context; artistic role of sound; equipment and use. (Y)

**601 Studio I. Cr. 3**

Prereq: graduate standing. Open only to members of Hilberry Acting Company and M.A., M.F.A., and Ph.D. candidates in direction. Examination and analysis of a specific dramatic genre, style or historic period as it relates to the arts of the actor and director. Correlative performance projects. Subject matter coordinated with the repertory of the Hilberry Theatre. (F)

**602 Studio II. Cr. 3**

Prereq: THR 601. Open only to members of Hilberry Acting Company and M.A., M.F.A., and Ph.D. candidates in direction. Continuation of THR 601. (W)

**603 Creative Dramatics for Children. Cr. 3**

Creative dramatics and formal playmaking for and by children. (I)

**604 Children's Theatre Play Production. Cr. 3**

Prereq: THR 603 recommended. Theory and practice of organization, selection, direction, production of plays for children's audiences in schools, churches and communities. (I)

**606 Costume Design for the Theatre. Cr. 3(Max. 6)**

Advanced phases of costume design and construction. Source material for historical and national costumes. (I)

**608 Advanced Stage and Film Makeup. Cr. 2**

Prereq: THR 305. Material fee as indicated in *Schedule of Classes*. Continuation of basic principles applied in THR 305; emphasis on new makeup materials; experimentation with prosthesis and design for problem makeup. (I)

**609 Professional Lighting Design I. Cr. 3**

Prereq: THR 530 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)

**612 Development of the Drama II: Nineteenth Century to Modern. Cr. 4**

Plays and theories of the theatre from the nineteenth century to modern times; relation of drama to an era and its theatre. (W)

**619 Professional Lighting Design II. Cr. 3**

Prereq: THR 530 or consent of instructor. Continuation of THR 609. 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)

**703 Advanced Technical Theatre Problems. Cr. 1-3(Max. 18)**

Open only to M.F.A. theatre majors. Material fee as indicated in *Schedule of Classes*. Advanced study and research in scenic design, theatre architecture, stagecraft, lighting. Projects and reports. (I)

**704 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)

**705 Studio III. Cr. 3**

Prereq: THR 602. Open only to members of Hilberry Acting Company and M.A., M.F.A., and Ph.D. candidates in direction. Continuation of THR 602. (F)

**706 Studio IV. Cr. 3**

Prereq: THR 705. Open only to members of Hilberry Acting Company and M.A., M.F.A., and Ph.D. candidates in direction. Continuation of THR 705. (W)

**707 Repertory Theatre. Cr. 1-4(Max. 18)**

Continuation of SPT 504. Supervised experience in the Classic Theatre repertory program. (T)

**708 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)

**711 Studio V. Cr. 3**

Prereq: THR 706. Continuation of THR 706; further practical studies in various theatre crafts. (F)

**712 Studio VI. Cr. 3**

Prereq: THR 711. Continuation of THR 711; further practical studies in various theatre crafts. (W)

**713 Architecture and Decor. Cr. 3**

Open only to theatre majors. Material fee as indicated in *Schedule of Classes*. Historical study of the form and elements of architecture and decoration; emphasis on theatrical design. (Y)

**714 Survey of Scenography. Cr. 3**

Prereq: theatre major or consent of instructor. Material fee as indicated in *Schedule of Classes*. Historical study of the visual arts in the theatre; concentration on twentieth-century innovations: styles, methods, technology of professional and educational designers. (Y)

**716 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)

**717 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)

**720 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)

**786 (MUA 786) Opera Workshop. Cr. 1 (Max. 8)**

Prereq: consent of director. (F;W)



**789 Seminar: Period Drama. Cr. 3-4**

Prereq: THR 512 or equiv. or consent of instructor. Advanced study of a selected period or playwrights from the beginnings of drama through the Romantic movement. (B)

**790 Directed Study. Cr. 1-4(Max. 4)**

Prereq: written consent of chairperson and graduate officer. Open only to graduate students. (T)

**791 Ph.D. Directed Study. Cr. 1-4(Max. 4)**

Prereq: written consent of chairperson or graduate officer. Open only to doctoral students. (T)

**799 Master's Essay Direction. Cr. 1-3**

Prereq: consent of adviser. (T)

**801 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)

**802 Seminar in Theatre. Cr. 1-3(Max. 6)**

Prereq: THR 521, 704. (T)

**810 Seminar: Theatre History. Cr. 3-4**

Prereq: THR 521 and consent of instructor. Selected topics in theatre history. (B)

**819 Teaching Internship I. Cr. 1-3**

Open only to third year Hilberry fellows. Assisting faculty members in teaching first-semester undergraduate-level courses. (F)

**820 Teaching Internship II. Cr. 1-3**

Open only to third year Hilberry fellows. Assisting faculty members in teaching second-semester undergraduate-level courses. (W)

**850 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)

**881 Seminar: Modern Drama. Cr. 3-4**

Prereq: THR 701 or equiv. or consent of instructor. Advanced study of selected period of playwright from beginning of modernism to present day. (B)

**889 Doctoral Seminar. Cr. 2 (Max. 4)**

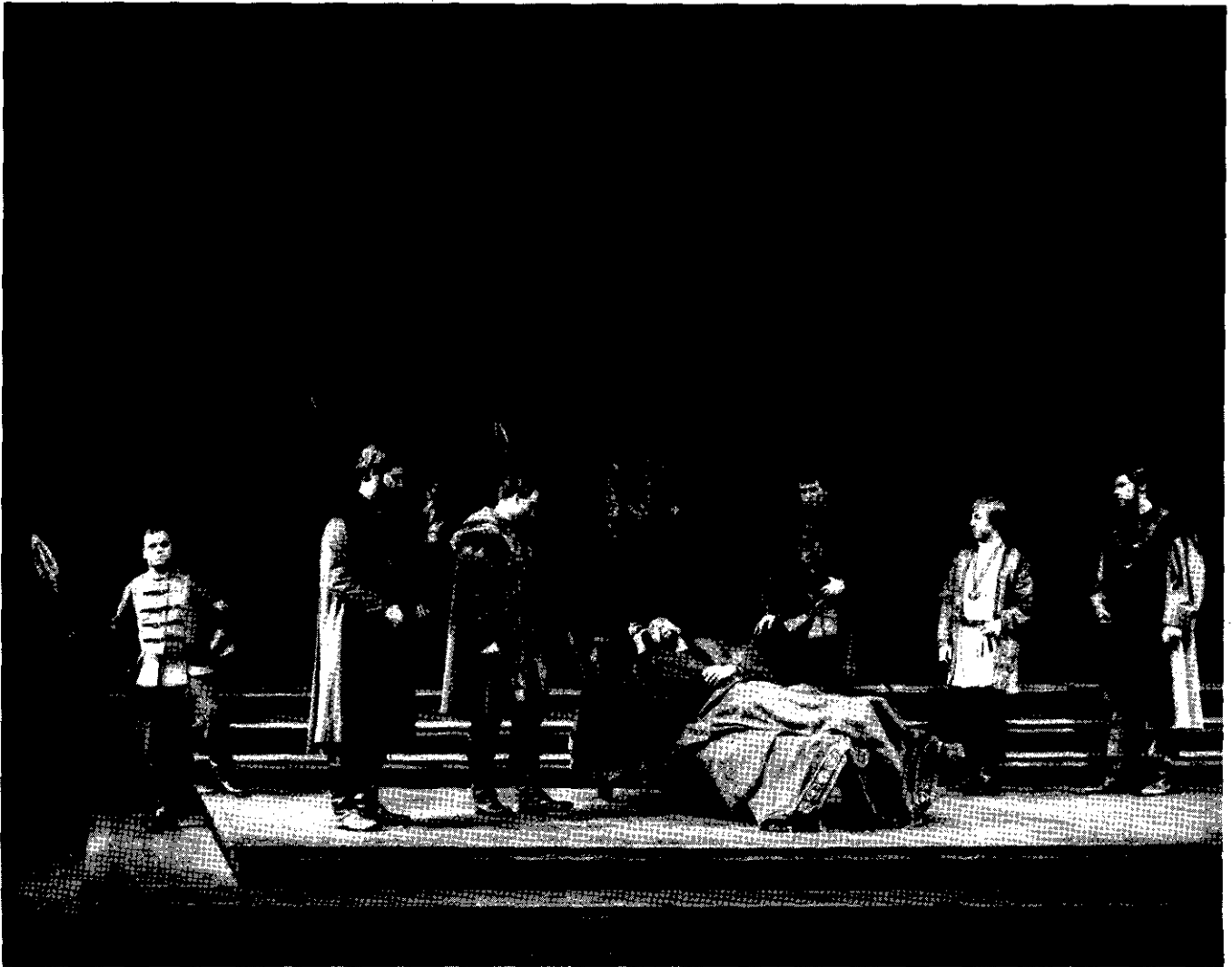
Prereq: admission to Ph.D. program. Discussion of selected research projects. Development, written completion, and oral presentation of research paper to department, faculty, and students. (Y)

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

Prereq: consent of adviser. (T)

**999 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: John W. Reed**

# Law School Calendar 1992-94

(Calendar dates are tentative\*)

## Fall Term 1992

Registration	
First Year Evening	Mon., Aug. 17, 1992
First Year Day	Fri., Aug. 21
All other students (incl. graduate law)	Mon., Wed., Thurs., Aug 24, 26, & 27
Classes Begin	
First Year Evening	Mon., Aug. 17
First Year Day	Mon., Aug. 24
All others	Mon., Aug. 31
Labor Day Recess	Mon., Sept. 7
Thanksgiving Recess	Thurs.—Sun., Nov. 26-29
Registration for Winter Term 1993	Mon., Wed., Thurs., Dec. 7, 9, & 10
Classes End	Wed., Dec. 9
Review and Reading Period	Thurs.—Sun., Dec. 10-13
University Commencement	Thurs., Dec. 10
Examination Period	Mon.—Wed., Dec. 14-23
Fall Term Ends	Thurs., Dec. 31, 1992
Holiday Recess	Fri., Dec. 25, 1992 — Fri., Jan. 1, 1993

## Winter Term 1993

Winter Term Begins	Fri., Jan. 1, 1993
Classes Begin	Mon., Jan. 11
Spring Recess	Sun.—Sun., March 7-14
Classes Resume	Mon., March 15
Classes End	Sat., April 24
Review and Reading Period	Sun.—Sun., April 25 — May 2
Examination Period	Mon.—Fri., May 3-14
Grading, Consultation, and Final Faculty Meeting	Sat.—Sun., May 15-23
Law School Commencement	Sat., May 15
Academic Year Ends	Sun., May 30, 1993

## Summer Term 1993

Registration	Mon.—Fri., May 17-21, 1993
Classes Begin	Mon., May 24
Memorial Day Recess	Mon., May 31
Independence Day Recess	Mon., July 5
Classes End	Fri., July 9
Examination Period	Mon.—Fri., July 12-16
Summer Term Ends	Fri., July 30, 1993

## First Year Summer Program 1993

Registration and Orientation	Tues., June 1, 1993
Welcome/Classes Begin	Wed., June 2
Independence Day Recess	Mon., July 5
Classes End	Fri., July 30
Examination Period	Mon.—Fri., Aug. 2-6, 1993

## Fall Term 1993

Registration	
First Year Evening	Mon., Aug. 16, 1993
First Year Day	Fri., Aug. 20
All other students (incl. graduate law)	Mon., Wed., Thurs., Aug. 23, 25, & 26
Classes Begin	
First Year Evening	Mon., Aug. 16
First Year Day	Mon., Aug. 23
All others	Mon., Aug. 30
Labor Day Recess	Mon., Sept. 6
Thanksgiving Day Recess	Thurs.—Sun., Nov. 25-28
Registration for Winter Term 1994	Mon., Wed., Thurs., Dec. 6, 8 & 9
Classes End	Wed., Dec. 8
Review and Reading Period	Thurs.—Sun., Dec. 9-12
Examination Period	Mon.—Fri., Dec. 13-23
University Commencement	Thurs., Dec. 16
Fall Term Ends	Fri., Dec. 31, 1993
Holiday Recess	Sat., Dec. 25, 1993 — Sat., Jan. 1, 1994

## Winter Term 1994

Winter Term Begins	Sat., Jan. 1, 1994
Classes Begin	Mon., Jan. 10
Spring Recess	Sun.—Sun., March 6-13
Classes Resume	Mon., March 14
Classes End	Sat., April 23
Review and Reading Period	Sun.—Sun., April 24 — May 1
Examination Period	Mon.—Fri., May 2-13
Grading, Consultation, and Final Faculty Meeting	Sat.—Sun., May 14-22
Law School Commencement	Sat., May 14
Academic Year ends	Sun., May 29, 1994

## Summer Term 1994

Registration	Mon.—Fri., May 16-20
Classes Begin	Mon., May 23
Memorial Day Recess	Mon., May 30
Independence Day Recess	Mon., July 4
Classes End	Fri., July 8
Examination Period	Mon.—Fri., July 11-15
Summer Term Ends	Fri., July 29, 1994

## First Year Summer Program 1994

Registration and Welcome	Tues., June 7, 1994
Welcome/Classes Begin	Wed., June 8
Independence Day Recess	Mon., July 4
Classes End	Fri., Aug. 5
Examination Period	Mon.—Fri., Aug. 8-12, 1994

\* This calendar applies to the Law School ONLY. The general University Academic Calendar appears on page 4.

# The Study of Law at Wayne State University

## History and Goals of the Law School

Wayne State University Law School has served as a source of lawyers for Michigan and the nation for over sixty years. A group of public-spirited lawyers led by Judge Allan Campbell, in cooperation with the Board of Education of the City of Detroit, established a new law school in 1927 as part of the higher education system known as the Colleges of the City of Detroit. The Law School grew along with the University, which was subsequently renamed Wayne University. In 1956, the University joined the University of Michigan and Michigan State University as one of the State's three major universities, and was renamed Wayne State University.

Dean Arthur Neef succeeded Judge Campbell as Dean in 1936, serving until 1967. He was succeeded in 1968 by Charles Joiner. Under Dean Joiner the School expanded its faculty and gained a national reputation for its urban programs. After his appointment to the Federal District bench, Dean Joiner was succeeded in 1975 by Donald Gordon, under whose leadership the School's growth in size and quality continued. John C. Roberts became dean in 1980, after serving as Associate Dean of the Yale Law School and as counsel to the Senate Armed Services Committee. During his tenure the Law School flourished, winning national recognition by establishing an Order of the Coif chapter. The current dean, John W. Reed, came to Wayne in 1987, after serving as dean of the University of Colorado Law School and as the Thomas M. Cooley Professor of Law at the University of Michigan. Currently the student body numbers about 700 and the full-time faculty about thirty.

Like all quality law schools, Wayne State pursues the two major goals of education and research. The primary educational purpose of the J.D. program is to prepare lawyers for the wide variety of roles they are now called on to fill with private law firms, corporations, public interest firms, prosecutors' and defenders' offices, and in many law-related fields. Its rich and varied educational program is designed not only to teach the legal rules by which our business and personal affairs are governed in a complex society, but also to instill an appreciation of the larger role of the legal profession as a molder of society's values and institutions. In addition to basic instruction in all major fields of law, Wayne offers many elective courses allowing students to explore new fields of knowledge, to engage in interdisciplinary study, and to delve deeply into areas of special interest. Its program also stresses writing experiences designed to develop skills of written expression, and to provide oral advocacy training both in trial and appellate settings. In addition to the classroom component, Wayne State offers the opportunity to enrich legal education with real-life legal experience. The School's location, in a major urban center, provides ample opportunities for semester-time internships with judges, prosecutors' and defenders' offices, and public interest law offices, as well as with private law firms.

The program leading to the Master of Laws (LL.M.) degree is designed for lawyers in practice or employed in legal areas. It is a part-time evening program, intended to foster specialization in complex areas requiring education beyond the usual basic professional law degree. The program combines courses taught by practicing specialists with seminars and courses taught by members of the full-time law faculty.

The School's second major goal is scholarly research by its faculty. Teachers at Wayne make significant contributions to our understanding of issues in environmental law, taxation, criminal procedure, constitutional law, urban law and many other fields. Their books and articles also contribute significantly to the depth and quality of classroom teaching. It is the interaction of these two activities which creates an especially stimulating environment for the law student.

The Law School faculty prides itself on its diversity. The more than thirty men and women who make up the full-time faculty include lawyers with experience in local, state and federal government, others who have served as clerks for federal judges, a number who are experienced as private practitioners, and others who are well known public interest advocates. They combine excellent academic backgrounds with practical experience. The Wayne faculty is committed to classroom teaching excellence, and also to advancing the state of professional knowledge through scholarship. The School's location also permits the recruitment of excellent part-time faculty, including judges and practitioners whose professional perspective is particularly valuable in specialized courses and seminars.

## Accreditation and National Recognition

The Law School is accredited by both the major national accrediting agencies for legal education: the American Bar Association and the Association of American Law Schools.

Wayne State Law School has an established Chapter of the Order of the Coif, the national honorary society dedicated to the highest standards of legal scholarship. Only slightly more than one-third of American law schools have been selected for Coif chapters. Membership in the Order is limited to the top ten percent of each graduating class, elected by the faculty. In establishing its Chapter of Order of the Coif, Wayne State has joined other law schools in promoting exceptional accomplishment in legal studies.

## Law School Setting and Facilities

One of Wayne's distinct advantages lies in its location, which is in midtown Detroit, four miles north of the main downtown area. Within a few blocks of the Law School buildings are the Detroit Public Library, a major research facility; the Detroit Historical Museum; the Detroit Institute of Arts; and the Detroit Science Center. The Law School is located near the central University library complex and the University's Hilberry Theatre, which houses one of the most distinguished graduate theatre repertory companies in the United States. To the south lies a major medical center which includes the Wayne State University Medical School.

The Law School is a vital part of a major urban university complex. Near the Law School buildings are the Schools of Social Work and Business Administration, the College of Education, and the McGregor Memorial Conference Center. The McGregor Center, which provides an especially gracious setting for Law School meetings and alumni events, was designed by Minoru Yamasaki, and is one of a number of architecturally distinguished buildings on the Wayne State campus. The Law School is located at the northern end of the main campus, at the end of the Gullen Mall which forms the center of the University.

The Law School provides up-to-date quarters for classrooms, faculty and student offices, and the law library. One building has five large classrooms with terraced seats designed to provide comfortable auditory-visual relationships among students and between students and the instructor; floors are carpeted for comfort and excellent acoustics. This building also has lounge alcoves. The second building in the complex, which is connected to the classroom building by an arcade, contains the Arthur Neef Law Library, seminar rooms, a large appellate court room, a trial court room, faculty and administrative offices, and a faculty library and lounge. The offices of student organizations, including the *Wayne Law Review*, Moot Court Board, the Student Board of Governors, and the student lounge are also located in this building. A third building houses the Admissions Office, the Student Trial Advocacy Program, faculty offices, the Career Services Office and the Alumni Relations and Development Office, as well as additional study carrels.

## Arthur Neef Law Library

Wayne State's law library is the second largest in the State of Michigan. It is a major resource for faculty and students of the Law

School, as well as for members of local and state bar, representatives of state and federal agencies, and alumni. A modern computer laboratory provides the setting for training of students in computerized legal research. A complete description of the library and its collections may be found on page 47.

## 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 as prerequisite the J.D. or its equivalent.

### *JURIS DOCTOR*

#### *MASTER OF LAWS*

#### *MASTER OF LAWS in Corporate and Finance Law*

#### *MASTER OF LAWS in Labor Law*

#### *MASTER OF LAWS in Taxation*



# JURIS DOCTOR (J.D.)

## Preparation for Law Study

The Law School has no requirements with respect to the content of pre-legal education, but its 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 both the study and practice of law.

Excellent suggestions for prelaw preparation may be found in the *Official Guide to U.S. Law Schools*, published by the Law School Admission Council. This book contains material on the law, the legal profession and the study of law, together with individualized information on all ABA-approved American law schools. It may be ordered from the Law School Admission Services, and is available in most university bookstores and libraries.

Prospective students are welcome to come to the Wayne State Law School Admissions Office during regular office hours to consult the *Official Guide* and other Law School reference materials.

## Admission Policy

Admission to the Law School J.D. program requires a bachelor's degree from a regionally accredited college or university. Applicants must have or expect to receive the degree before enrolling. An official transcript showing the bachelor's degree must be sent to the Law School by the degree-granting school prior to registration. Each applicant must also take the Law School Admissions Test (LSAT).

The goals of the admission standards of the Law School are first, to assure that a substantial majority of the entering class is composed of persons who are the most highly qualified applicants, according to the best available measures of academic achievement and potential; second, to continue the Law School's commitment to a diverse student body which includes substantial representation of minority persons and persons from a disadvantaged background in each entering class; and third, to assure that all applicants admitted have indicated a capacity to do satisfactory work in the Law School.

In furtherance of these goals, the larger portion of the entering class will be admitted strictly on the basis of superior undergraduate grade point average and Law School Admission Test (LSAT) score. The remainder will be admitted in accordance with the following discretionary criteria:

1. an applicant's academic achievement and potential, as shown by his or her LSAT score and undergraduate grade point average;
2. an applicant's minority status — African American, Latin American or Native American;
3. an applicant's demonstrated capacity to overcome a significant educational disability, such as attending for several years a *de jure* segregated school or a public high school in a low-income geographic area;
4. special features of an applicant's academic record that reduce the reliability of the grade point average as an index of academic achievement and promise, such as the age of undergraduate grades and any marked improvement in grades shown in the later years of college.

## Procedures for Application

**DEADLINES:** Applications for admission and other required credentials are accepted from October 1 until March 15. Applicants are encouraged to apply early, however, since admission decisions are made beginning in December or January. Applicants whose applications or credentials are received at or near the deadline date run the risk that the class may already be filled. Applications or credentials received after March 15 will be considered only after those timely received, or not at all. It is the applicant's responsibility to assure that all required credentials are on file with the Admissions Office.

**APPLICATION:** Applications should be typed, or printed in ink. Applications should be signed and dated where indicated; all questions should be answered. Use extra sheets if more space is needed. Applications should be sent to: Director of Admissions, Law School, Wayne State University, Detroit, Michigan 48202.

**APPLICATION FEE:** A non-refundable fee of \$20.00 (\$30.00 for foreign students) must accompany the application for admission. Checks should be made payable to Wayne State University.

**LAW SCHOOL ADMISSION TEST:** Each applicant must take the Law School Admission Test (LSAT). LSAT scores are considered valid for four years. The tests are given by the Law School Admission Services four times each year in centers located throughout the United States, including Detroit, and in some foreign countries. It is recommended that the LSAT be taken no later than December prior to the year for which admission is sought. The LSDAS/LSAT Information Book, containing registration forms, a sample test and other pertinent information about the LSAT, may be obtained at any university or law school or by writing to the Law School Admission Services.

**LAW SCHOOL DATA ASSEMBLY SERVICE:** Each applicant who has attended undergraduate school in the United States, Canada or Puerto Rico must subscribe to the Law School Data Assembly Service (LSDAS); subscription forms are found in the LSAT/LSDAS Information Book. It is important to read the LSAT/LSDAS Information Book carefully and follow all instructions with regard to the transcript request forms and matching forms. Please note that transcripts covering all completed undergraduate work must be sent directly to LSDAS. Transcripts covering work completed after LSDAS subscription may be submitted directly to the Law School.

Applicants who have completed undergraduate work in foreign institutions are not required to register with LSDAS. Transcripts from foreign institutions should be sent directly from the institutions to the Director of Admissions.

**RECOMMENDATIONS, INTERVIEWS and PERSONAL STATEMENT:** A letter of recommendation from an individual such as a college professor or department chairperson who can comment on the applicant's intellectual ability and academic performance is helpful to the Admissions Committee. An applicant who has been out of school for a number of years may wish to submit a letter of recommendation from his/her employer. Except in unusual circumstances, as determined by the Admissions Committee, personal interviews are not conducted, and applicants are requested not to request such. An applicant who believes there are unusual circumstances or characteristics in his/her background or academic record, or that there is any other aspect of his/her application that needs explanation or amplification, should include such information in a personal statement. For other applicants, the submission of a personal statement is not required but is strongly encouraged.

**ADMISSION FACTOR:** In determining an applicant's admissions factor, the Law School considers an applicant's LSAT score and undergraduate grade point average to be of approximately equal weight. Grades from graduate programs are not used in determining the factor.

**ADMISSION DECISIONS:** The Admissions Committee is composed of faculty members, the Associate Dean, two Assistant Deans, and the Director of Admissions. The Admissions Office evaluates applications and makes admissions decisions in keeping with Law School policies. Other applications are reviewed on the basis of the factor and

discretionary criteria by the faculty members of the Admissions Committee, who then make the admission decisions.

**RECONSIDERATION:** An applicant may request reconsideration of an adverse admission decision. To do so, a letter stating the specific reasons why reconsideration is thought to be merited should be sent to the Director of Admissions. Upon receipt of the request, the application will be reviewed by the faculty members of the Admissions Committee. Applicants who have successfully petitioned for reconsideration are those who typically submit updated information, such as a new test score or additional grades.

**ADMISSION DEPOSIT:** An admission deposit of \$150 is required for each applicant admitted to the first-year program. The deposit reserves a place in the class for the entering student. The deposit amount will be applied against tuition if the applicant enrolls; it is refundable upon request prior to May 15.

**MINORITY STATUS:** The Law School maintains an affirmative action admission policy for minority group members and encourages them to apply. Minority status may be indicated in the space provided on the application. An applicant who wishes to be considered as Latin American or Native American should explain briefly his/her status within such category. Native Americans should submit with the application a tribal certificate or similar document.

**DEFERRED ADMISSIONS:** The Law School does not have a deferred admissions policy. An admittee who withdraws from the class must file a new application and fee for another year. All credentials are kept for four years, so it often is not necessary to re-register with the LSDAS.

**REDUCED PROGRAM:** The first-year course load is mandatory. Day students who have substantial child care responsibilities may be permitted to take a slightly reduced course load during the first-year. To be considered for admission on this basis an applicant must request a reduced load in a separate statement which provides detailed personal circumstances supporting the request.

**ENTRANCE DATES:** First-year students are admitted only to the fall semester beginning in August or start in the Summer Institute beginning in June. Attendance at the Orientation program, as well as early sessions of Legal Writing and Research (JDC 640), is mandatory.

**TRANSFER STUDENTS:** Students from other accredited law schools, who have completed a full year of law study, may apply for admission with advanced standing. Law school grades, along with the candidate's general application information and original admissions credentials, are evaluated. A transfer applicant should have a law school average of at least a 'B'. If admitted, no credit will be transferred for courses in which the student received a grade of 'C-minus' or lower. Applicants must submit official undergraduate transcripts, LSAT scores and official law school grades, together with a certification of good standing from the Dean of the law school previously attended. Registration with LSDAS is not required. No action will be taken on transfer applications until the final grades in all law classes are received.

**FOREIGN LAW SCHOOL STUDENTS:** Admission with advanced standing may be granted to a graduate of, or a student attending, a foreign law school. Such an applicant must follow the normal admissions process, and must submit an LSAT score. Credit for foreign law study may be allowed; the amount allowed, if any, will be determined on the facts of each case. A graduate of a foreign law school ordinarily will be required to complete the first year of course work at the Wayne State University Law School before a determination will be made about the amount of transfer credit, if any, to be allowed. In the case of a graduate of a foreign law school whose studies have been primarily in the common law, the Admissions Committee may waive completion of certain first-year courses.

All candidates for the J.D. degree with advanced standing must ordinarily complete a minimum of two years in residence and fifty-six credits at the Wayne State University Law School in order to qualify for a Wayne State Degree.

**GUEST STUDENTS:** Students from other accredited law schools may be permitted to take one or two classes provided the Dean of the home school has given permission and the student is in good standing. A law student who wishes to take one or two full semesters for the purpose of transferring credit back to his or her home school must apply in the same manner as a transfer applicant. For consideration, the student should have a law school average of at least a 'B'.

## JURIS DOCTOR (J.D.) DEGREE PROGRAM

**FIRST YEAR DAY PROGRAM:** The first-year day program is a year-long program which begins in the fall. All first-year students are required to take all the first-year required courses. In the fall term, the curriculum consists of Contracts, Civil Procedure, Property, Torts, and Legal Research and Writing, for a total of fourteen semester credits. In the winter term, students take the second half of these courses, in addition to the Criminal Law course, for a total of sixteen credits. First-year day students are strongly discouraged from part-time employment.

**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 develops the student's legal writing skills, and students are instructed in case briefing, preparation for class, outlining and examination writing. Students who attend Summer Institute then take the remaining five courses in the fall and winter semesters, thereby allowing them to devote more time to their studies. Enrollment in the Summer Institute is limited.

**SUPPORTIVE SERVICES:** The Law School Supportive Services Program offers academic and related support to students. Throughout the year this Program offers assistance to students experiencing academic difficulty.

The Supportive Services Program and the Summer Institute are under the direction of Assistant Dean Michele Miller. Minority and other inquiring students are invited to contact Dean Miller at (313) 577-3993 with their questions or concerns.

**EVENING PROGRAM:** The Law School offers an evening program which permits the student to complete requirements for the J.D. degree in four to five years. The course of instruction and the faculty are substantially the same as in the day program. The first-year evening curriculum is mandatory and consists of the yearlong Civil Procedure, Contracts, and Legal Research and Writing courses. In the second year of the evening program, students take the Property, Torts, Criminal Law, and Constitutional Law I courses and may choose additional electives. Evening classes are generally held from 6 to 8 p.m., Monday through Thursday evenings, but many elective classes are scheduled on Friday evenings, Saturday mornings, and from 5 to 6 p.m., to provide a wider selection for evening students.

**UPPERCLASS PROGRAM:** After completion of the first-year day program or the first- and second-year evening program, students may choose among an extensive listing of elective courses and seminars, including interdisciplinary courses covering a broad range of subjects.

Students may elect courses in the day or evening, or in a combination of day and evening. It is not uncommon for evening students to elect from day classes, and vice versa, or for upperclass students to change from one program to the other. Both day and evening upperclass students may accelerate their progress by electing courses in the eight-week summer term.

Students who have completed the necessary prerequisites may be permitted to take advanced courses in the LL.M. program.

## 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.

## 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. The requirements for the Juris Doctor degree are:

1. A baccalaureate or equivalent degree upon admission.
2. Completion with a final grade of at least 'D' of each of the following courses: Contracts, Property, Civil Procedure, Criminal Law, Torts, Legal Research and Writing, Constitutional Law I, and Professional Responsibility.
3. Completion of an upperclass writing requirement satisfied by a grade of 'C' or better in either a seminar or two-semester credit directed study. Two years on the *Law Review* or two years on Moot Court including membership on the Moot Court National Team also satisfies the writing requirement.
4. The final year of study must be completed at the Wayne State University Law School.
5. Completion of three years in residence. (Students receive a half-year in residence for each completed semester in which ten credits or more are elected, and one-quarter year in residence for each completed summer term in which five credits or more are elected. Residence time based on completion of fewer credits is computed at the ratio of one semester credit to .05 of a year in residence. Students may not earn more than a half-year in residence for completion of a fall or winter term, nor more than a quarter-year in residence for a summer term.)
6. The Juris Doctor program requires completion of a minimum of eighty-six semester credits, with an overall honor point average of 2.0 ('C') or better for all credits completed.

## Application For Degree

Students who anticipate graduating in May of an academic year must file an application for degree in the Law School Records Office not later than the end of the first week of classes for the winter semester. Students who anticipate graduating in December of an academic year must file an application for degree not later than the end of the first week of classes for the fall semester. A \$15 Graduation Fee is payable at the time the application for degree is filed.

## Combined Law and Graduate Studies

Law School students may pursue a master's degree in a field other than law concurrently with their legal education. Upon completion of their first year of law study, students may apply to the Law School for *permission* to take a combined degree program and to the appropriate school or college of the University for *admission* as a master's candidate. 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. This program will require a minimum of four years of study at the University.

Students who are interested in taking graduate level courses related to their legal training in other schools and colleges of the University may receive credit toward their law degree for the satisfactory completion of such work. The student must first secure the approval of the Dean to register for such courses. For detailed information on graduate courses and programs in the University, consult the other school and college sections of this bulletin.

## Graduate Program in Law and History

A formalized joint degree program in the study of law and history leads to the receipt of a J.D. from the Law School and an M.A. from the Department of History of the College of Liberal Arts. As a part of the M.A. program, students may focus on chronological history, including



Roman, Byzantine, Western European, and American backgrounds of law, or on such subjects as labor, business, or urban history or history as it relates to the lawyer's role in public policy-making in domestic and international affairs. Students who have successfully completed their first year at the Law School may apply to the History Department for admission and to the Law School for permission to pursue this combined degree program. A brochure more fully describing the program is available from the Law School Admissions Office and the History Department.

### Graduate Program in Law and Political Science

A joint degree program in the study of law and political science allows students to obtain both the J.D. degree from the Law School and an M.A. degree from the Department of Political Science of the College of Liberal Arts. Admission to the joint degree program requires the separate approval of both the Law School and the Department of Political Science. 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. The joint degree program requires four years of full-time study. Once admitted to the J.D. program, a student must successfully complete the first year of law studies before pursuing or continuing work on the master's degree.

### Bar Examinations

Students who contemplate practicing law in states other than Michigan should consult Bar examiners of those states at the earliest opportunity with reference to the requirements of such states. In several states, prospective candidates are required to notify the Bar examiners at the beginning of their law study of their intention of taking the examination upon graduation.

Applicants for the Michigan Bar examination must have their graduation certified by the Law School, must file the necessary application, and pay the examination fee to the Board of Law Examiners. Information regarding the Michigan Bar examination can be obtained by writing The State Bar of Michigan Committee on Character and Fitness, 306 Townsend, Lansing, MI 48933-2083.

Although the curriculum of the 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. However, the objective of the School is the development of an understanding of the theory of the law, its application, and the techniques of practice — in other words, to prepare a student for the practice of law.

## MASTER OF LAWS (LL.M.)

The graduate program leads to the degree of Master of Laws (LL.M.) in the fields of labor law, taxation, or corporate and finance law. It is a part-time evening program designed primarily to meet the needs of practicing lawyers for advanced specialized training. (A full-time schedule may be arranged in special cases.)

Courses offered in the LL.M. degree program may be found on page 188. LL.M. candidates may also elect courses from other Wayne State University schools and colleges, depending on the focus of their interest.

**Admission Requirements:** Graduation from a United States law school accredited by the American Bar Association is normally required of an applicant to this program.

*Foreign Law Students:* Admission consideration is given to law graduates from other common-law countries with equivalent J.D. (or LL.B.) degrees, and to students with highly-distinguished academic records from non-common-law countries. The applicant must demonstrate basic English-language proficiency.

*Admission Application and Fee:* Application forms may be obtained from: Wayne State University Law School, Office of Graduate Studies, 468 W. Ferry, Detroit, Michigan 48202. Transcripts of the applicant's undergraduate and law school academic record will be required. Applications for the fall semester must be received by the University not later than the preceding July 15, and for the winter semester not later than the preceding November 15. Applications, together with the application fee of \$20 (\$30 for foreign students) and transcripts, should be directed to: Wayne State University, Office for Graduate Admissions, 5980 Cass Avenue, Room 165, Detroit, Michigan 48202.

Further information may be obtained from the Law School Office of Graduate Studies: (313) 577-3955.

**DEGREE REQUIREMENTS:** All students in the program must be master's degree candidates; see 'Candidacy,' page 27. The LL.M. degree requires the completion of twenty-six credits in academic work with a 'B' or better cumulative honor point average, including twenty-four credits in course work and a two-credit master's essay supervised by a faculty member.

No credit is awarded for course work in which a grade of 'C-minus' or below is received; the master's essay must receive a grade of 'B' or above. All requirements for the LL.M. degree must be completed within six years.

# 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*

<b>Resident</b> .....	\$165.25 per credit
<b>Non-Resident</b> .....	\$362.50 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 16.

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 16.

## FINANCIAL AID

The Law School's financial aid program is designed to assist a student who would otherwise be denied a law school education because of insufficient family or personal resources. The program supplements the financial contribution of the student and the student's family to his or her education. To the extent that funds are available, the School will seek to assist students to meet standard law school expenses. *Application for financial aid must be submitted anew each year.* Students who are dependent on parental support or independent of parental support may qualify for one or more of the following types of aid.

**Note:** All applicants for financial aid are required to provide the Law School Financial Aid Office with a Financial Aid Transcript from each post-secondary school attended, whether or not financial aid was received from the institution(s).

## Need-Based and Other Grants and Loans

**FINANCIAL AID FORM (FAF) APPLICATION:** The Financial Aid Form (FAF) must be filed for ALL sources of need-based financial aid: (1) Board of Governors Grants; (2) Perkins Loans; (3) College Work-Study; (4) Stafford Loans; and (5) Supplemental Loans for Students. The FAF is available from the Law School Financial Aid Office, 317 Law Library; it must be received by the College Scholarship Service in Princeton, New Jersey, by April 1.

*Information about Board of Governors Grants-in-Aid, Perkins Loans, College Work-Study, Stafford Loans, and Supplemental Loans for Students may be obtained from the Law School Financial Aid Office.*

**Board of Governors Grants:** This assistance is applied to tuition costs and is available to U.S. citizens or permanent U.S. residents. Recipients must maintain full-time enrollment (ten credits in the fall semester and in the winter semester). Students in the eight-credit-per semester first-year evening program are not eligible for Board of Governors grants. The award amounts vary annually.

**Perkins Loan:** This federally-sponsored loan is available to students who are U.S. citizens or permanent U.S. residents. Borrowers must maintain at least half-time enrollment (five credits in the fall semester and in the winter semester). The maximum aggregate loan amount for graduate and undergraduate students is \$18,000, including all loans

secured at the graduate level (master's doctoral, law) and at the undergraduate level. Repayment, at five per cent simple interest, begins nine months (for borrowers making their first loan after July 1, 1987) or six months (for borrowers who received previous loans before July 1, 1987) after the student ceases to be enrolled on at least a half-time basis. Borrowers have ten years to repay the loan; minimum monthly payment is \$30. Loan amounts may vary annually. Students who demonstrate sufficient financial need may receive the Perkins Loan in addition to the Board of Governors Grant and College Work-Study.

**College Work-Study:** Students who are U.S. citizens or permanent U.S. residents may be employed under the federally-sponsored College Work-Study Program. Students must maintain at least half-time enrollment (five credits in the fall and in the winter semester). A variety of jobs are available, including positions at the Free Legal Aid Clinic. The maximum College Work-Study award for law students is \$5610 per academic year.

The Law School discourages employment for students enrolled in the full-time, first-year day program. For that reason, College Work-Study awards are not offered to law students until they have completed their first year of study.

**ADDITIONAL LOAN ASSISTANCE:** Students for whom the Board of Governors Grant, Perkins Loan, and College Work-Study, in combination with their family contribution, are insufficient to meet their financial need, may want to apply for other loans.

**Law Access**, a national loan program for legal education created by the Law School Admission Council, makes three loans available to law students, which are either federally- or privately-insured: 1) Stafford Loans, 2) Supplemental Loans for Students, and 3) Law Access Loans.

**Stafford Loans:** Students may borrow up to \$7,500 per year, depending on need. Students are not automatically eligible for the Stafford Loan, nor are they automatically eligible for the full amount for which they apply. Qualification is determined by the Financial Aid Form (see above). The maximum aggregate amount a law student may borrow, including all Stafford Loans secured at the graduate level (master's, doctoral, law) and the undergraduate level is \$54,750. The interest rate for new or first-time borrowers is eight per cent until the fourth year of repayment, and ten per cent thereafter; the interest rate for repeat borrowers is the same as for their previous outstanding Stafford Loans. Repayment begins six months after graduation, or six months after the student ceases to be enrolled on at least a half-time basis. The borrower has up to ten years to repay; minimum monthly repayment is \$50. The Loan has multiple disbursements, half in the fall term and half in the winter term.

**Supplemental Loans for Students (SLS):** This loan is intended to supplement the Stafford Loan. To be eligible to apply for a SLS, students must have already applied (or apply concurrently) for a Stafford Loan. The maximum loan amount per year is \$4000. The maximum aggregate loan amount, including undergraduate borrowing, is \$20,000. The interest rate varies annually, adjusted each July 1 by the federal government, and cannot exceed twelve per cent. The interest can be deferred while the student is in law school and capitalized annually under the Law Access Program. Repayment of the principal begins within sixty days after the student ceases to be enrolled on at least a half-time basis. The borrower has up to ten years to repay; minimum monthly repayment is \$50. The Loan has multiple disbursements, half in the fall term and half in the winter term.

**Law Access Loans (LAL):** This loan is non-need-based. The maximum loan amount is \$14,500 per year. The interest rate is variable. It is based on a ninety-one day Treasury Bill rate (bond equivalent) plus 3.25 per cent, variable quarterly. Repayment begins six months after the student is no longer enrolled on at least a half-time basis. The borrower has up to fifteen years to repay; minimum monthly repayment is \$50, and there is no penalty for prepayment.

**APPLICATION FOR LOANS:** After May 15, Law Access applications will be available from the Law School Financial Aid Office (313-577-5142). The application explains the three-in-one

Stafford/SLS/LAL loan program. In March, applications may be obtained directly from Law Access (1-800-282-1550).

**Note:** Students who borrowed from the Law Access Program during the prior academic year may obtain applications, preprinted with borrower personal data, from the Law School Financial Aid Office after May 15.

**PREVIOUS INDEBTEDNESS/LOAN CONSOLIDATION:** Law School financial aid applicants who have current or previous loans through Michigan lenders or lenders in other states may borrow through Law Access. Loan consolidation, also available through Law Access, allows borrowers to maintain a relationship with only one loan guarantee agency, Pennsylvania Higher Education Assistance Agency (PHEAA).

**COORDINATION OF FINANCIAL AID:** All financial aid must be coordinated. Financial aid awarded by the Law School and/or outside agencies prior to the processing of a loan application will affect Stafford/SLS/LAL loans. The loans will affect subsequent financial aid. *You must advise the Law School Financial Aid Office of all financial aid that you receive.*

## Law School Loans and Grants

The Law School administers several special funds which provide grants or loans to law students:

**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 Loans:** Several special funds provide short-term interest free loans to law students. 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 the Harold E. Bledsoe Fund, 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.

### ACADEMIC ACHIEVEMENT AWARDS

**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.

**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.

**Kenneth V. Cockerel Scholarships:** This scholarship, in memory of Kenneth V. Cockerel, is awarded to an African-American student or students who have a commitment to racial and economic equality and to the active promotion of equal justice for all, proven academic ability, a commitment to excellence, and outstanding character and integrity. Preference is given to students who have ties to the Detroit community.

**Dean's Scholars:** Annual awards from contributions by alumni and friends of the Law School are provided for members of the second-year class, based on superior first-year performance.

**Glady's Freid Scholarship:** This scholarship, established by Bernard Freid in honor of his mother, is awarded to a first-year student showing academic promise and financial 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 law 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.

**Goodman Scholarship:** This scholarship, established by family and friends in honor of Ernest Goodman, Class of 1928, and his wife Freda Goodman, is awarded to a student with financial need who best demonstrates a substantial interest in and significant contribution to the goals of civil rights and social justice.

**Charles V. Hammond Scholarship:** This scholarship is awarded to a Wayne State student for outstanding academic achievement in the first year of law studies.

**Iannotti Scholarship:** This scholarship, established by Daniel V. Iannotti, Class of 1979, is awarded to a second year student of Italian descent who has demonstrated qualities of scholarship and character.

**Harry B. Keidan Memorial Award:** An annual award in memory of Harry B. Keidan is given for academic achievement and financial need.

**Law Alumni Scholarships:** Generous contributions of 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.

**Wade H. McCree, Jr., Scholarship:** This scholarship, in honor of the Honorable Wade H. McCree, Jr., is awarded to a minority student or students of integrity and high promise.

**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.

**Scholarship Key Certificates:** Gold, silver, and bronze key certificates are awarded to students who have demonstrated outstanding academic achievement for the past academic year.

**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.

**State Bar of Michigan — Negligence Law Section Scholarships:** These scholarships, in memory of David Martin and James Tuck, are awarded for excellence in trial practice, torts, civil procedure, evidence, and community involvement.

**U. S. Law Week Award:** A year's complimentary subscription to *Law Week* or *BNA Civil Trial Manual* is awarded to the graduating law student who has made the most satisfactory academic progress in his or her final year.

**Ferne Walter Scholarships**—Memorial scholarships in honor of Ferne Walter, Class of 1941, are awarded on the basis of high academic achievement and need.

**West Publishing Company Book Awards:** Selected titles are awarded to the West Publishing Company to students who have achieved outstanding scholastic records.

### AWARDS FOR COURSE PERFORMANCE

**Abrams Award for Jewish Law:** Established by Hyman Abrams, this award is given to the top student in the Jewish Law course.

**American Jurisprudence Awards:** An American Jurisprudence certificate is awarded by the Lawyers Co-operative Publishing Company and Bancroft-Whitney Company to the students who earn the highest grades in selected courses.

**Clark Boardman Callaghan Award:** This award, established by Clark Boardman Callaghan, is presented to the outstanding student in the first-year Legal Writing course.

**Clark, Klein and Beaumont Commercial Law Awards:** These awards, established by the law firm of Clark, Klein and Beaumont, are made to the students who receive the highest grade in each of the sections of the Secured Transactions course.

**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.

**Ira J. Spoon Scholarships:** These scholarships, established by Ira J. Spoon, Class of 1945, are awarded to Law School students on the basis of scholarly achievement in the first-year Property course.

#### AWARDS FOR WRITTEN WORK

**Ida and Benjamin Alpert Foundation Scholarships:** These scholarships are awarded to residents of Michigan, based on an essay competition. Application should be made before May 1. Applications are available at the Wayne State University Law School, Office of the Assistant Dean for Academic Affairs.

**Nathan Burkan Memorial Competition:** An award is 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.

**Deloitte and Touche Award:** An award is made annually to the law student writing the best paper in the area of taxation.

**Legal Writing Best Appellate Briefs Awards:** Awards are made to students for the best appellate brief and second-best appellate brief for each first-year Legal Writing and Research lecturer. An award is also made for the best brief in the Advanced Legal Writing course.

**Nussbaum Award in Governmental Ethics:** This award is made to the student who writes the best paper on the subject of governmental ethics.

**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 presented to the student who writes the best brief in the first-year Legal Writing Course.

**Boaz Siegel Award:** An annual award made for the best publishable paper in the field of pension, health and welfare, or labor law.

**Ira J. Spoon Award:** This award, established by Ira J. Spoon, Class of 1945, is made annually to the student who has written the best paper on the subject of urban development or property law.

#### AWARDS FOR ACHIEVEMENT IN STUDENT ACADEMIC AND SERVICE PROGRAMS

**Certificate Awards:** Certificates are awarded to student leaders in the Free Legal Aid Clinic, *Wayne Law Review*, Moot Court, Student Trial Advocacy Program and Student Board of Governors for their service to the Law School.

#### Wayne Law Review

**Richard B. Gushee Writing Award:** This award, established by David D. Joswick, Class of 1969, in honor of Richard Gushee, is made annually for the best student work published or to be published in the *Wayne Law Review*.

**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*.

**Jaffe, Raitt and Heuer Scholarship:** This scholarship, established by the law firm of Jaffe, Raitt and Heuer, is awarded to an executive board editor of the *Wayne Law Review*.

**William D. Traitel Scholarships:** These scholarships, designated for students who have demonstrated superior academic achievement, are awarded to members of the Law Review Board.

#### Moot Court

**Marshall D. Goldberg Memorial Award:** An annual award, established by the law firm of Schluskel, Lifton, Simon, Rands, Kaufman, Galvin and Jackier, in memory of Marshall D. Goldberg, is given to the best oralist in the Moot Court Law Day Competition.

#### Student Trial Advocacy Program

**Donald E. Barris Trial Competition Awards:** These awards, established by the law firm of Barris, Sott, Denn and Driker, are given to the best team in the Student Trial Advocacy Program Fall Competition.



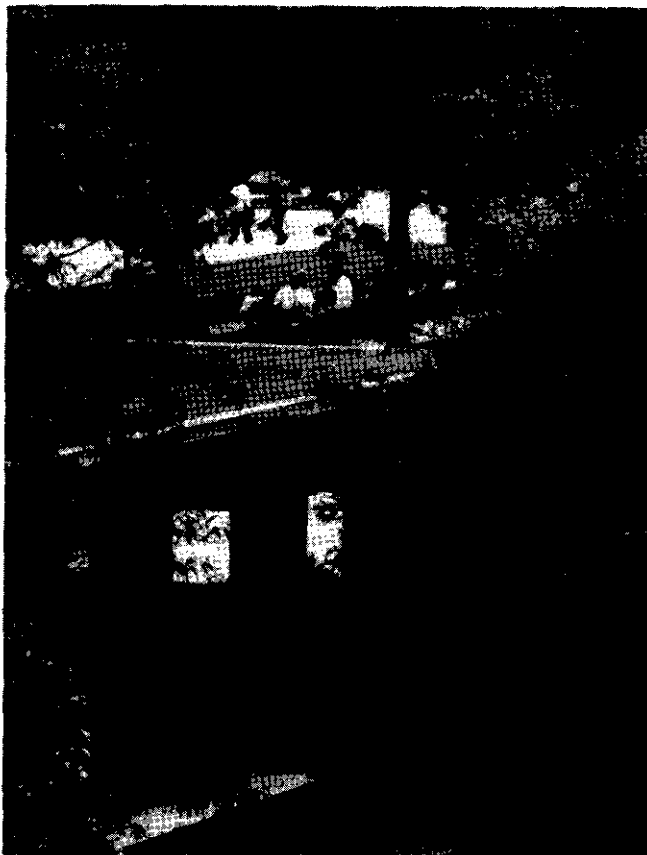
## STUDENT SERVICES

See 'University Student Services' in the General information section of this Bulletin, beginning on page 41. The following material pertains specifically to the Law School.

**Academic Counseling** is available from the Office of the Assistant Dean for Academic Affairs of the Law School. Students are assisted in choosing their programs of study and offered basic counseling about course loads and other academic-related matters, in order to maximize their potential for academic success and assure proper career preparation.

**Supportive Services:** The Supportive Services Program, under the direction of an Assistant Dean, offers tutoring, counseling and other academic assistance to day and evening law students. It also offers academic seminars in organizing course material (outlining), survival skills for first-year students, and examination writing techniques. In addition, a resource library makes available materials including treatises, casebooks, audio-tape lectures by nationally-recognized authorities, and study guides.

**Career Services:** The Law School operates a full-time Office of Career Services, dedicated to assisting law students and alumni in securing meaningful employment in the legal profession and related fields. The Office offers career counseling, sponsors workshops and seminars, and maintains a library containing materials relating to all aspects of legal employment. The Law School is a participating member of the National Association for Law Placement, which provides an abundance of information concerning legal employers and employment trends throughout the United States.



## ALUMNI ACTIVITIES and CONTINUING LEGAL EDUCATION

**Law Alumni Association:** The Association is an independent organization of the graduates of Wayne State University Law School. The Law School's most prominent and professionally-active alumni and alumnae serve as the executive committee and officers who govern the Association. This group advises the Dean on matters of long-term interest to the School and provides the administration with perspectives from the profession. Alumni come together at a number of events each year, including professional meetings, receptions with faculty, and reunions. In addition, alumni provide special assistance in the areas of job placement, moot court activities, community relations, adjunct teaching, and fund raising.

**The Law School Fund:** Although Wayne State is a state-supported school, it is the private contributions of alumni, law firms, corporations, and other friends of the Law School that provide the financial margin necessary to ensure outstanding faculty scholarship, excellent professional training, a modern and expanding library and student scholarships. The Fund, which has grown steadily over the past several years, provides well over ten per cent of the Law School's annual resources.

**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 profile, 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 bench and bar. Founded in 1959, it is sponsored by Wayne State University Law School, the University of Michigan Law School, and the State Bar of Michigan. The Institute primarily serves the needs of Michigan lawyers; it presents seminars and conferences dealing with numerous areas of substantive law as well as practice skills. The Institute also has an extensive publishing program which includes authoritative texts on various specialty areas of law and course handbooks.

# FACULTY

## Administration

Dean: John W. Reed  
Associate Dean: Edward M. Wise  
Assistant Dean: Sharon M. Brown  
Assistant Dean: Marie S. Inniss  
Assistant Dean: Michele R. Miller  
Director of the Graduate Program: John E. Mogk  
Director of Career Services: Susan Kalb Weinberg  
Director of Development: Pamela P. Acheson  
Director of Admissions: Marcia McDonald  
College Recorder: Elizabeth Van Goethem  
Director, Law Library: Georgia M. Clark  
Financial Aid Administrator: Barbara M. Jones  
Director, Legal Writing Program: Diana V. Pratt  
Business Manager: Randall J. Wilger

## Professors

Robert H. Abrams, David W. Adamany, Martin J. Adelman, William H. Burnham, Stephen Calkins, Kenneth R. Callahan, John F. Dolan, Joshua Dressler, Jane M. Friedman, Donald H. Gordon (Emeritus), Joseph D. Grano, Gunther Handl, Otto J. Hetzel, Maurice B. Kelman, Geoffrey J. Lanning (Emeritus), LeRoy L. Lamborn, Jessica D. Litman, Edward J. Littlejohn, Frederica K. Lombard, Michael J. McIntyre, John E. Mogk, John W. Reed, Alan S. Schenk, Stephen H. Schulman, Robert A. Sedler, Boaz Siegel (Emeritus), Ralph Slovenko, Richard Strichartz (Emeritus), Edward M. Wise

## Associate Professors

Kingsley R. Browne, Janet E. Findlater, Kathryn R. Heidt, Vincent A. Wellman

## Assistant Professors

George Feldman, Florise Neville-Ewell, Jonathan Weinberg

## Lecturers

Barbara A. Blumenfeld, Marilyn Finkelman, Sandra Gross, Marilyn F. Preston, Cynthia J. Sherburn

# LAW SCHOOL DIRECTORY

Admission — J.D. Program . . . . 195 Law School Annex; 577-3937  
Admission — LL.M. Program . . . . . 335 Law Library; 577-3955  
Financial Aid . . . . . 317 Law Library; 577-5142  
Records and Registration, Law School 311 Law Library; 577-3978  
Supportive Services . . . . . 169 Law School Annex; 577-3993

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

A schedule of courses and instructors listing the days and hours of class meetings for each academic year will be issued by the Law School prior to registration. The following descriptions of courses are intended only to convey a general idea of the range of instruction offered by the Law School and are subject to change. For interpretation of numbering system, signs and abbreviations, see page 463.

## JURIS DOCTOR COURSES (JDC)

### Required First Year Courses

#### 610 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)

#### 620 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)

#### 630 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)

#### 640 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)

#### 650 Property. Cr. 2-4 (6 req.)

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)

#### 660 Torts. Cr. 2-5(5 req.)

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)

### Required Upper Level Courses

#### 670 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)

**680 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)

**Elective Courses**

**704 Administrative Law. Cr. 3 or 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)

**707 Admiralty Law. Cr. 2**

Admiralty jurisdiction; personal injury and death; charter parties and bills of lading; collision and limitation of liability. (B)

**710 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)

**711 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)

**713 (HIS 805) 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)

**716 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)

**725 A Transactional Approach to Business Planning. Cr. 4(8 req.)**

Prereq: JDC 755 and 881. Not open to students who have taken JDC 728, JDC 854, or JDC 869. 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)

**728 Business Planning and Taxation of Corporations and Shareholders. Cr. 3 or 4**

Prereq: JDC 755 and 881. Not open to students who have taken JDC 725. Advanced work in corporations and federal taxation in business transactions, planning and counseling; problems involving common business transactions, formation of corporations, stock redemption, sale and purchase of businesses, mergers and other forms of acquisitions, and recapitalizations, division and dissolution of corporations. (Y)

**734 Trial Advocacy. Cr. 3**

Prereq: JDC 782 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)

**737 Commercial Transactions. Cr. 4**

No credit after JDC 870 or JDC 851. Legal concepts involved in modern commercial transactions under the Uniform Commercial Code; sale of, payment for, and financing of goods; statutory interpretation. (Y)

**740 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)

**741 Comparative African Legal Systems. Cr. 2**

Diversity of African legal systems, viewed within framework of Africa's colonial past and post-colonial independence; customary law and jurisprudence; socio-political environment within which the legal systems operate. Particular attention to systems influenced by English Common Law. (I)

**742 Computer Law: Commercial Transactions. Cr. 2**

Legal aspects of the marketing of hardware and software contracts and the law regarding the protection of software. American and Canadian legal documentation for alternative channels of distribution including the acquisition, sale, licensing and distribution of hardware, software and maintenance. (Y)

**745 Computer Law: Protection of Intellectual Property. Cr. 2**

Prereq: JDC 850. Legal protection of software and other computer-related technology, with respect to patent, copyright and trade secret law. Types of protection compared and contrasted. Some coverage of trademark and unfair competition law. (Y)

**746 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)

**749 Constitutional Law II. Cr. 4**

Prereq: JDC 670. Individual rights under the Constitution of the United States. Freedom of speech, religious freedom and equal protection. (Y)

**754 Copyright Law. Cr. 3**

No credit after former JDC 851. 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)

**755 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)

**758 Creditors' Rights. Cr. 3 or 4**

Prereq: JDC 737 or 870. 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)

**760 Criminal Appellate Practice. Cr. 3**

Prereq: JDC 761, 764 or 782 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)

**761 Criminal Procedure I. Cr. 3**

Prereq: JDC 670 recommended. Constitutional requirements for arrests, searches, seizures, electronic surveillance, and interrogations. (Y)

**764 Criminal Procedure II. Cr. 3**

Prereq: JDC 670 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)

**770 Employment Law. Cr. 2 or 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)

**773 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)

**776 Equal Opportunity In Employment. Cr. 2 or 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)

**778 Equitable Remedies. Cr. 2-3**

Not open to students who have taken JDC 864 or former JDC 779 or former JDC 866. 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)

**782 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)

**785 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)

**787 Federal Civil Rights Litigation. Cr. 2**

Prereq: JDC 670. Violations of U.S. Constitution and federal statutes by state and local officials (not involving discrimination). Necessary elements of the civil rights claim, proper parties, immunities and defenses, limits on local government liability, remedies, and attorney fees. Development of the Civil Rights Act of 1866 (42USC Sec. 1983) from a minor post-Civil War statute into the primary vehicle for vindication of federal rights, as exercise in statutory interpretation and as microcosm of expanded role of the federal judiciary. (I)

**788 Federal Courts and the Federal System. Cr. 2 or 3**

Prereq: JDC 670. 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)

**790 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. (I)

**793 Government Contracts. Cr. 2**

Aspects of the law of government contracts: contract formation, contract performance, dispute procedures; use of government contracts to advance social and economic goals. (Y)

**794 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)

**795 Ideological and Economic Bases of Contract Law. Cr. 2 or 3**

Recent and historical attempts to rationalize doctrines and developments in contract law. Social, political, and moral thesis, such as laissez-faire capitalism, individualism, economic efficiency and promise-keeping obligations which have been used to justify contracts and their enforcement. Readings from legal, philosophical, and economic literature. (I)

**797 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)

**800 International Aspects of U.S. Taxation. Cr. 2-3**

Prereq: JDC 881. 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)

**801 Health Law. Cr. 2 or 3**

Prereq: JDC 660. 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)

**802 International Business Transactions. Cr. 3**

Practical legal problems connected with doing business abroad; counseling on foreign law. (Y)

**803 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)

**806 International Protection of Human Rights. Cr. 2**

The main international and regional legal instruments and procedures for the protection of human rights. (I)

**807 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)

**812 Labor Relations and the 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)

**815 Land Use. Cr. 2-3**

Prereq: JDC 650. 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)

**819 Law of Elections and Political Organization. Cr. 2**

Not open to students who have taken JDS 807. 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)

**827 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. Survey of the highlights of Roman and English legal history with occasional attention to other systems. Readings include literary and legal sources. (B)

**830 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)

**836 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)

**837 Advanced Legal Writing. Cr. 3**

Prereq: JDC 640. May not be taken on passed-not passed 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 an advocate. Students write both trial and appellate brief. (Y)

**839 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)

**842 Local Government Law. Cr. 2**

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)

**845 Mass Media Law. Cr. 2**

Prereq: JDC 749 recommended. Legal and constitutional issues applicable to the press and broadcast media, including: problems of newsgathering; First Amendment and the regulation of obscenity; the problem of national security information; licensing of broadcasters; public access to the air waves, fairness doctrine, equal time, and control of program content. (Y)

**850 Patent Law. Cr. 3**

No credit after former JDC 851. 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)

**851 Payment Systems. Cr. 2**

Prereq. or coreq: JDC 870. No credit after JDC 737. Basic study of Articles 3 (Negotiable Instruments) and 4 (Bank Deposits and Collections) of the Uniform Commercial Code with some attention to the rules of wire transfers in proposed Article 4a and to letters of credit in Article 5. (Y)

**852 Estate, Gift and Inheritance Taxation. Cr. 2**

Prereq: JDC 881. Not open to students who have taken former JDC 791. Federal and state transfer taxes and income taxation of fiduciaries and beneficiaries. (Y)

**853 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)

**854 Problems in the Taxation of Corporations and Shareholders. Cr. 2-3**

Prereq: JDC 881. Not open to students who have taken JDC 725. 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)

**857 Products Liability. Cr. 2**

Problems arising out of defective products. Warranty actions, strict liability in tort, damages, problem of proof, other topics. (B)

**859 Public Sector Labor Law. 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)

**860 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)

**865 Reorganization of Financially Troubled Businesses. Cr. 2 or 3**

Prereq. or coreq: JDC 758 and 881. Not open to students who have taken JDC 976 or JDS 717. Examination of business-related financial problems and their solutions. Emphasis on reorganization of the business, both in and out of Chapter 11 of the Bankruptcy Code. (Y)

**868 Advanced Sales Law. Cr. 2-3**

Advanced study in sales areas beyond first-year contracts course. (Y)

**869 Securities Regulation. Cr. 2**

Prereq: JDC 755. Not open to students who have taken JDC 725. Analysis of current problems in federal and state regulation of transactions in securities. (Y)

**870 Secured Transactions. Cr. 3**

No credit after JDC 737. 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)

**872 Sex-Based Discrimination. Cr. 2**

Laws from colonial times to the present as they relate to the status of women; family and welfare laws, criminal laws, the common law, and federal legislation. Academic and employment opportunities for women; and women in labor unions. (I)

**877 Trademarks and Unfair Competition. Cr. 2**

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. section 1125 (a). (I)

**881 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)

**882 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)

**883 Trade Secrets and Confidential Information. Cr. 2**

Substantive law of trade secrets and other confidential business information, and covenants not to compete. Trade secret litigation including injunctions, *Shellmar* and *Conmar* rules, damages, defenses, and development of trade secret protection packages. Modern frontiers of trade secrets law, including demise of *Kewanee* and infringement of First Amendment rights. (B)

**884 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)

**885 Union Democracy. Cr. 2**

Prereq: JDC 812 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)

**887 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)

**903 Internship: Attorney Grievance Commission. Cr. 1**

Prereq: consent of assistant dean, second or third year student, JDC 782; recommended prereq. or coreq: 680. Student works under supervision of attorney on staff of Attorney Grievance Commission, on legal research and writing projects, preparation of pleadings, and trial preparation projects; 8-10 hours per week in fall or winter terms; 16-20 hours per week in summer term. (T)

**904 City of Detroit Law Department Internship. Cr. 1**

Prereq: consent of adviser; second or third year student. Clinical program under the supervision of the City of Detroit Law Department, to provide research assistance and trial and appellate aid to members of the Law Department staff. Approximately 8-10 hours per week in fall or winter term; 16-20 hours per week during summer term. (T)

**906 Federal Defender Internship. Cr. 1**

Prereq: consent of the assistant dean. Open only to second- and third-year students, who may not elect any other clinical internship in same term. Each student is assigned to an attorney on staff of the Federal Defender's Office, doing extensive research and brief writing in criminal cases at both trial and appellate levels. Approximately 8-10 hours per week during fall and winter terms; 16-20 hours per week during summer term. (T)

**907 Internship: Equal Employment Opportunity Commission. Cr. 1**

Prereq: consent of assistant dean; second or third year student; JDC 776. Student assigned to attorney in Hearings and Appeals or Legal Unit of Detroit Office, Equal Employment Opportunity Commission; extensive research and writing as well as assisting in trial preparation; approximately 8-10 hours per week in fall and winter terms, 16-20 hours per week in summer term. (T)

**908 Judicial Internship. Cr. 1**

Prereq: consent of assistant dean; second or third year student. Each student is assigned to a participating judge and devotes 8-10 hours per week during fall and winter terms and 16-20 hours per week during the summer term, working with the judge as a law clerk, assisting in closely-supervised research on points of law and acquiring familiarity with the operation of the court. (T)

**909 Internship: American Civil Liberties Union. Cr. 1**

Prereq: JDC 670; consent of assistant dean; second or third year student. Student works under supervision of the Legal Director of the American Civil Liberties Union of Michigan researching and analyzing constitutional and civil liberties issues, drafting pleadings and materials for hearings and trials. Approximately 8-10 hours per week during fall or winter term; 16-20 hours per week in summer term. (T)

**910 Internship: Juvenile Defender Office. Cr. 1**

Prereq: consent of assistant dean; second or third year standing; JDC 761 and 782. Each student is assigned to an attorney on the staff of the Juvenile Defender Office to do extensive research and writing in cases involving defense of indigent youth in juvenile court proceedings. Approximately 8-10 hours per week in fall and winter terms; 16-20 hours per week in summer term. (T)

**911 Internship: Oakland County Circuit Court Administrator's Office. Cr. 1**

Prereq: second or third year standing. Student works under the supervision of the legal staff of the Oakland County Circuit Court Administrator's Office to provide research assistance and prepare summaries of legislation and related work. Approximately 8-10 hours per week in fall and winter terms, 16-20 hours per week in summer term. (T)

**912 Internship: Prosecutor. Cr. 1**

Prereq: consent of assistant dean; second or third year student. May not elect any other clinical or internship program in same term. Each student is assigned to an attorney on the staff of the Wayne County, Macomb County, Washtenaw County or St. Clair County Prosecutor's Office, doing extensive research and writing. Student is taken through steps in processing actual cases. Approximately 8-10 hours per week during fall and winter terms; 16-20 hours per week during summer term. (T)

**915 Internship: Archdiocese of Detroit Office of Migration. Cr. 1**

Prereq. or coreq: JDC 794, consent of assistant dean, second or third year student. Student works under supervision of legal staff of Archdiocese of Detroit Office of Migration to provide legal research and writing assistance and to draft documents in a wide range of areas of immigration law. Approximately 8-10 hours per week in fall or winter terms; 16-20 hours per week during summer term. (T)

**916 Internship: United States Attorney. Cr. 1**

Prereq: consent of assistant dean; second or third year student. May not elect any other clinical program or internship in same term. Work with a staff attorney; legal research and drafting of legal documents in a wide variety of civil and criminal cases, at both trial and appellate levels. Approximately 8-10 hours per week during fall or winter terms; 16-20 hours per week in summer term. (T)

**930 Free Legal Aid Clinic. Cr. 1-2**

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)

**935 Law Review. Cr. 1-2**

Open only to Law Review members. (Y)

**940 Moot Court. Cr. 1-2**

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)

**945 Student Trial Advocacy Program. Cr. 1-2**

Open only to members. Members participate in skills training; intraschool, regional, and national trial advocacy competitions. (Y)

**978 Entertainment Contracts Workshop. Cr. 3**

Prereq: JDC 754 or consent of instructor. Workshop offers opportunity to negotiate and draft agreements for exploitation of a hypothetical work in a variety of media: book publishing, live theatre, films, and television. Each student will be responsible for negotiation and drafting two or three agreements with other students in the class. (B)

**981 Estate Planning. Cr. 2**

Prereq: JDC 881 and 852. Not open to students who have taken former JDC 980. Special problems such as valuation, drafting. State and federal transfer taxation and federal income tax treatment of fiduciaries and beneficiaries. (B)

**986 Real Estate Financing Workshop. Cr. 2**

Prereq: JDC 860. 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)

## JURIS DOCTOR SEMINARS (JDS)

**717 Bankruptcy Reorganization. Cr. 3**

Prereq: JDC 758. Not open to students who have taken JDC 865 or JDC 976. 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)

**719 Canada - United States Legal Issues. Cr. 3**

Management of Canada - United States legal issues; emphasis on trade relations (including various aspects of the Free Trade Agreement), and bilateral environmental issues (including in particular long-range transboundary air pollution). Other topics include: transboundary judicial assistance, territorial and boundary issues and conflict of laws. (Y)

**733 Criminal Law Defenses at the Cutting Edge. Cr. 3**

Prereq: JDC 630. Philosophical and legal issues regarding traditional and novel criminal law defenses including heat of passion, self-defense, consent, battered-wife defense, brainwashing, euthanasia, hypnosis, and defenses to prison escape. (Y)

**736 Comparative U.S. - Competition Law. Cr. 3**

Prereq. or coreq: JDC 716. Comparison of competition policies and enforcement mechanisms of the United States and the European Community, including rules and enforcement procedures governing such matters as mergers, cartels, monopolies, price discrimination, distribution. (Y)

**737 Contemporary Legal Theory. Cr. 3**

Prereq: JDC 830 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)

**750 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)

**756 Current Constitutional Problems. Cr. 3**

Prereq: JDC 670 or equiv. Each student produces a substantial paper dealing with a constitutional problem of special interest. Discussion of papers and constitutional issues of current significance. (I)

**759 Current Issues in Tax Policy. Cr. 3**

Prereq: JDC 881. Current tax policy issues confronting Congress: policy issues in estate and gift taxation; policy issues in federal income taxation; changing nature of the federal tax structure and the potential adoption of new federal taxes. (B)

**771 Environment and Land Use. Cr. 3**

Basic problems posed by the interrelated fields of environmental law and land use: ecology and economics, energy and transportation, water and air pollution, open space, public participation, litigation's role. The ability of the law to deal with the major problem areas and their causes and cures, and practical research into Michigan practices. (B)

**772 Contemporary Environmental Issues. Cr. 3**

Prereq: JDC 773 recommended. Seminar focuses on major problem area in environmental law. Potential topics include legal regulation of hazardous waste, the public trust doctrine as a constraint on resource allocation, theories of regulatory action, environmental aspects of transportation or energy policy, urban pollution. Multi-disciplinary perspectives; role-playing of simulated controversies such as negotiation over hazardous waste clean-up, proposed legislation mark-up. (Y)

**773 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)

**779 Hazardous Waste. Cr. 3**

Prereq: JDC 773 recommended. Seminar focusing on the legal control of the hazardous waste cycle and the laws governing the cleanup of environmental contamination caused by the escape or disposal of those wastes. Topics include the major federal statutes such as the Superfund law as well as state and local regulations. Students will develop expertise in the legal aspects of this field and familiarity with scientific and technological issues. (B)

**791 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)

**800 Labor Law. Cr. 3**

Prereq. or coreq: JDC 812. Current labor law problems with emphasis on labor relations in the public sector, employment discrimination, internal union affairs, and myths and assumptions in labor law (the role of empirical research). (Y)

**803 Law and Bioethics. Cr. 3**

Issues arising from recent advances in biomedical technology: prenatal diagnosis of genetic disorders, problems of prolonging life, psychotropic drugs to control human behavior. (Y)

**804 Law and Economics. Cr. 3**

No specific background in economics required. Recent developments in the application of legal analysis to legal doctrine. (I)

**808 Law, Race and Racism in American History. Cr. 3**  
(SOC 732)(AFS 732). 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)

**809 Law, Science and Technology. Cr. 3**

Administrative and other legal processes for regulation of technological change in such contexts as national energy policy, environmental protection and national security. Emphasis on cost-benefit analyses in governmental regulation of risk and of public participation in decision-making. (I)

**815 Legal Process. Cr. 3**

Not open to students who have taken JDC 836. 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. (I)

**816 Legal Studies. Cr. 3**

Contribution of other disciplines (anthropology, economics, history, literary theory, political science, sociology) to an understanding of law; their bearing on questions regarding the 'autonomy' of legal systems. Relationships between law and society, economy, and politics; relationships, resemblances, and differences between methods of inquiry in various disciplines, including law. (I)

**822 Mergers and Acquisitions. Cr. 3**

Prereq: JDC 755. Important corporate and antitrust questions raised in the context of mergers and acquisitions; leading contributions to the literature. (I)

**827 Advanced Patent Law. Cr. 3**

Prereq: JDC 850. 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)

**831 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 at Lafayette clinic are presented and discussed. (Y)

**842 Radio and Television Regulation. Cr. 3**

Prereq. or coreq: JDC 749 recommended. Government regulation of radio, over-the-air television, cable, direct satellite broadcasting, and other electronic mass media technologies. Licensing, content control, respective roles of the regulator and the marketplace. (Y)

**856 Selected Problems in Family Law. Cr. 3**

Dynamic principles of child development, custody, neglect, and abuse; clinical experience at Children's Hospital; divorce, emotional impact on the attorney-counselor, counseling the client. (Y)

**860 Tort Principles and the Problems of Modern Society. Cr. 3**

Problems arising through urban living and their potential resolution through application of tort concepts. Selected topics: individual and police (violation of civil rights); individual and big government (right of privacy); individual and big business (products liability); individual and the professional (malpractice); individual and other individuals (slum-lordism, nuisance). Individual research in other areas with consent of instructor. (Y)

**866 Transnational Environmental Problems. Cr. 3**

Prereq: JDC 773 or JDC 803. Response of the legal system to transnational environmental hazards caused by air and water pollution and the use of nuclear power. (I)

**867 Issues in Transnational Litigation. Cr. 3**

Prereq: JDC 740 or JDC 802 or JDC 803 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)

**870 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)

**875 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 spacial rights of victims of sexual assault, spouse abuse, and child abuse. (Y)

## MASTER OF LAWS (LLM)

*The following courses are primarily for graduate law students, open to undergraduate law students by special permission only. In addition, graduate students may elect selected undergraduate law courses and seminars approved by their advisers. Permission may also be secured to take for credit related graduate-level courses in economics, business administration, and similar areas.*

*TAX LAW MAJORS who have not had a reasonably current income tax course in their undergraduate law work may be required to take JDC 881 prior to entering the graduate tax courses. They may earn partial credit for this course.*

*LABOR LAW MAJORS who have not had a basic labor law course in their undergraduate law program will normally be required to take JDC 812 before undertaking other graduate labor law courses. They may earn partial credit for this course.*

*CORPORATE AND FINANCE LAW MAJORS may elect from the following courses in labor law and taxation, as well as certain Juris Doctor courses and graduate courses in economics and business administration.*

**810 Arbitration of Labor Disputes. Cr. 2**

Study of labor arbitration, including grievance and interest arbitrations. Practice, policy questions and the impact of statutes. (Y)

**822 Practices and Procedures Before the National Labor Relations Board. Cr. 2**

The representational and unfair labor practice areas. (Y)

**830 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)

**834 Wage and Hour Laws. Cr. 2**

State and federal wage and hour laws, including administration of the statutes and their interrelationship. (Y)

**838 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)

**851 Employee Benefits I. Cr. 2**

Prereq: JDC 881. Not open to students who have taken former LLM 854. 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)

**852 Employee Benefits II. Cr. 2**

Prereq: JDC 881. 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)

**858 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)

**862 Federal Tax Practice. Cr. 2**

Procedure, both administrative and judicial, involved in the conduct of federal tax controversies. (B)

**866 Income Taxation of Trusts and Estates. Cr. 2**

Prereq: JDC 881. Rules of federal income taxation applicable to trusts and estates. Interrelationship with estate and gift tax in selected situations. (Y)

**868 Problems in Income Tax Accounting. Cr. 2**

Prereq: JDC 881. Selected accounting problems of the federal income tax, including establishment of accounting period, net operating loss, depreciation, 'at-risk' rules, gain recognition, and installment reporting, inventories and change of accounting method. (Y)

**870 State and Local Taxes. Cr. 2-4(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)

**872 Tax Aspects of Corporate Reorganization. Cr. 2**

Prereq: JDC 881 Various federal income tax consequences accompanying both tax-free and taxable corporate reorganizations, and the myriad acquisition and disposition techniques. (Y)

**873 Tax Aspects of Real Estate Transactions. Cr. 2**

Prereq: JDC 881. Not open to students who have taken former JDC 878. 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)

**874 Tax Penalties and Prosecutions. Cr. 2**

Prereq: JDC 881. Federal, civil and criminal remedies for fraudulent tax evasion. (B)

**876 Tax Problems of Corporate Distributions and Liquidations. Cr. 2**

Prereq: JDC 881 and JDC 854. Various federal income tax consequences accompanying corporate non-liquidating distributions to shareholders. (Y)

**878 Tax-Exempt Organizations. Cr. 2**

Prereq: JDC 881. Tax problems arising from activities of non-profit associations of a type usually subject to taxation. (B)

**890 Directed Study in Law. Cr. 1-3**

Prereq: consent of adviser. (T)

**899 Master's Essay Direction. Cr. 1-2**

Prereq: consent of adviser. (T)





# **COLLEGE OF LIBERAL ARTS**

**INTERIM DEAN: John P. Oliver**

# Foreword

The College of Liberal Arts provides instruction and supports research in a wide variety of academic disciplines. These disciplines serve graduate-professional interests and needs of a diverse student population. Curricula leading to master's and doctoral degrees are offered in the physical and natural sciences, mathematics, computer sciences, the social sciences and the humanities.

## Master's Degrees and Majors

### *MASTER OF ARTS with majors in*

Anthropology	Latin
Applied Mathematics*	Linguistics*
Art History	Mathematics
Chemistry	Mathematical Statistics
Classics	Near Eastern
Communication Disorders and Sciences	Languages
Comparative Literature	Nutrition and
Computer Science	Food Science
East European Studies	Philosophy
Economics	Physics
English	Political Science
French	Psychology
German	Russian
History	Sociology
Italian	Spanish

### *MASTER OF ARTS IN TEACHING COLLEGE ENGLISH*

### *MASTER OF ARTS IN TEACHING COLLEGE MATHEMATICS*

### *MASTER OF PUBLIC ADMINISTRATION with majors in*

Criminal Justice	Public Administration
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### *MASTER OF SCIENCE with majors in*

Biological Sciences	Geology
Chemistry	Nutrition and
Computer Science	Food Science
Criminal Justice*	Physics

## Doctoral Degrees and Majors

### *DOCTOR OF PHILOSOPHY with majors in*

Anthropology	Modern Languages
Biological Sciences	Nutrition and
Chemistry	Food Science
Communication Disorders and Sciences	Philosophy
Computer Science	Physics
Economics	Political Science
English	Psychology
History	Sociology
Mathematics	

\* Designation of the field is part of the degree title.

# 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 14.

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 20th 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, '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 'A GRADE' program, contact the Director of the College's Honors Program (577-3030), 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 20-30) 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 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 700 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, 2155 Faculty/Administration Building.

Master's degree candidates under the essay plan register for the course numbered 799, 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 899 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 999 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 32. Specific information may be found in various departmental sections of the College of Liberal Arts, below.

## COLLEGE DIRECTORY

### ADMINISTRATION

Interim Dean:	
John P. Oliver	2226 Faculty/Admin Bldg.; 577-2514
Associate Deans:	
Kathleen McNamee	2226 Faculty/Admin. Bldg.; 577-2522
David L. Njus	2226 Faculty/Admin. Bldg.; 577-2516
Li Way Lee	2226 Faculty/Admin. Bldg.; 577-2517

### SERVICE AREAS

Bulletin and Scheduling	2155 Faculty/Admin. Bldg.; 577-2542
Liberal Arts Graduate Office	2155 Faculty/Admin. Bldg.; 577-2690
Major/Curriculum Office	2155 Faculty/Admin. Bldg.; 577-3117
Personnel Records	2226 Faculty/Admin. Bldg.; 577-2466

### DEPARTMENTAL OFFICES

Africana Studies	51 W. Warren; 577-2321
American Studies	51 W. Warren; 577-3062
Anthropology	137 Manoogian; 577-2935
Biological Sciences	114 Biological Sciences; 577-2873
Chemistry	123 Chemistry; 577-2595
Communication Disorders and Sciences	555 Manoogian; 577-2943
Computer Science	431 State Hall; 577-2477
Criminal Justice	2228 Faculty/Admin. Bldg.; 577-2705
Economics	2074 Faculty/Admin. Bldg.; 577-3345
English	51 W. Warren; 577-2450
Geography	225 State Hall; 577-2701
Geology	201 Old Main; 577-2506
German and Slavic Languages	443 Manoogian; 577-3024
Greek and Latin	431 Manoogian; 577-3032
History	3094 Faculty/Admin. Bldg.; 577-2525
Honors Program	2305 Faculty/Admin. Bldg.; 577-3030
Humanities	51 W. Warren; 577-3035
Linguistics	51 W. Warren; 577-8642
Mathematics	1150 Faculty/Admin. Bldg.; 577-2479
Near Eastern and Asian Studies	437 Manoogian; 577-3015
Nutrition and Food Science	3009 Science Hall; 577-2500
Peace and Conflict Studies	2319 Faculty/Admin. Bldg.; 577-3453
Philosophy	51 W. Warren; 577-2474
Physics and Astronomy	135 Physics; 577-2721
Political Science	2040 Faculty/Admin. Bldg.; 577-2630
Psychology	71 West Warren Ave.; 577-2800
Romance Languages	487 Manoogian; 577-3002
Sociology	2228 Faculty/Admin. Bldg.; 577-2930
Women's Studies	51 W. Warren; 577-2450

Mailing address for all offices: (Department Name), College of Liberal Arts, Wayne State University, 656 W. Kirby, Detroit, Michigan

# ANTHROPOLOGY

Office: 137 Manoogian Hall; 577-2935  
Chairperson: Mark L. Weiss

## Professors

Barbara C. Aswad, Marietta L. Baba, James B. Christensen (Emeritus),  
Bernice A. Kaplan, Bernard Ortiz de Montellano, Arnold R. Pilling,  
Mark L. Weiss

## Associate Professor

Gordon L. Grosscup (Emeritus)

## Assistant Professors

Andrea Sankar, Frances Trix

## Adjunct Professors

Morris Goodman, Gabriel W. Lasker (Emeritus), Madeleine Leininger,  
Guerin Montilus, Eugene Perrin

## Lecturer

Yun K. Lee

## Adjunct Associate Professor

Elizabeth Briody

## Adjunct Assistant Professor

Karen Davis

## 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, historical archaeology, urban anthropology, applied anthropology, business anthropology, industrial and organizational anthropology, and development anthropology*

Anthropology is a comparative social science which seeks to uncover principles that govern human behavior. It 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 should 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 20-30 and 192-194, 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 14. Additionally, applicants must satisfy the following:

- (1) The student must have completed Anthropology 210 and 211 or their equivalents. Admission may be granted while these deficiencies are remedied.
- (2) The student must have an undergraduate honor point average of at least 3.0. Admission may be granted in exceptional cases where the honor point average is less than 3.0.
- (3) 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.
- (4) The student must submit a letter explaining the details of his/her plans for graduate work in anthropology, should the student be admitted.
- (5) The Graduate Record Examination (GRE) may be required.

Applicants will not be admitted to graduate work until this material has been received and evaluated.

**Matriculation:** All applicants for the M.A. with a Major in Anthropology must initiate their graduate work as Plan A 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, the student must take an examination in his/her anticipated field of specialization. If the student demonstrates superior competence in passing this examination, and has shown (by term papers, work in directed study, and the like) the ability to write and conduct research, he or she may be allowed to continue work as Plan C candidates. If the examination is not passed at a sufficient level of achievement, and/or the student does not evidence the requisite skills in writing and research, he or she will be required to complete the master's degree under Plan A.

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:

*Plan A: Twenty-four credits in course work plus an eight-credit thesis.*

Twenty-four credits must be earned as a graduate student; of which twenty-one credits must be in anthropology. The following core courses or their equivalents must have been completed with a grade of 'B' or better: Anthropology 520; two of the following three courses: ANT 596, 638, or 639; one course each in physical anthropology, anthropological linguistics and anthropological archaeology; one course in qualitative anthropology methods at the 700 level or a course approved by the student's adviser and the Graduate Committee; a course in quantitative anthropology methods or an equivalent approved course in statistics; one anthropology area studies course; and one anthropology seminar at the 700 level. Any of the above requirements may have been met when the student was 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. Students must satisfactorily complete a 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 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 options:

*Plan A: Thirty-two credits and an eight credit thesis.*

*Plan C: Thirty-two credits including a three-credit report on field training experience.*

Both options for this concentration require the following courses be completed as an undergraduate or graduate student: ANT 520, 531 or 532, 540, 570, 596 or 638 or 639, 720 and an additional class in methodology and research techniques, 768, 769, 796, 797 or 899, and SOC 628 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.

The Plan A option requires a three-credit internship (ANT 796) involving supervised field training, an eight-credit thesis (ANT 899) and final written and oral examinations. The Plan C option requires the three-credit internship (ANT 796), a three-credit report on the field training (ANT 797) submitted in thesis format, and a written examination.

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 14. 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 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. The student must submit a letter explaining his or her plans for graduate work in anthropology, should the student be admitted to the Ph.D. program. The Graduate Record Examination (GRE) may also be required. 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 192–194 and 20–30, 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, complete three 700-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:** The student 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 either 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 Ph.D. 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, 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 32 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:** An institutional award of \$100 to \$200 given to the most outstanding teaching assistant, and a research grant of \$500 given to an outstanding graduate student.

## GRADUATE COURSES (ANT)

*The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.*

### **506 Urban Anthropology. (SOC 554). Cr. 3**

Prereq: ANT 210 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)

### **514 Biology and Culture. Cr. 3**

Prereq: ANT 210 or 211 or consent of instructor. Interrelationships between the cultural and biological aspects of man; human genetic variability, human physiological plasticity and culture as associated mechanisms by which humans adapt to environmental stress. (I)

### **518 Introduction to Forensic Science. Cr. 3**

Prereq: CRJ 101 or ANT 211 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)

### **519 Human Osteology. Cr. 3**

Prereq: ANT 211. Introduction to the identification and measurement of human skeletal material. Topics include: anatomical nomenclature, measurement and analysis of human skeletal parts (including aging and sexing), paleo-pathological diagnoses. (I)

### **520 Social Anthropology. Cr. 3**

Prereq: SOC 201 or ANT 210. Types of social organization and cultural heritage; ancient, primitive and complex cultures analyzed, compared, contrasted. (Y)

### **521 Methods in Anthropology. Cr. 3**

Prereq: ANT 210, 12 credits in anthropology, elementary statistics or consent of instructor. A survey of research techniques in anthropology. (Y)

### **522 Women in Development. Cr. 3**

Social change generated when theories, technologies, financial power and consumer goods from industrial nations come in contact with non-industrial ones. Societal ideologies, class issues and outside influences are critical to gender, economic and political issues. (Y)

### **524 Cross Cultural Study of Gender. Cr. 3**

Prereq: ANT 210 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)

### **526 The African Religious Experience: A Triple Heritage. (AFS 526). 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)

### **527 Introduction to Archaeology. Cr. 3**

Prereq: ANT 210. Archaeological methods and theory, artifact analysis and dating techniques. (Y)

### **528 Field Work in Archaeology of the New World. Cr. 5(Max. 10)**

Prereq: ANT 210 and consent of instructor; 527 recommended. Material fee as indicated in *Schedule of Classes*. Introduction to reconnaissance and excavation of sites; preparation and cataloging of specimens. (F)

### **531 Language and Culture. (LIN 531). Cr. 3**

Prereq: ANT 210 or 520 or SOC 201 or consent of instructor. Introduction to the structure of language and to the ways that humans use language in the construction of human worlds. Diversity of the world's languages and universal properties of language; theories of language change. (F)

### **532 Language and Society. (LIN 532). Cr. 3**

An introduction to the functions of language in many kinds of human groups. Languages used to express social roles and statuses, caste, class, and ethnic diversity. Such aspects of language variability as 'street' or vernacular languages, literary standard languages, pidgin and creole languages, and multilingualism. (W)

### **537 Magic, Religion and Science. Cr. 3**

Prereq: ANT 210 or 520 or SOC 201 or consent of instructor. The nature and variety of religious belief and practice; theoretical interpretations. (B)

### **540 Anthropology of Health and Illness. Cr. 3**

Prereq: ANT 210 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)

### **541 Anthropology of Age. Cr. 3**

Prereq: ANT 210 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)

### **551 Precolombian Mesoamerican Cultures. (CBS 351). Cr. 3**

Prereq: ANT 210 or consent of instructor, or CBS 201. Survey of the history and characteristics of cultures in Mesoamerica prior to colonization, from the Maya and Olmec to the Aztec. (I)

### **560 Anthropological Museology. Cr. 3**

Prereq: ANT 210 and 527 or consent of instructor. Introduction to specimen identification and care, cataloging procedure, display techniques and museums. (I)

### **570 Applied Anthropology. Cr. 3**

Prereq: ANT 210 or 520 or consent of instructor. The application of anthropological concepts and methods to contemporary issues of public concern in the United States and developing nations. (I)

### **596 Capstone Seminar in Anthropology. Cr. 3**

Prereq: upper division standing as undergraduate anthropology major or graduate status with some anthropology background or ANT 210. Current analysis of theoretical issues in each of the four fields of anthropology. (Y)

### **608 Studies in Folklore. (ENG 560). Cr. 3**

Prereq: ENG 228 or ENG 360 or ENG 465 or ANT 210 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)

### **617 Political Anthropology. Cr. 3**

Prereq: ANT 210 or 520 or SOC 201 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)

**618 Theory and Problems of Emergent Countries.**  
(SOC 694). Cr. 3(Max. 6)

Prereq: ANT 210 or 520 or S S 191 or SOC 201 or consent of instructor. Underdeveloped and developing countries. Emergent nationalism and socio-cultural factors affecting change. Cultural, demographic, institutional, technological aspects. (I)

**623 Cultures of Sub-Saharan Africa.** Cr. 3

Prereq: ANT 210 or S S 191 or SOC 201 or consent of instructor. Sub-Saharan African cultures and societies; emphasis on both complex and simple political systems. (I)

**629 Culture Area Studies.** Cr. 3

Prereq: ANT 210 or 520 or SOC 201 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)

**636 (HIS 786) Oral History: A Methodology for Research.**  
(L S 777). 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)

**638 Anthropological Theory Before 1940.** Cr. 3

Prereq: ANT 210 or 520 or consent of instructor. Theoretical analysis and explanation of contemporary anthropological problems as perceived in Europe and America before 1940. (F)

**639 Contemporary Theory in Anthropology.** Cr. 3

Prereq: ANT 638 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)

**640 Ethnicity and Aging.** Cr. 3

Prereq: SOC 501 or ANT 210 or ANT 520 or consent of instructor. An analysis of the position, function and role of the elderly in selected societies around the world. (I)

**641 (NUR 600) Transcultural Health and Life Cycle.** Cr. 3-5

Prereq: introductory course in anthropology or consent of instructor. Comparative theoretical and research focus on cognitive and symbolic health care beliefs and practices of selected Western and non-Western cultures, related to the life cycle: infancy, childhood, adolescence and adulthood. (I)

**645 Culture, Health Policy and AIDS.** Cr. 3

Prereq: ANT 210 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)

**649 Historical Archaeology of North America.** Cr. 3

Prereq: ANT 212 or 527 or consent of instructor. Archaeological techniques and their uses in augmenting the historical record of North America; types of historic sites; preparation of land use histories; artifact types; interpretation of excavations. (I)

**650 North American Prehistory.** Cr. 3

Prereq: ANT 210 or consent of instructor; 527 recommended. Prehistory of North America north of Mexico from the late Pleistocene to Euro-American contact. (I)

**665 Studies in Physical Anthropology.** Cr. 2-4 (Max. 12)

Prereq: ANT 211 or consent of instructor. Selected topics in physical anthropology. Topics to be announced in *Schedule of Classes*. (I)

**668 Studies in Cultural Anthropology.** Cr. 2-4(Max. 12)

Prereq: ANT 210 or 520 or consent of instructor. Selected topics in cultural anthropology. Topics to be announced in *Schedule of Classes*. (I)

**670 Topics in Medical Anthropology.** Cr. 3

Prereq: ANT 210 or consent of instructor. Selected topics in medical anthropology with relevance to theory, practice, and research. (B)

**671 Medical Anthropology: Alcohol/Drug Use and Abuse.**  
Cr. 3

Prereq: ANT 210 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)

**672 Topics in Business and Industrial Anthropology.**  
Cr. 3-8

Prereq: ANT 210 or equiv.; 315 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)

**692 Field Practicum in Business/Industrial Anthropology.**  
Cr. 2-8

Prereq: ANT 720 or consent of instructor. Students gain firsthand experience in conceptualizing, conducting, and/or implementing applied research in business/industrial organizations. (F,W)

**720 Methodology and Research Techniques.**  
Cr. 1-3(Max. 6)

Prereq: consent of instructor. Preparation for field or laboratory research. Training and techniques relevant to areas of specialization of students. (B)

**762 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)

**763 Seminar in Problems and Concepts in Cultural Anthropology.** Cr. 3(Max. 9)

Central concepts and theories. Current developments, problems and contemporary research orientations. Topics to be announced in *Schedule of Classes*. (Y)

**766 Seminar in Urban Anthropology.** Cr. 3 (Max. 9)

Prereq: ANT 506 or consent of instructor. Identification and evaluation of urban problems. Topics to be announced in *Schedule of Classes*. (I)

**768 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)

**769 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)

**790 (ANA 790) Directed Study in Physical Anthropology.**  
Cr. 1-8(Max. 8)

Prereq: written consent of adviser and graduate officer. (T)

**791 Directed Study in Linguistics.** (LIN 791).  
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)

**792 Directed Study in Archaeology.** 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)

**793 Directed Study in Cultural Anthropology.**  
**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)

**794 Directed Study in Medical Anthropology.**  
**Cr. 1-9(Max. 9)**

Prereq: written consent of adviser and graduate officer. Open only to M.A. candidates or Ph.D. applicants. Research problem requiring field work or intensive and systematic reading of original technical literature. (T)

**795 Directed Study. Cr. 1-9(Max. 9)**

Prereq: written consent of adviser and graduate officer. (T)

**796 Internship in Applied Medical Anthropology.**  
**Cr. 3-6(Max. 6)**

Prereq: consent of adviser. Open only to M.A. candidates in applied medical anthropology. 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)

**797 Internship: Final Report. Cr. 3**

Prereq: ANT 796. Open only to students in applied concentrations leading to the M. A. degree in anthropology. Final report on internship project to be developed in cooperation with faculty advisor and sponsor at the internship agency. (T)

**798 Field Problem. Cr. 1-9(Max. 9)**

Prereq: consent of adviser and written consent of 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)

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

Prereq: consent of adviser. (T)

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

Prereq: consent of doctoral adviser. Offered for S and U grades only. (T)

# ART AND ART HISTORY

*Office:* 150 Art Building, 450 Reuther Mall; 577-2980

The discipline of art history is one of the few academic subjects that gives a student a profound understanding of both Eastern and Western civilizations over a 5,000-year period. Students of art history become more visually aware of their surroundings and learn to appreciate, analyze, and critically appraise works of art. Aside from gaining visual acuity, the student of art history learns to understand art as an outgrowth of specific historic societies, for works of art reflect the complex socio-cultural, political, economic and psychological dynamics of a culture. In addition, the purpose of art history is to train students for professional roles as art history teachers on the high school and college level, and to prepare them to assume curatorial, educational, and administrative roles in museums and art galleries.

## Graduate Degrees

*MASTER OF ARTS with a major in art history*

*POST-MASTER'S CERTIFICATE in Museum Practice*

Students may elect to earn the Master of Arts degree in art history, or the Certificate in Museum Practice, from either the College of Liberal Arts, or the School of Fine and Performing and Communication Arts. Those electing to earn the degree or certificate from the College of Liberal Arts must fulfill any requirements for graduate degrees or post-baccalaureate programs of this college which are supplementary to those of the College of Fine and Performing and Communication Arts; see pages 192-194.

For information relative to *Admission, Candidacy, and Degree Requirements* and for *Courses of Instruction*, see the Department of Art and Art History, College of Fine, Performing, and Communication Arts; pages 145-168.

Students who elect to earn their degrees or certificates in the College of Liberal Arts should consult the Chairperson, Department of Humanities, 51 W. Warren, Room 423 (577-3035) for clarification and further information.

# BIOLOGICAL SCIENCES

Office: 114 Biological Sciences; 577-2873

Chairperson: P. Dennis Smith

Associate Chairperson: R. Anton Hough

Academic Services Officers: Laura Hamdan, Linda R.

VanThiel

Academic Staff Officers: Laurie P. Brooks, Julia Sosnowsky

## Professors

Stanley K. Gangwere, R. Anton Hough, Seikichi Izawa, James M. Jay, Kazutoshi Mayeda, Hiroshi Mizukami, William S. Moore, David L. Njus, Howard R. Petty, Harold W. Rossmore, Albert Siegel, P. Dennis Smith, John D. Taylor, William L. Thompson

## Emeriti Professors

Walter Chavin, David R. Cook, Dominic L. DeGuisti, Laurence Levine, Lida H. Mattman, William Prychodko, Claude M. Rogers

## Associate Professors

Robert Arking, Kuo-Chun Chen, Hector R. C. Fernandez, D. Carl Freeman, V. Hari, Leo S. Luckinbill, Ann Sodja, Robert S. Stephenson, Curtis J. Swanson

## Emeritus Associate Professor

Willis W. Mathews

## Assistant Professors

Philip R. Cunningham, Edward M. Golenberg, Allen W. Nicholson, Allen J. Rosenspire

## Graduate Degrees

**MASTER OF SCIENCE** with majors in *Biological Sciences and 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 Science With a Major in Biological Sciences

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14. 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.

**DEGREE REQUIREMENTS:** The Department offers the Master of Science degree under the Plan A or Plan C options.

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 192-194 and 20-30 respectively. Courses required will vary with preparation and fields of specialization. These will be determined by the student's graduate adviser with review and approval by the Graduate Committee Chairperson and the Department Chairperson.

**Plan A:** Twenty-four credits in course work, plus a thesis (eight credits) based on completion of a research program. Recommended for students planning to go on to a doctoral degree.

Under **Plan A**, eight credits of the required thirty-two must be in original laboratory or field research under the direction of the student's major adviser. At least one-half 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.

**Plan C:** Thirty credits in course work, at least twelve of which are from a prescribed core program.

Students must elect courses according to departmental requirements. A list of these course requirements is available in the Departmental Advising Office, 110 Biological Sciences.

**Candidacy:** Applicants become degree candidates by filing a plan of work which has been approved by the Chairperson of the Department Committee on Graduate Study.

## Master of Science With a Major in Molecular Biotechnology

The Molecular Biotechnology Program is 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 in an internship situation in the laboratories of the Program's cooperating faculty.

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14. 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.

**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 192-194 and 20-30 respectively.

**Candidacy:** Applicants become degree candidates by filing a plan of work which has been approved by the Chairperson of the Department Committee on Graduate Study.

Course work will be completed in accordance with the schedule set by the Program's director, as outlined below. Students must consult with Dr. Robert Arking each semester, prior to registration.

<i>Semester One (Fall)</i>	<i>credits</i>
BIO 701 — Introduction to Molecular Biotechnology .....	1
BIO 750 — Prokaryotic Gene Structure and Function .....	4
Elective and/or prerequisites (if needed)	

<i>Semester Two (Winter)</i>	
BIO 800 — Special Topics: Seminar in Molecular Biotechnology .....	1-6
BIO 612 — Molecular Cell Biology Laboratory II .....	3
BIO 751 — Eukaryotic Gene Structure and Function .....	4
Elective	



### Semester Three (Spring/Summer)

- BIO 778 — Genetic Engineering Laboratory II ..... 6  
This is a full-time, five day per week laboratory in which the student learns the various DNA methodologies under the supervision of a faculty expert.  
BIO 800 — Special Topics: Seminar in Molecular Biotechnology ..... 1-6

### Semesters Four and Five (Fall and Winter)

- BIO 800 — Special Topics: Seminar in Molecular Biotechnology ..... 1-6  
BIO 896 — Research in Molecular Biotechnology ..... 1

## Doctor of Philosophy With a Major in Biological Sciences

**Admission:** In addition to the requirements of the Graduate School (see page 14), the applicant should present a bachelor's or master's degree with a major in a biological or other science.

Applicants must take the Graduate Record Examination, both the Aptitude portion and the Advanced Test in Biology or other area of specialization, and 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;
- at least eight credits of research or course work in a minor;
- no more than thirty-two credits in BIO 796, Research Problems; and
- thirty credits in course work at the 700 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 192-194 and 20-30 respectively.

The *Qualifying Examination* consisting of written and oral parts 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 *Prospectus* must be written and successfully defended 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 in the Department of Biological Sciences.

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 32 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.

The following awards are open to doctoral students in Biological Sciences; contact the Department for details:

**Wilhemina B. Haley Awards:** two to ten (depending on resource availability) summer research stipends of approximately \$2000 each, for doctoral students.

## GRADUATE COURSES (BIO)

*The following courses, numbered 500-999, are offered for graduate credit. Courses numbered 500-699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090-499). Courses in the following list numbered 500-699 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 463.*

*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.*

### 504 Biometry. (Lct: 3; Lab: 3). Cr. 4

Prereq: MAT 201, MAT 221 or equiv. 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)

### 507 Genetics. Cr. 4 or 5

Prereq: BIO 152 or 220. If elected for five credits, material fee applies. Material fee as indicated in *Schedule of Classes*. Transmission, nature and action of genetic material in organisms. Laboratory experiments to demonstrate principles of genetics. (T)

### 509 Evolution. (Lct: 3). Cr. 3

Prereq: BIO 507. Evidence for organic evolution; the nature and consequences of the process. (W)

### 510 Limnology. (Lct: 3; or Lct: 3; Lab: 6). Cr. 3 or 5

Prereq: BIO 152; one course in chemistry or physics. Material fee as indicated in *Schedule of Classes*. Physical, chemical and biological properties of freshwater environments. (B)

### 511 Biogeography. (Lct: 3). Cr. 3

Prereq: BIO 152. Introductory study of principles and patterns of plant and animal distribution. (B)

### 512 Quantitative Genetics. (Lct: 4). Cr. 4

Prereq: college algebra, BIO 507; 312 or 509. Transmission, distribution, and quantitative effects of genetic elements in populations. (I)

### 518 Field Investigations in Biological Sciences. (Fld: 6). Cr. 2-12(Max. 20)

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)

### 523 Environmental Microbiology. (Lct: 3; or Lct: 3; Lab: 6). Cr. 3 or 5

Prereq: BIO 220 and CHM 226. Material fee as indicated in *Schedule of Classes*. Microbiology of air, water, sewage; techniques for enumerating bacteria in water, sewage, milk; principles of disinfection. Field trips. (I)

### 525 Microbiology of Foods. (Lab: 4; Lct: 3). Cr. 4

Prereq: BIO 220. Study of microorganisms in our foods with emphasis on ecological parameters that affect their growth and activity. Laboratory stresses official methodology for determining pathogens

and spoilage organisms; and demonstrations of role of ecologic parameters in predicting the activities of microbes in foods. (F)

**531 Immunology. (Lct: 3). Cr. 3**

Prereq: BIO 220 and CHM 226. Antibody formation, antigen structure, antigen-antibody reactions. (W)

**546 Plant Physiology. (Lct: 3). Cr. 3**

Prereq: BIO 152; two courses in general chemistry or equivalent. Physiology in relation to form in the intact plant; emphasis on growth and development, nutrition, water economy, plant-soil interactions, and translocation. (W)

**547 Plant Physiology Laboratory. (Lab: 6; Lct: 1). Cr. 3**

Prereq. or coreq: BIO 546. Laboratory experiments on basic physiological functions of higher plants at organ, cellular, subcellular and enzyme levels; hormones and growth, transpiration, water conduction, photosynthesis, respiration. (W)

**548 Plant Pathology. (BIO 748). Cr. 3**

Prereq: BIO 152, 220. Principles of plant infection, structure and life cycle of plant pathogens, defense mechanisms, spread and control of plant disease. (B)

**550 Developmental Biology of Plants.**

(Lct: 2; or Lct: 2; Lab: 6). Cr. 2 or 4

Prereq: BIO 152. Material fee as indicated in *Schedule of Classes*. Gametogenesis and development of plants. Control of development by hormones and environment. Tissue culture of cells and experimental plant embryology. (B)

**555 Systematic Botany. (Lab: 3; Lct: 2). Cr. 3**

Prereq: BIO 152. Material fee as indicated in *Schedule of Classes*. Principles and methods of taxonomy and identification of native vascular plants. (I)

**560 Invertebrate Zoology. (Lct: 3; Lab: 3). Cr. 4**

Prereq: BIO 152. Material fee as indicated in *Schedule of Classes*. Comparative and functional morphology, embryology; physiology and evolution of invertebrate animals. (I)

**561 Vertebrate Embryology. (Lab: 4; Lct: 3). Cr. 4**

Prereq: BIO 152. Material fee as indicated in *Schedule of Classes*. 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. (W)

**562 Developmental Biology. (Lct: 3). Cr. 3**

Prereq: BIO 507. An analytical study of the mechanisms which govern the flow of information into and out of the nucleus thereby setting in motion various developmental processes common to many eukaryotic systems. Analysis of the causes of the events depicted in descriptive embryology. (B)

**563 Histology. (Lab: 4; Lct: 3). Cr. 4**

Prereq: BIO 271. Material fee as indicated in *Schedule of Classes*. Characteristics and identification of normal mammalian tissues. Micro-anatomy of the mammal. Functional interpretation of microstructure and fine structure. (W)

**564 Cancer Biology I. (Lct: 3). Cr. 3**

Prereq: BIO 220 or 340; PHY 214; CHM 226 or consent of instructor. Introduction to integrated analysis of cancer and cell biology, pathology, etiology and therapy. (F)

**565 Cancer Biology II. (Lct: 3). Cr. 3**

Prereq: BIO 564 or consent of instructor. Advanced, integrated analysis of cancer and cell biology, pathology, etiology and therapy. (Y)

**569 Animal Behavior. (Lct: 3). Cr. 3**

Prereq: 16 credits in biology. Function, biological significance, causation, and evolution of species-typical behaviors which are part of the animal's behavioral repertoire under natural conditions. (W)

**570 Natural History of Vertebrates. (Lab: 3; Lct: 2). Cr. 3**

Prereq: 16 credits in biology. Material fee as indicated in *Schedule of Classes*. Life histories, survival and evolutionary strategies, laboratory and field identification, including study techniques of vertebrates; Michigan wildlife. Field trips. (I)

**572 Ornithology. (Lab: 3; Lct: 2). Cr. 3**

Prereq: BIO 152. Material fee as indicated in *Schedule of Classes*. Morphology, systematics, ecology, evolution, physiology and behavior of birds. Field trips. (I)

**574 Entomology. (Lab: 6; Lct: 2). Cr. 4**

Prereq: BIO 102. Material fee as indicated in *Schedule of Classes*. The systematics, classification, and functional morphology of insects; methods of collection and study of insect specimens. (I)

**575 Biology of Aging. (BIO 775). (Lct: 3). Cr. 3**

Prereq: BIO 151 or 507 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)

**581 Embryology. (Lct: 3). Cr. 3**

Prereq: BIO 287 or 271, or equiv. Open only to nursing students. See BIO 561. (W)

**585 (BIO 385) Human Heredity. (Lct: 3). Cr. 3**

Not for biology major credit. No credit after BIO 507. Development, anatomy and physiology of human sexual dimorphism; basis of Mendelian genetics as applied to humans; inborn errors of metabolism, genetic engineering and understanding human population dynamics. (B)

**600 Molecular Cell Biology I. (Lct: 3). Cr. 3**

Prereq: BIO 220 or 340; PHY 214; CHM 226 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)

**601 Molecular Cell Biology II. (Lct: 3). Cr. 3**

Prereq: BIO 600. 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)

**602 Methods of Analyses. (Lct: 2; or Lab: 6; Lct: 2). Cr. 2 or 4**

Prereq: one year of chemistry and biology. Material fee as indicated in *Schedule of Classes*. 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. (F)

**604 Computer Application In Life Sciences. (Lct: 2; Lab: 6). Cr. 4**

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. (Y)

**605 Techniques In Electron Microscopy. (Lab: 6; Lct: 2). Cr. 4**

Prereq: written consent of instructor. Material fee as indicated in *Schedule of Classes*. Use of the electron microscope, ancillary sectioning and darkroom equipment in present or future research efforts. Evaluation of publications which use these techniques. (B)

- 607 Human Genetics. (Lct: 3). Cr. 3**  
Prereq: BIO 507. 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)
- 608 Microbial and Cellular Genetics. (BIO 708). (Lct: 4). Cr. 4**  
Prereq: BIO 507 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)
- 610 Biosynthesis and Metabolism. (Lct: 4). Cr. 4**  
Prereq: BIO 152, CHM 224. Biosynthesis and metabolism of proteins, carbohydrates, lipids, steroids, amino acids and nucleic acids. The basic principles of enzyme kinetics in living systems. (F)
- 611 Molecular Cell Biology Laboratory I. (Lct: 1; Lab: 6). Cr. 3**  
Prereq. or coreq: BIO 600. Laboratory exercises demonstrate molecular and subcellular structures and functions of cells. (Y)
- 612 Molecular Cell Biology Laboratory II. (Lct: 1; Lab: 6). Cr. 3**  
Prereq. or coreq: BIO 601 or consent of instructor. Material fee as indicated in *Schedule of Classes*. Laboratory exercises illustrate methods and concepts of molecular biology and recombinant DNA analysis. (Y)
- 616 Biophysics and Molecular Biology. (Lct: 3). Cr. 3**  
Prereq: one year of biology and chemistry or physics. Analysis of the biologically important aspects of thermodynamics, chemical bonding, macromolecular structure, biomembranes and transport processes. (W)
- 618 Membrane Biology. (Lct: 3). Cr. 3**  
Prereq: one year of biology and chemistry; BIO 220 or 340; 600 or 616 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)
- 620 General Bacteriology. (Lct: 3). Cr. 3**  
Prereq: BIO 220 or consent of instructor; a course in organic chemistry. General bacteriological phenomena, including the diversity of bacteria, with emphasis on ideas, mechanisms and fundamental principles. (I)
- 625 Biology Instruction for Teachers. (Lct: 2). Cr. 2 (Max. 10)**  
Prereq: consent of instructor. Offered only for graduate credit; for teachers only. Discussion of basic biological principles in light of recent advances. (Y)
- 626 Laboratory Biology for Teachers. (Lab: 1). Cr. 1 (Max. 5)**  
Prereq: consent of instructor. Offered only for graduate credit; for teachers only. Laboratory component of BIO 625; basic laboratory techniques in light of recent advances in the biological sciences. (Y)
- 635 Microbial Ecology. (Lct: 2). Cr. 2**  
Prereq: eight credits in microbiology. The role and significance of microorganisms in soils, waters, and the rumen. Principles of taxonomy of the archaebacteria and the eubacteria, mineral cycling, and biomass determinations. Effect of microbes on herbicides, pesticides, and other man-made environmental chemicals. (W)
- 640 Evolutionary Ecology. (Lct: 3). Cr. 3**  
Prereq: BIO 312 or 509; 507. The merger of ecology and evolution, principally reproductive strategies. (I)
- 645 Aquatic Botany. (Lct: 3; Lab: 3). Cr. 4**  
Prereq: BIO 152. Material fee as indicated in *Schedule of Classes*. Systematics, physiology and ecology of algae and higher aquatic plants. (I)
- 664 Advanced Ecology. (Lct: 3). Cr. 3**  
Prereq: BIO 312. Discussion and analysis of recent topics in ecological theory. (I)
- 666 Neurophysiology. (BIO 766). (Lct: 3). Cr. 3**  
Prereq: BIO 340 and 610, or consent of instructor. Physiology and biophysics of neuronal control systems. (B)
- 667 Comparative Marine Animal Physiology and Biochemistry. (BIO 767). (Lct: 2; Lab: 9). Cr. 5**  
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. (Y)
- 669 Neurochemistry. (BIO 769). (Lct: 3). Cr. 3**  
Prereq: BIO 340, 610. Biochemistry of signal transmission between nerve cells; neurotransmitter synthesis, storage, and release; receptors and psychoactive drugs; neurotransmitter systems and their integration. (B)
- 684 (PHC 634) Chemical Basis of Pharmacology. (CHM 634). (Lct: 3). Cr. 3**  
Prereq: CHM 226 and BIO 151 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)
- 700 Recent Advances in Cellular and Developmental Biology. (Lct: 2). Cr. 2 (Max. 6)**  
Prereq: 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)
- 701 Introduction to Molecular Biotechnology. Cr. 1**  
Prereq: admission to molecular biotechnology program or consent of instructor. Review of origins of molecular biotechnology and its characteristic technologies; survey of applications of biotechnology to problems in industries. (F)
- 702 Comprehensive Virology. (Lct: 4). Cr. 4**  
Prereq: BIO 507 or equiv. and CHM 662 or equiv., or 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)
- 707 Physiological Genetics. (Lct: 3). Cr. 3**  
Prereq: BIO 507. 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)
- 708 (BIO 608) Microbial and Cellular Genetics. (Lct: 4). Cr. 4**  
Prereq: BIO 507 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)

**709 Molecular Genetics of Development. (Lct: 3). Cr. 3**  
Prereq: BIO 562. An examination of the current and classical research literature dealing with the role of gene action in development. (B)

**710 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)

**716 Advanced Biophysics. (Lct: 3). Cr. 3**  
Prereq: BIO 616 or consent of instructor. Biophysical aspects of life; molecular biophysics, thermodynamics of macromolecules, excited states in biology, information transport, and molecular aspects of regulation. (B)

**717 Recent Advances in Regulatory Biology and Biophysics. (Lct: 2). Cr. 2 (Max. 6)**  
Prereq: consent of instructor. Formalized and 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)

**719 (ANA 719) Neuroscience Survey. (I M 719) (PSY 719)(PHC 719)(PSL 719). (Lct: 3). Cr. 3**  
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)

**723 Antimicrobial Agents. (Lct: 2). Cr. 2**  
Prereq: BIO 220 and 610 or 620. The basis for selection and modes of action (physiological) of chemical and physical agents used to control the growth of microorganisms. (I)

**748 (BIO 548) Plant Pathology. (Lct: 3). Cr. 3**  
Prereq: BIO 102, 220. Principles of plant infection, structure and life cycle of plant pathogens, defense mechanisms, spread and control of plant disease. (B)

**750 Prokaryotic Gene Structure and Function. (BCH 750). (Lct: 4). Cr. 4**  
Prereq: BIO 507, 610 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)

**751 Eukaryotic Gene Structure and Function. (BCH 751). (Lct: 4). Cr. 4**  
Prereq: BCH 750 or consent of instructor. Detailed analysis of the structure, expression and replication of genes of eukaryotic cells and associated extrachromosomal elements. Critical discussion of studies establishing central concepts of eukaryotic gene regulation, repair and recombination. In-depth presentation of modern molecular genetic methodologies used in current investigations of eukaryotic systems. (Y)

**766 (BIO 666) Neurophysiology. (Lct: 3). Cr. 3**  
Prereq: BIO 340 and 610, or consent of instructor. Physiology and biophysics of neuronal control systems. Includes independent studies. (B)

**767 (BIO 667) Comparative Marine Animal Physiology and Biochemistry. (Lct: 2; Lab: 9). Cr. 5**  
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)

**769 (BIO 669) Neurochemistry. (Lct: 3). Cr. 3**  
Prereq: BIO 340, 610. Biochemistry of signal transmission between nerve cells; neurotransmitter synthesis, storage, and release; receptors and psychoactive drugs; neurotransmitter systems and their integration. (W)

**775 (BIO 575) Biology of Aging. (Lct: 3). Cr. 3**  
Prereq: BIO 101 or 507 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)

**778 Genetic Engineering Laboratory II. Cr. 6**  
Prereq: BIO 612 or consent of instructor. Continuation of BIO 612 laboratory experience; screening procedures and DNA sequencing methods. (Y)

**796 Research Problems. Cr. 1-8(Max. 8 for M.S. students who may not elect more than 4 credits per semester; max. 32 for Ph.D. students, who may take up to 8 credits per semester)**  
Prereq: consent of adviser or instructor. Original investigation. (T)

**800 Special Topics. Cr. 1-6(Max. 6, M.S.; max. 12, Ph.D.)**  
Prereq: consent of instructor. Various frontier aspects of biology. Work may include lectures, laboratories or discussion. Topics to be announced in *Schedule of Classes*. (Y)

**895 Graduate Seminar In Biology. (Smr: 1). Cr. 1(Max. 4)**  
Prereq: graduate standing in biology. Graduate students are required to take two semesters; doctoral students may elect on a continuing basis. Presentations by graduate staff, advanced students, and visiting lecturers. (Y)

**896 Research in Molecular Biotechnology. Cr. 1**  
Prereq: admission to biotechnology program or consent of instructor. Faculty associated with molecular biotechnology program describe their laboratory research and outline opportunities for research training. (W,S)

**899 Master's Thesis Research and Direction. Cr. 1-8(8 req.)**  
Prereq: consent of instructor. (T)

**999 Doctoral Dissertation Research and Direction. Cr. 1-16 (30 req.)**  
Prereq: consent of doctoral adviser. Offered for S and U grades only. (T)

# CHEMISTRY

*Office:* 123 Chemistry Building; 577-2595

*Chalperson:* Richard L. Lintvedt

*Academic Services Officer:* Sharon Kelley

## Professors

Robert D. Bach, Alan Brenner, Darrell D. Ebbing, John F. Endicott, Karl H. Gayer (Emeritus), Richard B. Hahn (Emeritus), William L. Hase, Carl R. Johnson, Tokuji Kimura (Emeritus), Stanley Kirschner, Norman A. LeBel, Richard L. Lintvedt, W. Martin McClain, Martin E. Newcomb, Jr., John P. Oliver, Colin F. Poole, Wendell H. Powers (Emeritus), Morton Raban, Gene P. Reck, James H. Rigby, Louis J. Romano, David B. Rorabacher, A. Paul Schaap, George H. Schenk, H. Bernhard Schlegel, Calvin L. Stevens, Tche T. Tchen

## Associate Professors

Kim F. Albizati, David M. Coleman, Joseph S. Francisco, Ronald R. Schroeder

## Assistant Professors

Ashok S. Bhagwat, Ruth Dusenbery, Robert Levis, Shahriar Mobashery, Sandra Shaner, Charles H. Winter, Regina Zibuck

## Adjunct Professors

Kenneth V. Honn, Charles King, Erhard W. Rothe

## Adjunct Associate Professors

Lois Dunkerton, Jeffrey Evelhoch

## 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, biochemistry, 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 700-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 Graduate School and the College governing graduate scholarship and degrees; see pages 20-30 and 192-194, 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 14.

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 biochemistry 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.

1. Total of twenty-two credits in course work which must include:

- (a) one credit in CHM 885;
  - (b) two or three credits of seminar (CHM 880, 881, 882, 883, or 884);
  - (c) one credit in CHM 674;
  - (d) at least twelve credits in chemistry courses open to graduate chemistry students (excluding research, seminar, CHM 674, and CHM 885) of which at least nine credits must be at the 700 level;
  - (e) seven credits of chemistry and/or cognate courses;
2. Eight credits of CHM 899 involving independent thesis research under the direction of a faculty member in the Department.
3. Submission of a satisfactory research thesis.

Chemistry courses below the 600 level may not be applied toward this degree.

## Master of Arts

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 600 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 885;
- (b) two or three credits of graduate seminar (CHM 880, 881, 882, 883, or 884);
- (c) one credit in CHM 674;
- (d) at least eighteen credits in chemistry courses open to graduate chemistry students (excluding research, seminar, CHM 674 and CHM 885) of which at least nine credits must be at the 700 level. Courses must be elected in at least four of the following fields: analytical, biochemistry, inorganic, organic, physical.

## Doctor of Philosophy with a Major in Chemistry

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14. 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 lower average must earn the master's degree with a superior academic record before acceptance as a doctoral applicant. 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 (excluding research, seminar, frontiers, and laboratory safety) with an honor point average of at least 3.25.

**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 about 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 700 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 in any one related field (biology, mathematics, physics, chemical engineering, etc.) with appropriate courses at the 500 level and above.

(b) *Distributed Chemistry Minor* may be satisfied by any combination of 700-level courses outside the major division (including 700-level courses taken to satisfy proficiency requirements).

(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 700 level.

2. *Credit by Examination:* Well-prepared students may receive up to nine credits by passing the final examinations in 600- or 700-level courses. These may be in either the major or minor fields.

3. At least four credits of graduate seminar (CHM 880, 881, 882, 883, or 884).

4. At least one credit in CHM 885.

5. One credit in CHM 674.

6. Thirty credits in CHM 999 (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 32 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)

*The following courses, numbered 500-999, are offered for graduate credit. Courses numbered 500-699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090-499). Courses in the following list numbered 500-699 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 463.*

### 502 Intermediate Inorganic Chemistry II. Cr. 2

Prereq: CHM 302 and 542 or equiv. Transition metal chemistry. Coordination compounds and organometallics. Bonding theories and reactivity. (F)

### 516 Instrumental Analytical Chemistry. Cr. 3

Prereq: CHM 132 or 312, and 540 or 542 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)

### 540 Biological Physical Chemistry. Cr. 4

Prereq: CHM 108 or 132 or equiv., MAT 202 or equiv.; prereq. or coreq: PHY 213 or PHY 217 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)

### 542 Physical Chemistry I. Cr. 3

Prereq: CHM 108 or 132, MAT 202 or equiv.; prereq. or coreq: PHY 213 or PHY 217 or equiv. Required of B.S. and ACS-approved B.A. majors. Chemical thermodynamics, phase equilibrium, solutions, surface chemistry, electrochemistry. (F,W)

### 544 Physical Chemistry II. Cr. 4

Prereq: CHM 108 or 132, MAT 202 or equiv.; prereq. or coreq: PHY 213 or PHY 217 or equiv. Required of B.S. and ACS-approved B.A. majors. Kinetic theory, empirical and theoretical kinetics, quantum theory, atomic and molecular structure, molecular spectroscopy, statistical mechanics. (F,W)

### 551 Chemical Synthesis Laboratory. Cr. 3

Prereq: CHM 227 and 302 or equiv. All fee cards must be obtained from cashier's office before attending first lab. Material fee as indicated in *Schedule of Classes*. Breakage fee as indicated in *Schedule of Classes*. Advanced techniques for the synthesis, purification and characterization of both organic and inorganic compounds. (F)

### 555 (W) Physical Chemistry Laboratory. Cr. 2

Prereq. or coreq: CHM 540 or 542 or 544 or equiv.; and PHY 214 or PHY 218 or equiv. All fee cards must be obtained from cashier's office before attending first lab. Material fee as indicated in *Schedule of Classes*. Breakage fee as indicated in *Schedule of Classes*. Principles

of measurement. Fundamental investigations of thermodynamics. Fundamental spectroscopic and kinetic measurements. (F,W)

**557 Instrumental Analytical Chemistry Laboratory. Cr. 2**  
Prereq. or coreq: CHM 516 or equiv. All fee cards must be obtained from cashier's office before attending first lab. Material fee as indicated in *Schedule of Classes*. Breakage fee as indicated in *Schedule of Classes*. Fundamentals of electronics and instrumentation. Principles and analytical applications of electrochemistry, chromatography, and spectrometry including UV-visible, IR, magnetic resonance, and mass spectrometry. (W)

**560 Survey of Biochemistry. Cr. 3**  
Prereq: CHM 224 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)

**574 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)

**598 Honors Thesis Research in Chemistry. Cr. 2-4(Max. 8)**  
Prereq: consent of adviser. Open only to students in Liberal Arts Honors Program; elect no later than first senior semester. Original investigations under direction of senior staff member. (Y)

**599 Senior Research in Chemistry. Cr. 2-4(Max. 8)**  
Prereq: consent of adviser. Must be elected by B.S. chemistry majors no later than first semester of senior year. Original investigation under the direction of a senior staff member. (T)

**604 Chemical Applications of Group Theory. (CHM 704). Cr. 3**  
Prereq: CHM 502 and 544 or equiv. Symmetry in chemical systems, development and use of character tables. Application of group theory to structure, bonding, spectroscopy and reactions. (F)

**624 Organic Spectroscopy. (CHM 724). Cr. 3**  
Prereq: CHM 226 or 232, and 132 or 312. Application of IR, NMR, UV, and mass spectrometry to the identification of organic compounds. Emphasis on interpretation of spectra. Consideration of fluorescence and phosphorescence emission spectroscopy. Recommended for students intending to do graduate or industrial work in organic chemistry. (W)

**634 (PHC 634) Chemical Basis of Pharmacology. (BIO 684). Cr. 3**  
Prereq: CHM 226 and BIO 151 or equiv. Mechanisms of action and metabolism of commonly-used drugs and toxic substances from the cellular level to whole biological systems. (Y)

**644 Computational Chemistry. Cr. 3**  
All fee cards must be obtained from cashier's office before attending first lab. Material fee as indicated in *Schedule of Classes*. Computer programming and numerical methods with applications to the solution of chemical problems, instrument control, computer assisted instruction. (W)

**660 Structure and Function of Biomolecules. (CHM 760). Cr. 3**  
Prereq: CHM 224 or 231 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)

**662 Metabolism: Pathways and Regulation. (CHM 762). Cr. 3**  
Prereq: CHM 660 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)

**663 Biological Chemistry Laboratory. (CHM 763). Cr. 2**  
Prereq: CHM 660 or equiv. Basic experiments in isolation, purification, and analysis of biomolecules. Techniques currently used in molecular biology and recombinant DNA procedures stressed. (Y)

**664 Molecular Biology. (CHM 764). Cr. 3**  
Prereq: CHM 660 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)

**674 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)

**675 Glassblowing. Cr. 1**  
Prereq: graduate standing or consent of instructor. Offered for S and U grades only. Material fee as indicated in *Schedule of Classes*. Introduction to the fundamentals of glassblowing as applied to the repair and fabrication of scientific equipment in the research laboratory. (I)

**690 Directed Study. Cr. 1-4(Max. 8)**  
Prereq: undergrad., consent of adviser; grad., consent of adviser and graduate officer. (T)

**701 Descriptive Inorganic Chemistry. Cr. 3**  
Prereq: CHM 502 or equiv. Reactions and reactivity of inorganic compounds. Emphasizes mechanistic and synthetic approaches to transition metal, organometallic, main group chemistry. (F)

**702 Physical-Inorganic Chemistry. Cr. 3**  
Prereq: CHM 604 or 704 or equiv. Structure and properties of inorganic compounds. Ligand field theory; electronic, vibrational, and magnetic resonance spectroscopy. (I)

**704 (CHM 604) Chemical Applications of Group Theory. Cr. 3**  
Prereq: CHM 502 and 544 or equiv. May not be used to satisfy the proficiency requirement in inorganic chemistry. Symmetry in chemical systems, development and use of character tables. Application of group theory to structure, bonding, spectroscopy and reactions. (F)

**710 Theory of Analytical Chemistry. Cr. 3**  
Prereq: CHM 132 or 312 or equiv. Physicochemical principles applied to reaction equilibria and kinetics of analytical interest in a variety of solvent matrices; multistage separation theory; statistical theory applied to sampling, data treatment, and experimental design. (F)

**712 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)

**716 Chromatography. Cr. 3**  
Prereq: CHM 710 or equiv. Theoretical and practical aspects of gas, liquid, and thin-layer chromatography. (B)

**720 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)

**722 Organic Reactions and Syntheses. Cr. 3**  
Prereq: CHM 720. Alkylation, condensation, and Grignard reactions; synthesis of acid derivatives; cycloadditions and unimolecular rearrangements. Scope and limitations of important synthetic methods of organic chemistry. (W)

**724 (CHM 624) 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. Consideration of fluorescence and phosphorescence emission spectroscopy. Recommended for students intending to do graduate or industrial work in organic chemistry. (W)

**741 Statistical Thermodynamics. Cr. 3**

Prereq: CHM 544 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)

**743 Chemical Kinetics. Cr. 3**

Prereq: CHM 544 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)

**747 Quantum Chemistry. Cr. 3**

Prereq: CHM 544 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)

**748 Molecular Spectroscopy. Cr. 3**

Prereq: CHM 747 or equiv. Basic theory of interaction of molecules with the electromagnetic field. Rotational, vibrational, and electronic spectra of molecules; elements of lasers, multiphoton spectroscopy. (B)

**760 (CHM 660) Structure and Function of Biomolecules. Cr. 3**

Prereq: CHM 224 or 231 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)

**762 (CHM 662) Metabolism: Pathways and Regulation. Cr. 3**

Prereq: CHM 760 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)

**763 (CHM 663) Biological Chemistry Laboratory. Cr. 2**

Prereq: CHM 760 or equiv. Basic experiments in isolation, purification, and analysis of biomolecules. Techniques currently used in molecular biology and recombinant DNA procedures stressed. (Y)

**764 (CHM 664) Molecular Biology. Cr. 3**

Prereq: CHM 760 or equiv. Nucleic acid structure and function. Mechanism and control of replication, transcription, and translation. Mutation, genetic recombination, recombinant DNA. Membranes and organelles. (W)

**766 Biomolecular Interaction. Cr. 3**

Prereq: CHM 224 and 542 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)

**790 Directed Study. Cr. 1-4(Max. 12)**

Prereq: written consent of adviser and graduate officer. (I)

**801 Chemical Catalysis. Cr. 3**

Survey of basic principles of homogeneous and heterogeneous chemical catalysis. (I)

**809 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)

**819 Advanced Topics in Analytical Chemistry. Cr. 1-3(Max. 12)**

Prereq: CHM 710 or equiv. The following topics offered in different semesters: computer interfacing, analytical spectroscopy, advanced instrumentation, surface analysis, clinical analysis, analytical mechanisms, solution luminescence. (I)

**829 Advanced Topics in Organic Chemistry. Cr. 1-3(Max. 12)**

Prereq: CHM 720 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)

**842 X-Ray Crystallography. Cr. 3**

Prereq: CHM 701 or 724 or equiv.; 604 recommended. Theoretical and practical aspects of modern x-ray crystallography. Training and practice in determination of crystal structure. (B)

**849 Advanced Topics in Physical Chemistry. Cr. 1-3(Max. 12)**

Prereq: CHM 741 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)

**869 Advanced Topics in Biochemistry. Cr. 1-3(Max. 12)**

Prereq: CHM 762 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)

**870 Research in Chemistry. Cr. 1-16(Max. 30)**

Prereq: consent of adviser. (T)

**880 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)

**881 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)

**882 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)

**883 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)

**884 Seminar in Biochemistry.**  
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 biochemistry. 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)

**885 (CHM 485) 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)

**899 Master's Thesis Research and Direction. Cr. 1-8(8 req.)**  
Prereq: consent of adviser. (T)

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

Prereq: consent of doctoral adviser. Offered for S and U grades only. (T)



## COMMUNICATION DISORDERS and SCIENCES

Office: 555 Manoogian Hall; 577-3339

Chairperson: John M. Panagos

### Professors

Lynn S. Bliss, John M. Panagos

### Associate Professor

Mervyn L. Falk

### Assistant Professors

Dorothy E. Dreyer, Sharon Y. Manuel

### Lecturers

Kristine V. Sbaschnig, Cathy Williams

### Faculty, Department of Audiology, School of Medicine

James A. Kaltenbach, William F. Rintelmann, Dale O. Robinson

### Adjunct Faculty

Herbert J. Bloom, Patricia Dukes, Fran Eldis, Sandra L. Hamlet, Joseph Honet, Alex Johnson, Susan E. Langmore, Gregory Mahr, Kathleen Pistono, Mark Simpson, John Spolyar, John Tonkovich

## Degree Programs

*MASTER OF ARTS with a major in Communication  
Disorders and Sciences*

*DOCTOR OF PHILOSOPHY with a major in Communication  
Disorders and Sciences*

The Department offers the M.A. and Ph.D. degrees. The M.A. program enables students to acquire competence in the diagnosis and treatment of communication disorders. This program is certified by the Educational Standards Board and leads to certification by the American Speech—Language—Hearing Association. The State of Michigan Teaching Certificate may also be earned by students who wish to teach in the public school system and is granted upon completion of the M.A. The Ph.D. program prepares advanced students for highly specialized teaching and research positions in speech—language pathology and speech science.

## Master of Arts

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 14. The Department requires that the applicant have a 3.0 (B-3) honor point average. A minimum of 26-30 semester credits in the area of specialization is required. Graduate Record Examination results are also required.

**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 in the major (total credits determined by major area of study).*

The graduate program should be worked out 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. CDS 700 must be included in all *Plans of Work* and should be taken at the earliest opportunity.

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 192–194 and 20–30, respectively.

**Audiology:** It is recommended that students in this area make early contact with the Department of Audiology, School of Medicine, 5E, University Health Center, 4201 St. Antoine, for specific requirements.

**Communication Disorders and Sciences:** It is essential that prospective graduate students in this area confer with an adviser in the area of Communication Disorders and Sciences 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: CDS 636, 664, 700, 702, 736, 738, 760, 761, 762, 763, 764, 765, 766 and 767.

## Doctor of Philosophy

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14. In addition, the Department requires an M.A. degree with a 3.3 (B=3.0) honor point average, ability to write effectively, and demonstrable proficiency in speaking and reading. 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 should provide three letters of recommendation verifying academic interest and ability. Graduate Record Examination results are also required. Applicants should consult the Departmental Graduate Officer.

**DEGREE REQUIREMENTS:** The Doctor of Philosophy requires a minimum of 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 192–194 and 20–30, respectively.

Additional Departmental requirements include: (1) CDS 700 or its equivalent; (2) a departmental major, and a minor outside the Department; (3) four courses in research methodologies germane to the student's dissertation research and ultimate personal objectives (proficiency in a language useful 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 research in the candidate's area of study. Additional requirements may be made by the student's advisory committee and the Departmental Graduate Committee.

## Fellowships and Assistantships

*General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 32 of this bulletin.*

Each year graduate assistantships and fellowships are awarded to qualified graduate students. Assistantships are awarded for teaching basic courses, and working within the communication disorders and

sciences clinical program. Graduate financial aid also includes University graduate fellowships, graduate–professional scholarships, the National Direct Student Loan Program, urban studies awards, Departmental awards, and student loans. For information, write to the Chairperson of the Departmental Graduate Committee.

## GRADUATE COURSES (CDS)

*The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.*

**536 Clinical Practice in Speech Pathology. (SED 534). Cr. 2**  
Prereq: consent of instructor. Material fee as indicated in *Schedule of Classes*. Supervised experience in application of methods of diagnosis and treatment of clinical cases. (T)

**633 (SED 779) Language Bases of Learning Disabilities. 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)

**636 Advanced Clinical Practice in Speech Pathology. (SED 636). Cr. 2 (Max. 8)**

Prereq: written consent of instructor. Material fee as indicated in *Schedule of Classes*. Supervised experience in application of methods of diagnosis and treatment of clinical cases. (T)

**638 Diagnostic Tests in Communication Disorders. (SED 638). Cr. 3**

Prereq: junior standing; CDS 508, 509, 514, 530, 532. Diagnostic tests and instruments used in the appraisal of speech–language disorders. Test protocol and administration procedure. (W)

**646 Communication Disorders I. (SED 646). Cr. 4**

Introduction to the clinical management of articulation and language disorders. (W)

**648 Communication Disorders II. (SED 648). Cr. 4**

Introduction to the clinical management of cleft palate, voice, and stuttering disorders. (W)

**662 Introduction to Voice Disorders and Cleft Palate. (SED 662). Cr. 3**

Prereq: CDS 530. 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)

**664 Language Pathology: Etiology and Diagnosis. (SED 664)(LIN 664). Cr. 3**

Prereq: CDS 530 and 532. Descriptions, etiology, methods of diagnosis of language disorders in children, including remediation. (F)

**700 Introduction to Graduate Study in Communication Disorders and Sciences. Cr. 3**

Required during first twelve credits of graduate study. (Y)

**701 Acoustics of Speech. (SED 507). Cr. 3**  
Prereq: CDS 508, 509. Acoustic consequences of phonetically-relevant articulatory movements. (W)

**702 Speech Production and Perception. (SED 732). Cr. 3**  
Prereq: CDS 701. Integration of the information from various disciplines involved in the production and measurement of speech and language. (F)

**730 Clinical Behavior Management in Speech/Language Pathology. (SED 736). Cr. 3**  
Therapy planning and problem-solving based on clinical models and viewing videotapes of ongoing therapy. Analysis of the clinical process from the standpoint of learning theory and behavior modification. (F)

**736 Internship in Speech Pathology. (SED 730). Cr. 2-4(Max. 4)**  
Prereq: written consent of instructor. Advanced professional experience in clinical speech language pathology. (T)

**738 Diagnosis of Speech and Language Problems. (SED 731). Cr. 3 (Max. 9)**  
Clinical practice in diagnosis; handling referral to medical specialists; planning, training, treatment procedures. (F,S)

**753 Geriatric Communication Disorders. Cr. 3**  
Prereq: graduate standing. Speech, hearing, language and cognitive problems associated with normal aging and/or various pathological conditions. (Y)

**757 Augmentative and Computer-Based Communication. Cr. 3**  
Application of nonelectronic, electronic, and computers systems for non-speaking adults and children. (Y)

**760 Advanced Clinical Methods: Phonology. (SED 760). Cr. 3**  
Prereq: CDS 660. The etiology, diagnosis and advanced treatment regimens of phonological disorders in children and adults. (S)

**761 Advanced Clinical Methods: Stuttering. (SED 761). Cr. 3**  
Prereq: CDS 661, 730. The etiology, diagnosis and treatment of stuttering disorders in children and adults. (W)

**762 Advanced Clinical Methods: Voice Disorders. (SED 762). Cr. 3**  
Prereq: CDS 662. The etiology, diagnosis and treatment of voice disorders in children and adults. (W)

**763 Advanced Clinical Methods: Aphasia. (SED 763). Cr. 3**  
Prereq: CDS 663. Assessment and remediation principles designed for the adult aphasic. (Y)

**764 Advanced Clinical Methods: Language Disorders. (SED 764). Cr. 3**  
Prereq: CDS 664. Linguistic, cognitive, pragmatic and perceptual considerations in assessment and remediation of childhood language disorders. (W)

**765 Advanced Clinical Methods: Cleft Palate Speech. (SED 765). Cr. 3**  
Prereq: CDS 662. The etiology, diagnosis and treatment of cleft palate disorders in children and adults. (S)

**766 Advanced Clinical Methods: Neuromuscular Disorders. (SED 766). Cr. 3**  
The etiology, diagnosis and treatment of neuromuscular disorders in children and adults. (F)

**767 Counseling in Communication Disorders. (SED 768). Cr. 3**  
Principles of counseling appropriate to the student's work with families of/and the communicatively disordered. Video tapes, guest counselors, and supervised counseling experience. (F)

**790 Directed Study. Cr. 1-2(Max. 6)**  
Prereq: written consent of chairperson required if replacing regular course work. Graduate study in areas not covered in scheduled curriculum, including library and field work. (Y)

**791 Directed Study: Ph.D. Cr. 1-8(Max. 8)**  
Prereq: written consent of chairperson and graduate officer. Open only to doctoral students. Directed research for major, and pilot work for dissertation. (Y)

**799 Master's Essay Direction. Cr. 1-3**  
Prereq: consent of adviser. (Y)

**809 Research in Speech Science. (SED 836). Cr. 1-3(Max. 6)**  
Laboratory research at the University or affiliated facility. (T)

**838 Seminar in Speech Science. (SED 838). Cr. 3 (Max. 12)**  
No topic may be repeated for credit. Topics to be announced in *Schedule of Classes*. (T)

**839 Seminar in Speech and Language Pathology. (SED 837). Cr. 3(Max. 18)**  
Prereq: consent of instructor. Topics to be announced in *Schedule of Classes*. No topic may be repeated for credit. (T)

**899 Master's Thesis Research and Direction. Cr. 1-8(8 req.)**  
Prereq: consent of adviser. (Y)

**999 Doctoral Dissertation Research and Direction. Cr. 1-16(Max. 30)**  
Prereq: consent of adviser. (Y)



# COMPARATIVE LITERATURE

Office: English Department, 51 W. Warren; 577-2450  
Director: Renata M. Wasserman

## Faculty

Faculty members from the Departments of English, Greek and Latin Languages and Literatures, Humanities, Near Eastern Languages and Literatures, Romance Languages and Literatures, and German and Slavic Languages and Literatures.

## MASTER OF ARTS 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 14). 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 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.

# COMPUTER SCIENCE

Office: 431 State Hall; 577-2477  
Interim Chairperson: Robert Reynolds  
Administrative Assistants: Sandra Green, Judith Lechvar

## Professors

Michael Conrad, William I. Grosky, Morteza A. Rahimi, Vaclav Rajlich

## Associate Professors

Alexis Manaster-Ramer, Robert Reynolds, Ishwar Sethi, Nai-Kuan Tsao, Horst Wedde, Seymour Wolfson

## Assistant Professors

Farshad Fotouhi, Bogdan Korel, Jia-Guu Leu, Bernard Nadel, Satyendra Rana

## Adjunct Professor

Gregory Bachelis

## Lecturer

Richard Weinand

## Graduate Degrees and Post Bachelor Certification

*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 Liberal Arts 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 form 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 forty-nine 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 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 186, 187, 201, and 221.
3. Introductory Computer Science courses 102 and 203.
4. Computer Science courses beyond the introductory level including:
  - (a) Computer Science 371, 441, 442, and 451.
  - (b) Three additional Computer Science courses numbered 300 or above, excluding CSC 495 and 590.
  - (c) At least twenty credits in Computer Science (CSC) courses must be taken at Wayne State University.
  - (d) Note that CSC 450 is required for admission to the graduate program.
  - (e) Minimum Computer Science h.p.a. of 2.5.

## 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 some 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 14. In addition to satisfying Graduate School criteria, the applicant must have:

1. A knowledge of computer science equivalent to that obtained in Computer Science 441, 442, 450, 451 and 506 (or 203 and 371).
2. Mathematical preparation equivalent to that obtained from Mathematics 186, 187, 201, and 221.
3. An overall 3.0 h.p.a. in the most recent degree received from an accredited college or university.
4. 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.

5. Scores from the Graduate Record General Examination (verbal, quantitative, and analytical).

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, it is probable that a change in adviser may be appropriate. Forms for this purpose are available from the Department office.

**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, B, or C (see below). Upon approval of the *Plan of Work* by that committee and the Dean of Graduate Studies, 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 20-30 and 192-194, 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.

## Master of Arts With a Major in Computer Science

**DEGREE REQUIREMENTS:** The Master of Arts in computer science is offered under Plan B or Plan C.

*Plan B requires a minimum of twenty-nine credits in course work plus a three-credit essay.*

The master's essay is directed by the student's committee, consisting of an adviser and one additional faculty member. All committee members must read and approve the essay, after which it must be presented at a public session prior to final approval.

### Course Requirements:

1. The student must take thirty-two credits including a minimum of twenty-six credits in computer science (CSC) courses exclusive of CSC 799.
2. A minimum of twelve credits earned in CSC courses numbered 700 or above, exclusive of CSC 790 and CSC 799.
3. At least one course from: CSC 651, CSC 658.
4. Three credits in CSC 799.
5. No more than six credits in CSC 790.

*Plan C requires a minimum of thirty-two credits earned in course work, and successful completion of a final oral examination in the declared area of concentration conducted by the Graduate Committee.*

### Course Requirements

1. The student must take thirty-two credits with a minimum of twenty-nine credits in computer science (CSC) courses exclusive of CSC 790.

2. A minimum of twelve credits earned in courses numbered 700 or above, exclusive of CSC 790.
3. At least one course from: CSC 651, CSC 658.
4. No more than six credits in CSC 790.

## 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-two 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. Theses are technical papers describing the original creative work of the author. Students should consult the Graduate School for specifics of the format and presentation of the thesis.

### Course Requirements:

1. The student must take a minimum of thirty-two credits, with at least twenty-one credits in computer science (CSC) courses and eight credits in master's thesis (CSC 899).
2. A minimum of twelve credits earned in courses numbered 700 or above, exclusive of CSC 790 and CSC 899.
3. At least one course from: CSC 651, CSC 658.
4. No more than six credits in CSC 790.

## 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 an in-depth understanding of the subject matter of computer science, as well as to those who possess the ability to make original contributions to the advancement of knowledge in the field. It requires familiarity with cognate disciplines and facility in the use of research techniques.

The Ph.D. program strives to develop experts and professionals who will continue in academic work and/or enter into the business/industrial complex. It encourages the attainment of excellence in research and scholarship necessary to catalyze the advancement of computer technology. 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 14. Doctoral applicants must have completed a master's degree in computer science or reached an equivalent level of advancement. The Department Graduate Committee 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 academic and professional records indicate an ability to succeed in advanced study and research. The requirements for admission to the Ph.D. program in computer science include:

1. A master's degree in computer science or equivalent.
2. Course work in theoretical computer science equivalent to that obtained in CSC 651 and CSC 658.
3. An overall 3.3 honor point average in the most recent degree received from an accredited college or university.
4. Three letters of recommendation from faculty members of accredited colleges or universities.
5. Scores from the Graduate Record General Examination (verbal, quantitative, and analytical).

Furthermore, the applicant's academic record is reviewed for evidence indicative of his/her ability to effectively pursue advanced studies in computer science and for the potential to conduct research. Final determination on acceptance is made by the Department's Graduate Committee.

**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 192-194 and 20-30, 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. A student will normally take four years to complete the program, which is comprised of six major stages:

1. **Program Selection:** The first stage is devoted primarily to coursework 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 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 coursework at or above the 700 level. Twenty-one of these credits must be in course work other than directed study (CSC 790) and must include CSC 651 and CSC 658.
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 his/her doctoral committee and must pass both parts of the examination by the end of his/her 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 his/her *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 Prospectus, 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 32 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 28 for the fall term, and by October 30 for the winter term of the preceding academic years. Late applications will be considered only on the basis of available positions.

## Facilities

The Department facilities are organized around six research laboratories (artificial intelligence, biocomputing, database, parallel and distributed, software engineering, and vision) and several instructional laboratories. The laboratories are equipped with Sun and DEC workstations as well as IBM-compatible PCs and Apple Macintoshes. The specialized equipment consists of AI workstations, mobile robots, video cameras, high quality VCRs, a sixteen-node transputer which is accessible through the departmental network, and image processing hardware. The laboratories are interconnected via Ethernet and AppleTalk LANs which are, in turn, connected to NSFnet.

The University's Computing Services Center currently has three large IBM and Amdahl computers which support the Department's instructional needs. The University is a participant in the Merit and Telenet Computer Networks which permit communication throughout the United States, Canada, and much of the world.

## GRADUATE COURSES (CSC)

*The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.*

**506 Advanced Concepts in Computer Science. Cr. 4**  
Not offered for major or minor credit. Student computer account required. Introduction to theoretical computer science, survey of programming languages; characteristics of micro computers. (I)

**511 Advanced Software Development. Cr. 3–4**  
Prereq: CSC 371. Offered for 4 credits to interdisciplinary M.A. students only. Student computer account required. Selection of programming language; debugging techniques and tools; program maintenance; software economics; team programming and its application to projects; software life cycle. (Y)

**513 Introduction to Information Systems. Cr. 4**  
Prereq: CSC 441. Student computer account required. Organizations as adaptive dynamic system. Abstraction–synthesis methodology of information systems development: information needs analysis, requirements analysis, design and implementation of information systems related software. (Y)

**518 Introduction to Modelling and Simulation. (I E 518). Cr. 3**  
Prereq: CSC 203 or equiv. and MAT 202. Student computer account required. Introduction to main concepts: modelling objectives, system boundaries, model formalism, experimentation with models, simulation. Concentration on finite state, cellular space and simple continuous and discrete event models. (I)

**519 Computational Modeling of Complex Systems. Cr. 3**  
Prereq: knowledge of a programming language; MAT 201. Student computer account required. 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)

**520 Principles of Programming Languages. Cr. 3**  
Prereq: CSC 371 and 441. Introduction syntax, semantics, defining syntax, BNF, context-free grammars, parse trees, data types, scope and extent, parameter passing, functional programming, data abstraction, concurrent programming, object-oriented programming. (Y)

**526 Distributed Systems I. Cr. 3**  
Prereq: CSC 450. Distributed control and parallelism; synchronization of distributed processes; concurrent programming languages and their semantics; formal specification and analysis techniques. (Y)

**537 (ECE 562) Mini- and Microcomputers. Cr. 4**  
Prereq: CSC 451, ECE 262, ECE 468. 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. (I)

**542 Introduction to Computer Networking. Cr. 3**  
Prereq: CSC 442 and MAT 221. Student computer account required. Network communication in ISO/OSI seven-layer model; long-haul and local area networks; network topologies; error detection and correction; transport problems; applications. (I)

**580 Expert Systems: Tools and Languages. Cr. 3**

Prereq: CSC 371 or CHE 304. Survey of languages and tools for the development of expert systems applications. Introduction to Lisp, Prolog, Smalltalk and various commercially-available expert system environments; specific applications to medicine, engineering, computer science, and the like. (I)

**586 Introduction to Pattern Recognition and Computer Vision. Cr. 3**

Prereq: senior standing. Feature extraction and classification model for recognition; simple classification methods and classifier design; syntactic model for recognition; acquisition and representation of visually-sensed data; analysis of binary images for simple part recognition and inspection tasks; model based recognition and matching; available vision systems. (Y)

**587 Computer Graphics. Cr. 3**

Prereq: CSC 371, MAT 225. Student computer account required. Basic geometrical concepts, graphics primitives, two-dimensional transformations, segmented files, windowing and clipping, camera models, and 3-D transformations. (I)

**588 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 computer; implication of biological information processing principles and mechanisms for artificial intelligence. (B)

**590 Directed Study. Cr. 1-4(Max. 8)**

Not for graduate credit. Individual study as agreed on by student and supervising faculty. Primarily for material not covered in regular courses. (T)

**599 Honors Thesis. Cr. 3 or 6(3 req.)**

Prereq: senior standing. Offered for 6 credits with consent of thesis adviser and undergraduate committee. Student computer account required. Independent study under supervision. (T)

**619 Computational Modeling Laboratory. Cr. 3**

Prereq: knowledge of a programming language. Student computer account required. Practical experience in the implementation and documentation of computer models. (I)

**624 Program Correctness and Problem Specification. Cr. 3**

Prereq: CSC 520. Problem and data specification; predicate and proposition logic, axiomatic theory and its model; many sorted algebras, data types and data abstraction; partial and total correctness (Floyd, Hoare, Dijkstra's proving schemes); structured induction correctness of concurrent program; problem solving and programming methodology. (I)

**640 Engineering Design of Computer Operating Systems. (ECE 760). Cr. 4**

Prereq: ECE 564 or CSC 442. Student computer account required. Design and implementation of operating systems for digital computers. Sequential and concurrent processes, processor and store management, scheduling algorithms and resource protection. (I)

**645 Structure of Compilers I. Cr. 3**

Prereq: CSC 520. Lexical analysis and symbol table; syntactical analysis of expressions and statements; error detection; translation into intermediate code and its correctness. (I)

**651 Theory of Computation. Cr. 3**

Prereq: CSC 450. Finite state machines; automata; determinism and indeterminism; regular expressions; grammars and formal languages; Chomsky's hierarchy; parsing; pushdown automata; Turing machines. (Y)

**658 Analysis of Algorithms. Cr. 3**

Prereq: CSC 371. Student computer account required. Asymptotic and non-asymptotic complexity measures of algorithms and programs; design of efficient algorithms; complexity measures of

important algorithms (searching, sorting, graph algorithms), classes of P and NP, intractable problems. (I)

**661 Computational Algorithms: Analysis. Cr. 3**

Prereq: MAT 203 and CSC 203 or equiv. Student computer account required. Floating point arithmetic; use of mathematical software packages; interpolation; numerical integration and differentiation; solution of non-linear equations; solution of ordinary differential equations. (I)

**662 Matrix Computation I. (ECE 502). Cr. 4**

Prereq: CSC 102 or 206 or equiv. and MAT 225 for computer science students; CHE 304 for engineering students. Student computer account required. 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)

**671 Database Management Systems I. Cr. 3**

Prereq: CSC 371. Three-schema architecture; network model; hierarchical model; relational algebra and calculus; normal forms; relational design utilizing dependencies; semantic data modeling; database specifications; database design process; file structures. (Y)

**680 Artificial Intelligence I. Cr. 3**

Prereq: CSC 520. Student computer account required. Introduction to languages LISP and PROLOG and techniques of artificial intelligence; development of programs in LISP and PROLOG to illustrate problem-solving mechanisms; problem definition using state-space techniques; problem solving heuristics; inference in monotonic and non-monotonic logic; knowledge representation technique; discussion of applications in various areas. (Y)

**688 Theory of Adaptable Systems. Cr. 3**

Prereq: CSC 588. 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)

**689 Topics in Computer Science. Cr. 1-4(Max. 8)**

Prereq: senior or graduate standing. Student computer account required. Current topics to be announced in *Schedule of Classes*. (I)

**711 Software Environments. Cr. 3 or 4**

Prereq: CSC 511. Offered for 4 credits to Interdisciplinary M.A. students. Architecture of software environments. Syntax directed editors. Tools for programming-in-the-large. Tools to support the assessment of partial designs. Expert systems for software development. (Y)

**713 Information Systems Analysis and Design. Cr. 3**

Prereq: CSC 513. Student computer account required. Abstraction-synthesis approach to methodology; key problems and current approaches to their solution; discussion of current topics; information requirements determination; prototyping approach to systems design; decision support systems; automated tools for information systems design. (I)

**726 Distributed Systems II. Cr. 3**

Prereq: CSC 526. Distributed operating systems; distributed data bases; networking; office information systems; distributed vision applications. (B)

**746 Structure of Compilers II. Cr. 3**

Prereq: CSC 441, 645. Storage allocation, type checking. Intermediate code optimization (basic blocks, flow graph, data flow analysis, loop optimizations and other optimizations). Code generation and optimizations. (I)

**762 Matrix Computation II. Cr. 3**

Prereq: CSC 662. Student computer account required. 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)

**771 Database Management Systems II. Cr. 3**

Prereq: CSC 671. Student computer account required. Relational operators; dependency theory; normal forms; project-join mappings; representation theory; query optimization; null values; distributed databases; concurrency control. (Y)

**780 Artificial Intelligence II. Cr. 3**

Prereq: CSC 680. Student computer account required. Advanced topics in development and implementation of intelligent systems; knowledge acquisition and representation for expert systems; design of adaptable expert systems that learn; relevant papers from the current literature discussed. (Y)

**785 Artificial Neural Networks. Cr. 3**

Prereq: graduate standing, CSC 586 or 680. 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)

**786 Computer Vision. Cr. 3**

Prereq: CSC 586. Techniques for detection and recognition of objects in images; use of stereo, texture or motion information for scene segmentation with descriptions, matching, and labeling; use of knowledge and planning. (Y)

**788 Seminar in Natural Computing. Cr. 3**

Prereq: CSC 588. Current research problems in information processing and modeling of complex biological systems. (B)

**790 Directed Study. Cr. 1-5(Max. 16)**

Prereq: written consent of adviser prior to registration. Student computer account required. (T)

**799 Master's Essay Direction. Cr. 1-3**

Prereq: written consent of adviser prior to registration. Student computer account required. (T)

**811 Seminar in Software Engineering and Environments. Cr. 3**

Prereq: CSC 711. Discussion of current papers in the field. (B)

**826 Seminar in Distributed Systems. Cr. 3**

Prereq: CSC 726. Presentation and discussion of recent research papers in modeling and analyzing distributed systems; discussion of practical developments in distributed systems; presentation of thesis work. (B)

**871 Seminar in Database Management Systems. Cr. 3**

Prereq: CSC 771. Discussion of current papers in the field. (B)

**880 Seminar in Artificial Intelligence. Cr. 3**

Prereq: CSC 780. Student computer account required. Current research topics in the area. (B)

**886 Seminar Topics in Computer Vision and Pattern Recognition. Cr. 3**

Prereq: CSC 786. Discussion of current papers in the field; student reports. (B)

**888 Seminar in Adaptability Theory. Cr. 3**

Prereq: CSC 788. Discussion of current papers from the field. (B)

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

Student computer account required. (T)

**999 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. Student computer account required. (T)

# CRIMINAL JUSTICE

Office: 2228 Faculty/Administration Building; 577-2705

Director: Steven J. Stack

## Participating Faculty

Marietta Baba, *Professor, Anthropology*

William J. Brazill, *Professor, History*

Clifford C. Clarke, *Associate Professor, Sociology*

Thomas J. Duggan, *Associate Professor, Sociology*

Charles D. Elder, *Professor, Political Science*

Susan P. Fino, *Associate Professor, Political Science*

Mary Herring, *Assistant Professor, Political Science*

Thomas M. Kelley, *Assistant Professor, Criminal Justice*

R. John Kinkel, *Lecturer, Sociology*

Augustin Kposowa, *Assistant Professor, Sociology*

Ann Rawls, *Associate Professor, Sociology*

Pamela A. Reising, *Lecturer, Criminal Justice*

Marjorie Sarbaugh-Thompson, *Assistant Professor, Political Science*

Mary C. Sengstock, *Professor, Sociology*

Stanley Shapiro, *Assistant Professor, History*

Steven J. Stack, *Professor, Criminal Justice*

John M. Strate, *Associate Professor, Political Science*

Jorge Tapia-Videla, *Professor, Political Science*

Mark Weiss, *Professor, Anthropology*

Leon Wilson, *Assistant Professor, Sociology*

Marvin Zalman, *Associate Professor, Criminal Justice*

## Graduate Degree

### MASTER OF SCIENCE in Criminal Justice

This 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 society. 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 14. 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 for Graduate 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 Program. Applicants for this degree should consult the departmental graduate adviser.

Admission requirements include at least a 3.0 honor point average in upper-division courses, and the achievement of a satisfactory score

on the aptitude sections of the Graduate Record Examination in accordance with Departmental graduate admissions policy.

At the discretion of the Criminal Justice faculty and consistent with the requirements established by the Graduate Committee of the department, consideration will be given to special circumstances presented by students seeking admission. The degree is administered by a Master's Degree Committee which provides counsel in matters of admission, curriculum, and comprehensive examinations.

**Candidacy** must be established by the time twelve 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, a master's essay and a comprehensive examination, or a master's comprehensive examination. 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 192-194 and 20-30, respectively. Students should also obtain a copy of the Criminal Justice Program's Guidelines for graduate policies and procedures. The degree is offered as either a Plan A, Plan B, or Plan C 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, and a comprehensive examination in the areas of research/quantitative methods and administrative/organizational theory.

**Plan C:** thirty-two credits of course work and a comprehensive examination in the areas of research and quantitative methods, administrative and organizational theory, and two selected elective areas.

CORE COURSES:	credits
CRJ 701 — Contemporary Criminal Justice .....	3
P S 732 — Organization Theory and Behavior .....	3
<b>One course in administrative law:</b>	
CRJ 675 or P S 612	
— Administrative Law in Criminal Justice .....	3
— Administrative Law and Regulatory Politics .....	3
<b>One course in social science research methodology:</b>	
ANT 521 or P S 766 or SOC 720	
— Methods in Anthropology .....	3
— Research Methods in Policy and Politics .....	3
— Advanced Survey of Approaches and Techniques of Social Research .....	3
<b>One course in applied statistics in the social sciences:<sup>1</sup></b>	
P S 563 — Statistics and Data Analysis in Political Science I .....	4
or	
SOC 628 and SOC 502	
— Social Statistics .....	4
— Computing for the Social Sciences .....	4

One of the following area seminars:

CRJ 623 — Advanced Law Enforcement Administration .....	3
P S 635 — 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's *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 700 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 500 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 32 of this bulletin.*

The Criminal Justice Program 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 Applicant 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)

*The following courses, numbered 500-999, are offered for graduate credit. Courses numbered 500-699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090-499). Courses in the following list numbered 500-699 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 463.*

- 506 Comparative Criminal Justice Systems. Cr. 3**  
No credit after former CRJ 650. Selected criminal justice systems in other nations. (B)
- 570 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. (Y)
- 571 Constitutional Aspects of Criminal Law. Cr. 4**  
Prereq: minimum of 12 credits in criminal justice. 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)
- 572 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)
- 581 (SOC 581) 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

<sup>1</sup> If a student has previously completed a basic course in applied statistics, the graduate adviser may require the student to take an advanced course, e.g., P S 664.

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)

**594 (PCS 500) Dispute Resolution. (P S 589)(PSY 571). Cr. 3**

Overview of the processes and sectors in the field of dispute resolution including negotiation, mediation, arbitration, and conciliation. (Y)

**595 Special Topics in Criminal Justice. Cr. 3 (Max. 9)**

Prereq: CRJ 201. No credit for repeated section. (Y)

**600 Internship. (U S 600). 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)

**602 Practicum: Justice System Counseling. Cr. 3**

Prereq: CRJ 241. No credit after former CRJ 693. Supervised practice in interviewing techniques and counseling methods frequently utilized in the treatment of adolescents or adults on probation, parole or in correctional institutions. (B)

**623 Advanced Law Enforcement Administration. Cr. 3**

Prereq: CRJ 101. Police-management problems; organization and objectives, planning and coordination, public relations and support. (B)

**643 Counseling Strategies with Youthful Offenders. Cr. 3**

Prereq: CRJ 241. No credit after former CRJ 691. 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)

**660 Social and Legal Dynamics of Child Abuse. Cr. 3**

Prereq: CRJ 241. 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. (B)

**675 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. (I)

**686 (SOC 686) Organized Crime: Its History and Social Structure. Cr. 3**

Prereq: CRJ 385 or SOC 382. 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)

**701 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)

**720 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. (B)

**790 Directed Study. Cr. 1-3**

Prereq: 24 graduate credits in major. (T)

**799 Master's Essay Direction. Cr. 1-3**

(T)

**899 Master's Thesis Research and Direction. Cr. 1-8**

Prereq: consent of adviser. (T)

# EAST EUROPEAN STUDIES

Office: 443 Manoogian Hall; 577-3024

Program Coordinator: Frank J. Corliss, Jr.

## Master of Arts

This major is comprised of courses offered by the several departments which provide instruction in East European studies: geography, history, political science, and German and Slavic languages, among others. In most cases, the field selected will be that of the undergraduate major. The particular combination of courses will be decided in consultation with the graduate adviser and will depend upon the student's interest and previous preparation.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 14.

Candidacy must be established by the time twelve credits have been earned.

DEGREE REQUIREMENTS: The Master's degree is offered by this department only as a Plan A option:

**Plan A:** Thirty-two credits in course work including a total of eight credits for the thesis.

Course elections may include four credits in advanced language training for research purposes. The elections must include a graduate seminar, and courses selected from the Department of German and Slavic Languages, Economics, Geography, History, Political Science and Anthropology. See Program Coordinator for list of specific courses. Substitutions may be made only with the approval of the graduate adviser.

An interdepartmental committee will advise the chairperson of the department of German and Slavic Languages in assisting the student to work out his or her program of study.

Before beginning research for the thesis, the student must have a reading knowledge of at least one East European language appropriate for the area and purpose of his/her research, or be willing to make up this deficiency without graduate credit. The thesis may be under the direction of a major adviser in any of the departments which provide instruction in East European studies or it may be under the direction of the chairperson of the Department of German and Slavic Languages. A final oral examination is required.

## Summer Study in Poland

Graduate students are eligible to compete for scholarships for summer study at the Jagiellonian University, Krakow, Poland. Foreign transfer credit is subject to approval by the graduate adviser. Knowledge of Polish is preferred but not required.

# ECONOMICS

Office: 2074 Faculty/Administration Bldg.; 577-3345  
Chairperson: Allen C. Goodman  
Administrative Assistant: Delores G. Tennille

## Professors

Benaih Yongo-Bure (King-Chavez-Parks Visiting Professor), David I. Fand (Emeritus), Thomas J. Finn, Jr., Allen C. Goodman, I. Bernard Goodman (Emeritus), Mark L. Kahn (Emeritus), Li Way Lee, Jay H. Levin, John M. Mattila (Emeritus), John D. Owen, Karl Roskamp (Emeritus), Robert J. Rossana, Lawrence H. Seltzer (Emeritus)

## Associate Professors

R. King Adamson (Emeritus), Ralph M. Braid, Gail A. Jensen, Larry C. Ledebur, An-loh Lin, Stephen J. Spurr

## Assistant Professors

Kevin D. Cotter, John T. Durkin, Philip J. Grossman, Robert W. Wassmer

## Lecturers

Margarita Garza, David Karemera, Kathleen Possai

## 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 393; and Master of Arts in Industrial Relations, under Industrial Relations, page 396*)

Economists should have broad intellectual interests as well as technical expertise. Though most economics graduate students have undergraduate degrees in economics, the Department encourages those with degrees in other social sciences as well as engineering and mathematics. 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 396.

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

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 14. 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 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 undergraduate or post-bachelor students:

ECO 500	.....	Intermediate Microeconomics
ECO 505	.....	Intermediate Macroeconomics
ECO 410	.....	Economic and Business Statistics I
ECO 510	.....	Economic and Business Statistics II
MAT 151 or 201 or other introductory courses in differential and integral calculus.		

Students may earn graduate credit for only one of these 500-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 the alternative Plans A, B, or C, as described below. With the approval of the M.A. program adviser, the student must choose one of these options 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 192-194 and 20-30, respectively.

*Plan A: Thirty-two graduate credits are required, including a total of eight credits earned by writing a thesis.*

Economics 600, 605, and 610 or the equivalent must be elected. At least eight credits, exclusive of Economics 796 and 899, must be completed at the 700- or 800-level. A final oral examination is required.

*Plan B: Thirty-two graduate credits are required, including a total of three credits earned by writing an essay.*

Economics 600, 605, and 610 or the equivalent must be elected. At least eight credits, exclusive of Economics 796 and 799, must be completed at the 700- or 800-level. A final oral examination is required.

*Plan C: Thirty-two graduate credits are required.*

Economics 600, 605, and 610 or the equivalent must be elected. At least eight credits, exclusive of Economics 796, must be completed at the 700- or 800-level. Neither a thesis nor an essay are 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

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 14. 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 500 .....	Intermediate Microeconomics
ECO 505 .....	Intermediate Macroeconomics
ECO 510 .....	Economic and Business Statistics II
MAT 201 .....	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 192-194 and 20-30, 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 and in two of the following nine fields: quantitative methods; industrial organization; international economics; labor and human resources economics; public finance; health economics; economic development; money and banking; and urban and regional economics. Proficiency must be demonstrated by successful completion of the written and oral qualifying examinations for Ph.D. candidacy in economic theory and the two other selected fields. Course preparation normally includes Economics 700, 701, 702 705, 706 (all of which are to be taken within the first two years), and the two-semester advanced sequences in the student's major fields.
3. Demonstration of basic competence in quantitative methods (*Economics* 710 and 711).
4. 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 Director of Graduate Studies.

**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 32 of this bulletin.*

Teaching and research assistantships providing tuition, stipends and health insurance are available each year to highly qualified graduate students. 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 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 32), 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* includes a prize of \$1000; the *Mendelson Research Grants* provide summer stipends to selected doctoral students working on their dissertations.

## GRADUATE COURSES (ECO)

*The following courses, numbered 500-999, are offered for graduate credit. Courses numbered 500-699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090-499). Courses in the following list numbered 500-699 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 463.*

### Field A — Economic Theory

**500 Intermediate Microeconomics. Cr. 4**  
Prereq: ECO 102, MAT 150 or MAT 180 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)

**502 Fundamentals of Economic Analysis. (ECO 702). Cr. 4**  
Prereq: ECO 500 and MAT 201 or MAT 501 or equiv. ECO 502 offered for undergraduate credit only; ECO 702 offered for graduate credit only. Basic mathematical methods applied to economic analysis, including elementary applications of calculus, analytical geometry, and linear algebra. Problems to illustrate applications in microeconomics and macroeconomics. (F)

**505 Intermediate Macroeconomics. Cr. 3**  
Prereq: ECO 101, MAT 150 or MAT 180 or equiv. based on satisfactory score on mathematics placement examination. Theory of national income determination. National output and income, saving and capital formation. (T)

**600 Price and Allocation Theory. Cr. 4**  
Prereq: ECO 500 or equiv. No credit after ECO 700. 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)

**605 Macroeconomics. Cr. 4**  
Prereq: ECO 505 or equiv. No credit after ECO 705. 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)

**645 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)

**700 Microeconomic Theory I. Cr. 4**  
Prereq: ECO 500 and MAT 201 or MAT 501 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)

**701 Microeconomic Theory II. Cr. 4**  
Prereq: ECO 700. Continuation of ECO 700. (F)

**702 (ECO 502) Fundamentals of Economic Analysis. Cr. 4**  
Prereq: ECO 500 and MAT 201 or MAT 501 or equiv. ECO 502 offered for undergraduate credit only; ECO 702 offered for graduate credit only. Basic mathematical methods applied to economic analysis, including elementary applications of calculus, analytical geometry, and linear algebra. Problems to illustrate applications in microeconomics and macroeconomics. (F)

**704 History of Economic Thought. Cr. 4**  
Advanced inquiry into the development of economic doctrine. (B)

**705 Macroeconomic Theory I. Cr. 4**  
Prereq: ECO 505 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)

**706 Macroeconomic Theory II. Cr. 4**  
Prereq: ECO 705 or equiv. Continuation of ECO 705. (W)

**805 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

**510 Economic and Business Statistics II. Cr. 3**  
Prereq: ECO 410 or MAT 570 or equiv. Modern statistical inference theory applied to problems of index numbers and forecasting, time series, seasonal and cyclical variation; regression and correlation analysis with introduction to multiple regression analysis. (T)

**610 Introduction to Econometrics. Cr. 4**  
Prereq: ECO 505 and 510 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)

**611 Applied Economic Analysis and Forecasting. Cr. 4**  
Prereq: ECO 610 or consent of instructor. Applications of econometrics in structural analysis. Use of econometric, extrapolative, and univariate time series models in forecasting. Examples may include forecasting interest rates, price levels, GNP, participation rates, and levels of demand. (W)

**710 Econometrics I. Cr. 4**  
Prereq: MAT 702 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)

**711 Econometrics II. Cr. 4**  
Prereq: ECO 710 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)

**810 Advanced Econometrics. Cr. 4**  
Prereq: ECO 711. Selected topics such as nonlinear estimation, Bayesian methods, time series forecasting, estimation of simultaneous equations, and simulation models. (B)

**811 Applied Econometrics. Cr. 4**  
Prereq: ECO 711 or 810 or consent of instructor. Applications of econometric methods to the analysis of economic hypothesis, with examples drawn from current research in various fields of economics. Students required to participate in model specification, estimation, prediction, and evaluation. (B)

**815 Dissertation Workshop In Statistics and Econometrics. Cr. 4(Max. 8)**  
Prereq: completion of qualifying examination in econometrics. Offered for S and U grades only. Evaluations of proposed and current research in statistics and econometrics. (T)

## Field C — Industrial Organization

**520 Regulation and Regulated Industries. Cr. 4**  
Prereq: ECO 102. 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)

**521 Market Power and Economic Welfare. Cr. 4**  
Prereq: ECO 102. 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)

**525 Economic Analysis of Law. Cr. 4**  
Prereq: ECO 100, 101, or 102. Applied price theory; economic analysis of substantive and procedural issues of law. (Y)

**720 Industrial Organization I. Cr. 4**  
Theories of competition and market power. Topics include concentration, scale economies, product differentiation, entry barriers, collusion, mergers, price discrimination, information, and advertising. (B)

**721 Industrial Organization II. Cr. 4**  
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)

**825 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

**530 International Economics. Cr. 4**  
Prereq: ECO 102. 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)

**531 International Finance. Cr. 4**  
Prereq: ECO 101. Current theoretical and empirical knowledge and major policy issues in the field of international finance. Topics include the foreign exchange market; balance of payments adjustment; stabilization policies in open economies; forward exchange; the Eurodollar market; international financial capital movements; international reserves; alternative exchange rate systems. (W)

**730 Advanced International Trade Theory. Cr. 4**

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)

**731 Advanced International Monetary Theory. Cr. 4**

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)

**835 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

**547 Economics of Aging. Cr. 4**

Prereq: ECO 102 or consent of instructor. Economic implications of aging and retirement; public policy issues related to aging, including such matters as health care, social security, income maintenance and other welfare problems. (S)

**549 American Labor History. (HIS 529)(HIS 729). Cr. 4**

Prereq: ECO 101 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)

**641 Labor Markets. Cr. 4**

Prereq: ECO 102. 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)

**642 Labor Relations Institutions and Public Policy. Cr. 3**

Prereq: ECO 101 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)

**740 Labor Economics and Human Resources. Cr. 4**

Prereq: ECO 500 and 505 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)

**741 Human Resources, Labor Markets, and Public Policy. Cr. 4**

Prereq: ECO 600 and 610 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)

**747 Economic Factors in Industrial Relations. Cr. 3**

Prereq: ECO 102 and 510 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)

**749 (I R 750) Seminar in Industrial Relations. Cr. 3**

Prereq. or coreq: I R 740, I R 745, I R 790, I R 799. Open only to M.A.I.R. students. Study of selected industrial relations topics. Research paper required of each student. Industrial relations specialists utilized as guest speakers. (W)

**845 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

**550 Public Finance: Taxation and Expenditure Theory. Cr. 4**

Prereq: ECO 102 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)

**551 Public Choice. Cr. 3**

Prereq: ECO 102 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)

**552 State and Local Public Finance. (U P 675). Cr. 3**

Prereq: ECO 102 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)

**555 Economics of Health Care. Cr. 4**

Prereq: ECO 100, 101, or 102. 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)

**750 Public Finance I. Cr. 4**

Prereq: ECO 551 or consent of instructor. Problems of budgeting, public choice, government expenditure, incidence shifting, tax effects, national debt, stabilization and economic growth. (B)

**751 Public Finance II. Cr. 4**

Prereq: ECO 551 or consent of instructor. Continuation of ECO 750; research problems in public finance. (B)

**755 Economics of Health Care I. (C M 740). Cr. 4**

Prereq: ECO 600 or consent of instructor. No credit after ECO 555. 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)

**756 Economics of Health Care II. Cr. 4**

Prereq: ECO 600 or consent of instructor. No credit after ECO 555. Particular roles of hospitals, physicians, and health insurance. Analysis of government policies. (B)

**855 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 History and Development

**560 Introduction to Development Economics. Cr. 4**

Prereq: ECO 101 and 102 or consent of instructor. National poverty and economic growth viewed from an historical and theoretical perspective; particular emphasis on national and international policies. (Y)

**561 Comparative Economic Systems. Cr. 3**

Prereq: ECO 101 and 102 or consent of instructor. Comparative analysis of capitalism, socialism, communism, emphasis on

differences in pricing, allocation of resources, functional and personal distribution of income, economic planning. (I)

**665 (U S 621) Regional, State, and Urban Economic Development: Policy and Administration. (P S 644) (U P 655). Cr. 3**

Prereq: graduate standing. Examination of regional, state, and local economic development theory, analysis, policy and administration. (B)

**760 Economic Development I. Cr. 4**

Survey of alternative approaches to development economics, emphasizing historical and theoretical approaches. (B)

**761 Economic Development II. Cr. 4**

Continuation of ECO 760, with emphasis on development planning methodology, planning procedures, and policy and strategy decisions confronting developing countries. (B)

**865 Dissertation Workshop in Development. Cr. 4(Max. 8)**

Prereq: completion of qualifying examination in economic history and development. Offered for S and U grades only. Evaluations of proposed and current research in economic history and development. (T)

### Field H — Money and Banking

**570 Money and Banking I. Cr. 3**

Prereq: ECO 101. 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)

**770 Monetary Economics I. Cr. 4**

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)

**771 Monetary Economics II. Cr. 4**

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)

**875 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

**580 Urban and Regional Economics I. (U P 582). Cr. 3**

Prereq: ECO 101, 102 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)

**780 Urban and Regional Development. Cr. 4**

The city as an economic system in a functional and spatial system of cities. Emphasis on the city as a reflection of its industrial and occupational structure; as a stock of capital, aging and renewing in space and over time; and as an implicit price system. Interrelationships between local and national policy, management and finance. (B)

**781 Location Theory and Regional Economics. Cr. 4**

Location theory with emphasis on the locational decisions of the firm, factor substitution in space and the size distribution of cities. Regional economics emphasizing growth and development models, interaction (gravity) models, and regional income and employment (multiplier) econometric models. Input-output and linear programming models with spatial applications. (B)

**885 Dissertation Workshop in Urban and Regional Economics. Cr. 4 (Max. 8)**

Prereq: completion of qualifying examination in urban and regional economics. Offered for S and U grades only. Evaluations of current and proposed research in urban and regional economics. (T)

### Directed Readings, Thesis Direction and Special Courses

**796 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)

**799 Master's Essay Direction. Cr. 1-3(3 req.)**

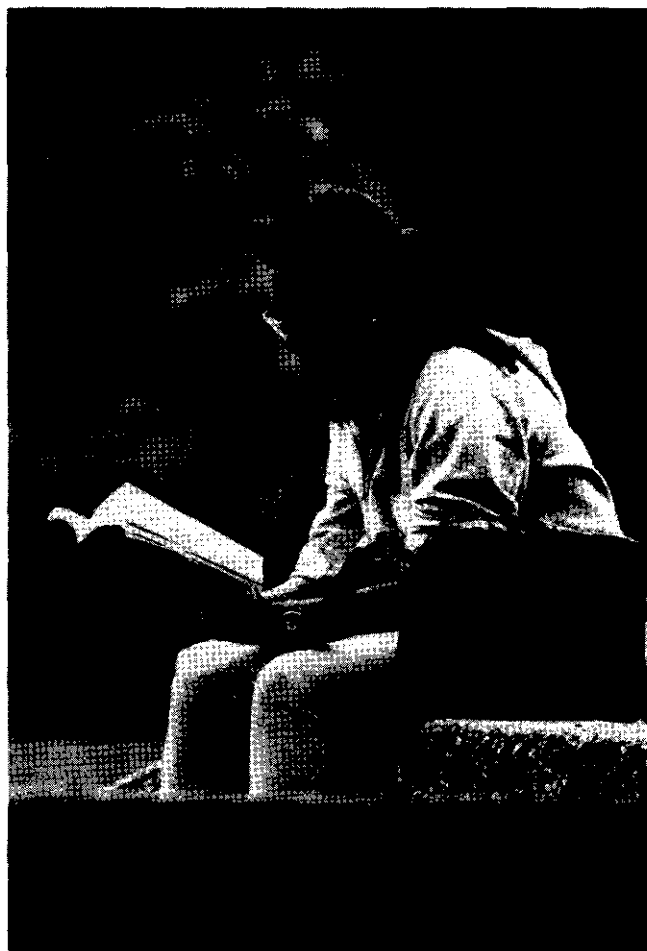
Prereq: consent of adviser. (T)

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

Prereq: consent of adviser. (T)

**999 Doctoral Dissertation and Research. Cr. 1-16(30 req.)**

Prereq: consent of doctoral adviser. Offered for S and U grades only. (T)





# ENGLISH

Office: 51 West Warren; 577-2450  
Chairperson: Lesley Brill  
Associate Chairperson: Yates Hafner

## Professors

Samuel Astrachan, Alvin B. Aubert, Lesley Brill, Esther M. Broner (Emerita), Chester H. Cable (Emeritus), Walter F. Edwards, Samuel A. Golden (Emeritus), Arnold L. Goldsmith, C. Yates Hafner, Henry L. Golemba, Patricia E. Hernlund, Daniel J. Hughes, Christopher T. Leland, Orville F. Linck (Emeritus), Arthur F. Marotti, Ralph L. Nash (Emeritus), Joseph Prescott (Emeritus), John R. Reed, Herbert M. Schueller (Emeritus), Alfred Schwarz (Emeritus), Robert M. Strozier II, Stephen H. Tudor, Marilyn L. Williamson, Beongcheon Yu (Emeritus)

## Associate Professors

Robert Burgoyne, Barbara A. Couture, Bradford S. Field, Jeanne A. Flood, Alva A. Gay (Emeritus), Isabel Graham (Emerita), David S. Herreshoff (Emeritus), Jerry Herron, Terrance J. King, Donna Landry, Janet C. Langlois, Bernard Levine, Kathryn Lindberg, Gerald MacLean, Jay W. McCormick (Emeritus), William E. Mockler (Emeritus), Ross J. Pudaloff, Amy K. Richards (Emerita), Michael H. Scrivener, Edward Sharples, Elizabeth S. Sklar, Paul Sporn, Travis E. Tritschuh (Emeritus), Anca Vlasopolos, Renata M. Wasserman

## Assistant Professors

Ellen Barton, Cynthia Erb, P. Gabrielle Foreman, Gesa Kirsch, Richard C. Marback, Martha Ratliff, Ruth E. Ray

## Graduate Degrees

*MASTER OF ARTS with a major in English*

*MASTER OF ARTS in Comparative Literature*

*DOCTOR OF PHILOSOPHY with a major in English and specializations in American literature, English literature, literary criticism, and composition research*

The graduate programs of the English Department offer advanced study in English, American, and comparative literature, and in contemporary approaches to literary study, as well as in creative writing, composition theory, linguistics, film, women's studies, African-American literature, and folklore. 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.

## Master of Arts With a Major in English

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 14. Students who wish to register as graduate majors in English should consult the departmental M.A. adviser, but submit their formal application to the Graduate Admissions Office in the Administrative Services Building. 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.

**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 192-194 and 20-30, 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 a reasonable knowledge of literature and of critical approaches to literary study, in addition to special interests such as writing, linguistics, film, etc. Outside this general requirement, each individual program can accommodate particular interests and needs. It must include, however, at least five 700-level seminars, and the essay or thesis. The remaining courses may be at the 500, 600, or 700 level. With the consent of the departmental Graduate Director, the student may submit a work of imaginative writing as an essay or thesis.

**Comparative Literature:** For course requirements, see p. 212

**Foreign Language Requirement:** Students will ordinarily meet the foreign language requirement by choosing one of two options: (a) they may pass the Educational Testing Services (ETS) examination with a score of 550 or higher; (b) they may take an intensive three-credit language course, or an advanced non-translated literature course (500-level or higher) in one of the foreign language departments, or the first course of the Old English sequence taught in the English Department. If they choose the second alternative, they must achieve at least a grade of 'B' in the course.

For students with a primary interest in linguistics or those who for some pressing reason cannot fulfill the normal foreign language requirement, there is a third option. Such students may take two courses in linguistics beyond the basic thirty-three credits required for the degree. These courses must be at the 500 level, and students must achieve a grade of 'B' or better. No one planning to continue to the Ph.D. should choose this alternative.

**Time Limitation** for the completion of the degree is six calendar years from the date the first course marks in the program are recorded. On petition of the student and approval of the Graduate Committee, over-age credits may be revalidated.

**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. The course work must include at least five English courses at the 700 level; students must satisfy the foreign language requirement for the M.A. in English.

*Creative Writing Courses:* ENG 558, 587, 588, 589, 680, 790

*Professional Writing Courses:* ENG 501, 578, 579, 583, 702, 703, 704, 790

## Doctor of Philosophy With a Major in English

The Ph.D. program in English offers advanced study in literary periods and genres, literary theory, cultural studies, film, linguistics, women's studies, African-American literature, and folklore. An optional concentration in composition theory is also available.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 14. 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. Three 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 192-194 and 20-30 respectively.

**Foreign Language Requirement:** Ph.D. students will ordinarily meet the foreign language requirement by choosing one of three options: (1) taking two advanced non-translated literature courses or one intensive language course (e.g., GRK 500 for three credits or more) and one non-translated literature course (500 level or above, three credits or more) in the same language; (2) passing the ETS test with a score of 550 or higher and taking one advanced non-translated literature course (500-level or higher, for three credits or more) in the same language; (3) passing the English Department's two-course sequence in Old English.

**Course Requirements:** The Department does not require specific courses; however, the student's graduate-level course work must reflect broad knowledge of literary texts and current methods of literary study, regardless of examination subjects and area of specialization. The majority of the courses must be numbered 600 and above, including at least two courses at the 800-level; exceptions may be approved by the departmental Graduate Director with the permission of the Graduate School.

**Cognate:** A minor of eight credits in course work on the graduate level in a related area, usually outside the department, is required.

**Final Qualifying Examination:** The examination, which must be taken within one calendar year after the completion of course work, is constituted as follows:

1. Students enrolled before September 1989 may take a written examination in four fields or a written examination in two fields plus a dissertation area examination. Students initially enrolled on or after September 1989 must take a written examination in two fields plus a dissertation area examination.
2. In the written examination in four fields, three are chosen from eight designated literary fields, the fourth in an area of the student's choice. Students selecting the composition option will take two examinations from the designated literary fields, and two from a list of specialized examination areas.
3. For students who are examined in two fields plus a dissertation area, one examination must be in a designated literary field or other literary area.
4. An oral examination must be taken after the student has passed the written examination.

A final Public Lecture Presentation-Defense, after the dissertation has been completed, is also required. For a description of this, see page 29.

**Time Limitation:** The time limit for the completion of the degree is seven calendar years from the date the first course marks in the program are recorded. On petition of the student and approval of the Graduate Committee, over-age credits may be revalidated.

## Financial Aid

*General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 32 of this bulletin.*

*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.*

**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 Chairperson of the Department.

## GRADUATE COURSES (ENG)

*The following courses, numbered 500-999, are offered for graduate credit. Courses numbered 500-699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090-499). Courses in the following list numbered 500-699 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 463.*

### 501 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)

### 503 Topics In Women's Studies. Cr. 3(Max. 9)

Thematic, critical or generic study of women and literature. Topics to be announced in *Schedule of Classes*. (Y)

### 504 Film Criticism and Theory. Cr. 3

Prereq: ENG 245 or another film course or consent of instructor. Material fee as indicated in *Schedule of Classes*. Survey of the major film theories from Munsterberg to contemporary film semiotics; examination of various attempts made at a systematic understanding of the cinema. (B)

### 505 Literature into Film. Cr. 3

Material fee as indicated in *Schedule of Classes*. Ways of adapting literary works to film form. Focus on the artistic and practical problems of transforming literature to film. (B)

### 506 Styles and Genres in Film. Cr. 3(Max. 9)

Material fee as indicated in *Schedule of Classes*. 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*. (Y)

### 507 Topics in Film. Cr. 3(Max. 9)

Material fee as indicated in *Schedule of Classes*. Topics (such as film and fusion of the arts) to be announced in *Schedule of Classes*. (Y)

### 508 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*. (Y)

- 509 Topics in Literary and Cultural Theory. Cr. 3(Max. 9)**  
Required of English majors (or substitute: ENG 504, ENG 560, ENG 570, or ENG 579). Study of literary and cultural theory in various contexts — urban, metropolitan, ethnic, global — with reference to primary texts. (Y)
- 510 Literature of the Middle Ages. Cr. 3**  
Major works and genres of Old and Middle English; mostly in translation. (I)
- 511 Chaucer. Cr. 3**  
Readings from *The Canterbury Tales* and from Chaucer's other works. Aspects of medieval life and thought which illuminate Chaucer's work. (I)
- 512 Topics in Medieval Literature. Cr. 3(Max. 9)**  
Selected themes, genres, techniques in medieval English literature, such as heroic literature, narrative technique, cycle drama, lyric poetry. Topics to be announced in *Schedule of Classes*. (I)
- 514 Introduction to Old English. Cr. 3**  
The fundamentals of language and grammar and the literary analysis of Old English texts. (Y)
- 515 Shakespeare. Cr. 3**  
For English majors and others interested in more intensive study than is offered in ENG 220. Some attention to Shakespearean scholarship. (Y)
- 516 Studies in Old English. Cr. 3-4(Max. 12)**  
Selected topics such as *Beowulf*, poetry of the *Exeter Book*, gnomic literature, saints' lives. Topics to be announced in *Schedule of Classes*. (Y)
- 517 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)
- 518 Milton. Cr. 3**  
Emphasis on Milton's major poems, with some attention to his prose and to backgrounds. (I)
- 519 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)
- 520 Restoration and Eighteenth Century Literature. Cr. 3**  
A survey of English literature from 1660 to 1784. Readings from the major works of Dryden, Pope, Swift, Thomson, and Johnson. Emphasis on intellectual milieu of the period. (B)
- 524 Topics in Restoration and Eighteenth Century Literature. Cr. 3(Max. 9)**  
For students familiar with literary history of the period. Special topics for in-depth study of a genre, a movement or an author to be announced in *Schedule of Classes*. (B)
- 525 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. (Y)
- 526 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)
- 527 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)
- 529 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)
- 530 Twentieth Century British Literature. Cr. 3**  
Selected works in all genres from 1900 to the present. (B)
- 532 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)
- 540 American Literature to 1800. Cr. 3**  
A survey of American literature from the beginning through the Federalist period; transition from English/European heritages to ideas uniquely American. (B)
- 541 American Literature: 1800-1865. Cr. 3**  
A survey of the major writers, themes and movements: Irving, Cooper, Emerson, Thoreau, Hawthorne, Melville, Whitman; Federalism and Jacksonian literature; transcendentalism, romanticism. (Y)
- 542 American Literature: 1865-1914. Cr. 3**  
A survey of the major writers, themes, movements: Dickinson, Twain, Crane, Howells, James; the local colorists, social critics, early pragmatists. (Y)
- 545 Modern American Literature. Cr. 3**  
A survey of major writers, themes, movements since 1914: Stevens, Frost, Eliot, O'Neill, Anderson, Hemingway, Faulkner; the world wars, modernism and post-modernism. (Y)
- 546 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)
- 548 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)
- 549 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)
- 550 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)
- 552 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)
- 558 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)
- 559 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)

**560 (ANT 608) Studies in Folklore. 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)

**565 Folklore and Literature. Cr. 3**

Identification and analysis of the interrelations of folklore and literature. (B)

**567 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)

**570 Introduction to Linguistic Theory. (LIN 570). Cr. 3**

Basic concepts and methods of modern linguistics and their application to the study of the English language. (T)

**571 Phonology. (LIN 529). Cr. 3**

Prereq: ENG 570. 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. (B)

**572 Topics in Language. (LIN 572). Cr. 3(Max. 9)**

Topics such as phonology, morphology, semantics, pragmatics, language change, history of English, pidgins and creoles, psycholinguistic approaches, text grammar. Topics to be announced in *Schedule of Classes*. (Y)

**573 Traditional Grammar. (LIN 573). Cr. 3**

Comprehensive analysis of English sentence structure and parts of speech using the terminology and descriptive approach of traditional grammar. (T)

**574 Theory of Syntax. (LIN 530). Cr. 3**

Prereq: LIN 570. The theory of grammatical systems examined through analysis of sentence and word formation in a variety of human languages. Diversity and universals in grammar discussed and various theories of syntax reviewed. (B)

**576 American Dialects. (LIN 576). Cr. 3**

Survey of chief social and geographic dialects of American English and introduction to theory of language variation. (I)

**577 Sociolinguistics. (LIN 577). 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)

**578 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)

**579 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)

**582 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)

**583 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. (Y)

**587 Poetry Writing Workshop. Cr. 3(Max. 6)**

Prereq: ENG 381, 382, or 383; or written 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)

**588 Fiction Writing Workshop. Cr. 3(Max. 6)**

Prereq: ENG 381, 382, or 383; or written 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. (T)

**589 Writing for Theatre. (THR 513). Cr. 3 (Max. 6)**

Prereq: ENG 383 or written 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. (B)

**590 Directed Study. Cr. 1–3 (Max. 6)**

Prereq: Undergrad., 3.0 h.p.a.; proposal submitted in preceding term; cons. of instr. & chrm.; Grad., cons. of advs. & grad. officer. Advanced work for superior students whose program cannot be adequately met by scheduled classes. Course requires substantial written work. (T)

**591 Directed Study: Salford–W.S.U. Exchange. Cr. 3–9**

Prereq: consent of departmental adviser. Open only to students admitted to Salford–W.S.U. Exchange Program. (F,W)

**601 English Institute for Teachers of Language and Literature. Cr. 1–4(Max. 12)**

Prereq: bachelor's degree with a concentration in English. For prospective and in-service teachers. Topics to be announced in *Schedule of Classes*. (S)

**610 Introduction to Old English. Cr. 3**

The fundamentals of language and grammar and the literary analysis of Old English texts. (I)

**680 Advanced Creative Writing. Cr. 3(Max. 6)**

Prereq: grade of B or better in any 500-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)

**701 Introduction to Graduate Studies in Literature. Cr. 3**

Prereq: graduate standing. Contemporary approaches to literary theory, scholarship, and criticism. (F)

**702 Studies in the Theory of Composition. Cr. 4(Max. 16)**

Prereq: graduate standing. Seminar on such topics as: the writing process, computers in composing, theory of basic writing, theory of technical/professional writing. Topics to be announced in *Schedule of Classes*. (Y)

**703 Survey of Research in Writing. Cr. 4**

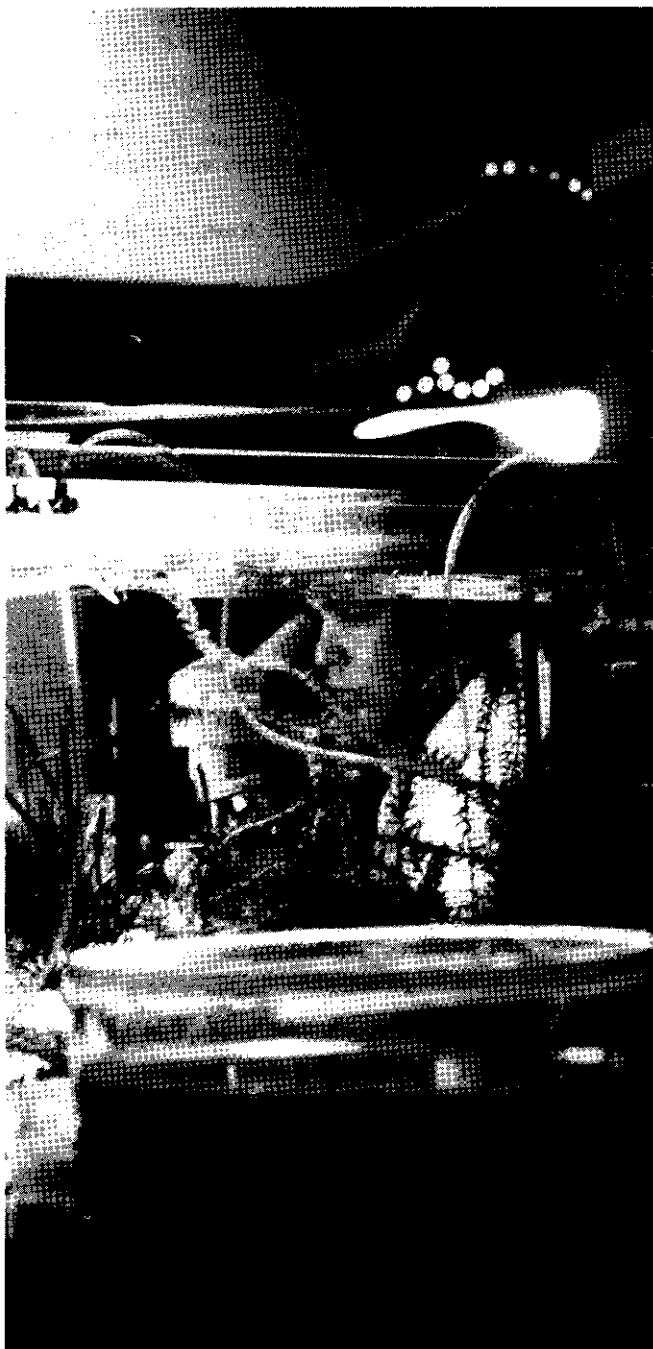
Prereq: graduate standing. Analyzing and evaluating research and research methods in reading, cognitive psychology, rhetoric, linguistics, composition, and other areas related to writing. (Y)

**704 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 composition. (Y)

- 705 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)
- 706 Computers and Literacy. Cr. 4**  
Prereq: graduate standing. Relationships between computers and composing; ways in which computers might change our ideas about thinking, learning, writing, managing information, and communicating. (B)
- 710 Studies in Old English. Cr. 3-4(Max. 12)**  
Prereq: graduate standing. Selected topics such as *Beowulf*, poetry of the *Exeter Book*, gnomic literature, saints' lives. Topics to be announced in *Schedule of Classes*. (I)
- 712 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)
- 715 Studies in Shakespeare. Cr. 4**  
Prereq: graduate standing. Special problems in current scholarship and criticism. (B)
- 716 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)
- 720 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)
- 725 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)
- 726 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)
- 730 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)
- 734 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). (B)
- 738 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)
- 740 Studies in American Literature Through the Nineteenth Century. Cr. 4(Max. 12)**  
Prereq: graduate standing. Advanced study of such topics as Puritanism, transcendentalism, Hawthorne and Melville, American realism. Topics to be announced in *Schedule of Classes*. (B)
- 741 Studies in American Literature of the Twentieth Century. Cr. 4(Max. 12)**  
Prereq: graduate standing. Advanced study of modern American poetry, prose and drama. Topics to be announced in *Schedule of Classes*. (B)
- 742 Studies in American Literature. Cr. 4(Max. 12)**  
Prereq: graduate standing. Advanced studies in American literature from generic, historical, or thematic perspectives. Topics such as realism and naturalism, regionalism, Oriental influences on American literature. Topics to be announced in the *Schedule of Classes*. (B)
- 745 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*. (I)
- 755 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)
- 759 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)
- 765 Studies in Folklore and Literature. Cr. 4(Max. 12)**  
Prereq: previous course in folklore or consent of instructor and graduate standing. Advanced study of the interrelations of folklore and literature. Topics to be announced in *Schedule of Classes*. (I)
- 767 Studies in Folklore and Folklife. Cr. 4(Max. 12)**  
Prereq: previous course in folklore or consent of instructor and 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)
- 771 Advanced Studies in Linguistic Structure. (LIN 771). 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)
- 772 Advanced Studies in Language Use. (LIN 772). Cr. 4(Max. 12)**  
Prereq: graduate standing. Current problems in language use, including issues in language change, language variation, pidgins and creoles, first language acquisition, perception and production, and linguistic stylistics. Topics to be announced in *Schedule of Classes*. (I)
- 777 Discourse Analysis. (LIN 777). 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*. (I)
- 780 Seminar in Creative Writing. Cr. 4 (Max. 8)**  
Prereq: ENG 680 or written consent of instructor after submission of manuscript. 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)
- 790 Directed Study. Cr. 1-8(Max. 8)**  
Prereq: written proposal submitted to graduate officer in preceding semester; consent of adviser and graduate officer. Advanced work for superior English majors whose program of study cannot be adequately met by scheduled classes. (T)
- 799 Master's Essay Direction. Cr. 1-3**  
Prereq: consent of adviser. (T)
- 805 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*. (B)

- 839 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*. (B)
- 842 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*. (B)
- 899 Master's Thesis Research and Direction. Cr. 1-8(8 req.)**  
Prereq: consent of adviser. (T)
- 999 Doctoral Dissertation Research and Direction. Cr. 1-16(30 req.)**  
Prereq: consent of doctoral adviser. Offered for S and U grades only. (T)



## GEOLOGY

*Office:* 201 Old Main; 577-2506  
*Chairperson:* Robert B. Furlong

### *Professors*

Robert B. Furlong, Hugo Mandelbaum (Emeritus), Willard H. Parson (Emeritus), Luciano B. Ronca

### *Assistant Professor*

Jeffrey L. Howard

### *Adjunct Associate Professor*

Robert E. Mosher

## 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's degree is generally the level of education most desired by industrial organizations employing individuals with graduate training in this field. Students receiving degrees as Master of Science in Geology are prepared to work in many types of industries including those concerned with mapping, remote sensing, mining, the petroleum industries, environmental firms, and in many other local, national, and multinational organizations where a scientist with a broad conceptual background as well as special knowledge about the earth would be needed.

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 14. 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, paleontology or geophysics, petrology, sedimentation, geomorphology, and structural geology, as well as six or more credits in field geology or the equivalent. 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 (courses numbered 500 and above), and a masters thesis. Although at least half of the course work must be taken in geology, graduate courses in other disciplines may be accepted as part of the required credits providing the candidate, his/her adviser and graduate committee all agree that such course work will enhance the program. The graduate program may be modified by the Geology Department to conform to the needs of individual candidates. The thesis must be in

geology, but the thesis credits will not be counted as constituting part of the minimum required Geology credits.

**Candidacy** for the Masters degree is established by submitting an acceptable *Plan of Work* to the Graduate Officer of the College of Liberal Arts. 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 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 required cognate courses for the Master of Science degree, geology majors should consult their adviser regarding cognate courses which might be of value to their particular program. Depending on interest and future goals, additional courses in mathematics, physics and chemistry, as well as courses in computer science, civil engineering, and geography might 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 32 of this bulletin.*

**Student Assistantships:** Teaching laboratories is considered an important part of the master's program and will be required of all candidates. A limited number of graduate teaching assistantships are available for academically superior students. Requests for teaching assistantships should be directed in writing to the graduate officer and should be received prior to the end of March.

## GRADUATE COURSES (GEL)

*The following courses, numbered 500-999, are offered for graduate credit. Courses numbered 500-699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090-499). Courses in the following list numbered 500-699 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 463.*

### 515 Soils and Soil Pollution. Cr. 4

Prereq: GEL 101, CHM 107, CHM 108. Physical, chemical and mineralogical properties and classification of soils. Behavior of pollutants in soils and methods for reclamation. (Y)

### 762 Seminar in Geology. Cr. 2-4(Max. 8)

Prereq: consent of instructor. Selected fields such as tectonics, volcanology, oceanography, paleontology, groundwater geology. Topics to be announced in *Schedule of Classes*. (I)

### 790 Directed Study in Geology. Cr. 2-8(Max. 8)

Prereq: written consent of instructor, adviser and graduate officer. (T)

### 797 Research in Geology. Cr. 3-4(Max. 8)

Prereq: consent of instructor and adviser. Independent work in laboratory or field. (T)

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

Prereq: consent of adviser. (T)

## GERMAN and SLAVIC LANGUAGES and LITERATURES

*Office:* 443 Manoogian Hall; 577-3024

*Chairperson:* Donald Haase

### Professors

Penrih B. Goff, Edmund Ordon (Emeritus), Marvin S. Schindler, Guy Stern

### Associate Professors

Vladimir Bezdek (Emeritus), Achim Bonawitz, Kenneth Brostrom, Alfred Cobbs, Erhard Dabringhaus (Emeritus), Donald Haase, Maria C. Roth (Emerita)

### Assistant Professors

Frank J. Corliss, Jr., Halimur Khan

### Lecturer

Dickran Toumajan

### Graduate Degrees

*MASTER OF ARTS with a major in German or East European Studies*

*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 14.

**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 including German 751 and 752, plus an eight credit thesis and oral examination*

*Plan B: Twenty-nine credits in course work including German 751 and 752, 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.*

**Plan C — Language and Culture:** Students enrolled in Plan C are required to take German 510 or 640, 751 or 752, 672 or 673. They must also take three to four credits in an approved course on German culture, eight credits in German language and literature courses at the 600-level or above, and three additional courses reflecting their specific area of interest (such as German language, linguistics, art history, folklore, geography, and the like). Course work is followed by three written examinations and an oral examination covering graduate studies.

Under all Plans, the Graduate School requires a minimum of six credits at the 700 level or above.

Students envisaging 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.

**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 192–194 and 20–30, respectively.

### — With a Major in East European Studies

The master's degree in East European Studies is interdisciplinary and is coordinated by the Program in East European Studies. For further information and specific requirements, see page 219.

### 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 Languages and Literatures and the Department of Romance Languages and Literatures. Applicants wishing to major in German should write to the Department of German and Slavic.

Candidates may fulfill the requirements for the degree of Doctor of Philosophy with a major specialization in one modern language and a minor in another. Major programs are offered in French, German, and Spanish and minor programs in French, German, Italian, Russian, and Spanish.

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14. 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.

### 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 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 700 level or above. Course requirements for the Master of Arts (Plan A or B) 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 32 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 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.

Students admitted to the Ph.D. program with a concentration in German who receive a university graduate fellowship may also be considered for the Junior Year in Munich Graduate Fellowship, which provides for an academic year of study at the University of Munich, usually in the recipient's third or fourth year of graduate study. 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

*The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.*

### GERMAN (GER)

#### 510 Advanced Composition and Conversation. Cr. 3

Prereq: GER 310 or 320 or equiv. Emphasizes improvement of student's oral and written command of German. Detailed study of modern German syntax. (B)

#### 590 Directed Study. Cr. 1–4(Max. 8)

Undergrad. prereq: consent of German adviser; grad. prereq: consent of German adviser and graduate officer. (T)

#### 640 Structure of German. Cr. 4

Prereq: GER 510 or equiv. The phonological, morphological, and syntactical structure of modern German; theory and practice. (I)

#### 661 Lyric Poetry. Cr. 4

Historical survey of German lyric poetry from the Baroque to the twentieth century; tools and methods of interpretation. (B)

#### 665 Romanticism. Cr. 4

Philosophical and aesthetical foundations, major figures, and works of the period. (B)

#### 667 The Age of Realism. Cr. 4

*Junges Deutschland*, Heine, Buechner, Grabbe, Hebbel, and the major prose writers of realism. (B)

#### 670 Age of the Baroque. Cr. 4

Historical survey of poetry, *Lied*, and poetics; seventeenth-century mysticism and foundations of *Pietismus*; the Jesuit drama and the secular drama; the novel. (B)

#### 672 The Age of Enlightenment. Cr. 4

Lessing; *Sturm und Drang*. (B)

#### 673 The Classical Age. Cr. 4

Goethe; Schiller. (B)

#### 677 From Naturalism to the End of the Weimar Republic. Cr. 4

(B)

#### 678 Literature from the Third Reich to the Present. Cr. 4

(B)

#### 679 Studies in German Literature. Cr. 1–4(Max. 12)

Major author, genre, or literary movement. Topics to be announced in *Schedule of Classes*. (I)



- 699 **From the Age of Chivalry to the Reformation. Cr. 4**  
From the beginning through the Reformation. (I)
- 700 **Professional Issues In Language, Literature, and Cultural History. Cr. 2 (Max. 4)**  
Examination of a significant academic issue or activity as it relates to the profession of university teaching and research. (F,W)
- 751 **Introduction to the History of the German Language and Historical Grammar. Cr. 4** (I)
- 752 **Middle High German Language. Cr. 4** (I)
- 868 **Seminar in German Studies. Cr. 4(Max. 16)**  
Topics to be announced in *Schedule of Classes*. (Y)
- 796 **Research Project. Cr. 1-4(Max. 12)**  
Prereq: consent of graduate adviser. (T)
- 799 **Master's Essay Direction. Cr. 1-3(3 req.)**  
Prereq: consent of graduate adviser. (T)
- 899 **Master's Thesis Research and Direction. Cr. 1-8(8 req.)**  
Prereq: consent of adviser. (T)
- 999 **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)

- 570 **Genre In Polish Literature. Cr. 3(Max. 6)**  
Prereq: POL 302 or equiv. Development of a literary form: short story, poetry or literary criticism; emphasis on major exponents of the form. Topics to be announced in *Schedule of Classes*. (Y)
- 590 **Directed Study. Cr. 1-3(Max. 12)**  
Prereq: undergrad., POL 302 or equiv., written consent of chairperson; grad., written consent of chairperson and graduate officer. Graduate major credit only in East European Studies. (T)

## RUSSIAN (RUS)

- 590 **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)
- 799 **Master's Essay Direction. Cr. 1-3**  
Prereq: consent of adviser. (T)

## SLAVIC (SLA)

- 899 **Master's Thesis Research and Direction. Cr. 1-8(8 req.)**  
Open only to majors in East European Studies. (T)

# GREEK and LATIN LANGUAGES and LITERATURES

*Office:* 431 Manoogian Hall; 577-3032  
*Chairperson:* Kenneth R. Walters

## *Professors*

Kathleen McNamee, Richard W. Minadeo

## *Associate Professors*

Ernest J. Ament, Joel B. Itzkowitz, Kenneth R. Walters

## *Assistant Professor*

Lena Hatzichronoglou

## *Lecturers*

Mary DeForestDavid Shive, Curt Mayes

## Graduate Degrees

*MASTER OF ARTS with a major in Classics*

*MASTER OF ARTS with a major in Latin*

This department offers courses and programs of instruction in Latin and Greek (both ancient and modern) as well as the Classical literature of these languages in English translation (in which graduate minor or cognate credit may be earned). 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 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 programs of both major and minor standing as well as 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 20-30 and 192-194, 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 14. 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 by this department 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.*

A minimum of sixteen credits are required in the one language (Greek or Latin) and a minimum of twelve credits in the other. A maximum of four credits in cognate or related fields may be taken under Plans B and C. Of courses elected in the major language, a minimum of two must be at the 700 level, exclusive of thesis or essay credits under Plans A and B. A final written and/or oral examination is required.

## Master of Arts with a major in Latin

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14. Additionally, the applicant must present an undergraduate major in Latin 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 Latin 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-eight credits in course work, plus a four-credit essay.*

*Plan C: Thirty-two credits in course work.*

Under Plans A or B, course work must include at least twenty credits in Latin exclusive of Latin 799 or 899, and including eight credits in courses numbered 700 or higher. Under Plan C, course work must include at least twenty credits in Latin, including at least eight credits in courses numbered 700 or higher. A final written and/or oral examination is required for all Plans.

## Assistantships and Scholarships

*General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 32 of this bulletin.*

Teaching assistantships and scholarships are available to qualified graduate students. Applications for scholarships should be made directly to the Graduate School, but applications for teaching assistantships should be submitted to the Department, in care of the graduate adviser. Applications for teaching assistantships are due by March 1.

# GRADUATE COURSES

*The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.*

## CLASSICS (CLA)

**510 (CLA 310) Law and Ancient Society. (HIS 310). Cr. 3–4**  
Relationship between the legal systems of Ancient Greece and Rome and their social and economic settings. Topics include: law and family structure, legal status of women and children, law of succession. Focus is on actual case law and application of the law in real life settings. (B)

**525 Greek and Roman Drama. Cr. 3–4**  
Critical interpretations of Greek and Roman tragedy and comedy, including: Aeschylus, Sophocles, Euripides, Aristophanes, Menander, Plautus, Terence, and Seneca. Historical development of theatre design and dramatic staging. (Y)

**590 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)

**625 (CLA 325) The Ancient City. (HIS 334). Cr. 3–4**  
Prereq: CLA 101, or HIS 534 or HIS 533 or A H 525 or A H 531. 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)

## GREEK (GRK)

**500 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 101 or GRK 102. (Y)

**530 Attic Orators. Cr. 4**  
Prereq: GRK 260 or equiv. or consent of instructor. Development of Greek prose style and rhetoric in selected works of the Attic orators. (I)

**560 Epic Poetry. Cr. 4**  
Prereq: GRK 260 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)

**590 Directed Study. Cr. 1–4 (Max. 8)**  
Prereq: undergrad., written consent of chairperson; grad., consent of chairperson and graduate officer. (T)

**625 Greek Drama. (GRK 360). Cr. 4**  
Prereq: any 300-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)

- 781 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)
- 782 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)
- 799 Master's Essay Direction. Cr. 1-4**  
Prereq: consent of adviser. (T)
- 899 Master's Thesis Research and Direction. Cr. 1-8(8 req.)**  
Prereq: consent of adviser. (T)

- 782 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)
- 796 Research Problems. Cr. 1-4(Max. 8)**  
Prereq: undergraduate major in Latin, consent of adviser. (T)
- 799 Master's Essay Direction. Cr. 1-4**  
Prereq: consent of adviser. (T)
- 899 Master's Thesis Research and Direction. Cr. 1-8(8 req.)**  
Prereq: consent of adviser. (T)

## LATIN (LAT)

- 500 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. Offered in conjunction with LAT 101 or LAT 102. (T)
- 581 Roman Historians. Cr. 4**  
Prereq: LAT 260 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)
- 583 Roman Philosophy. Cr. 4**  
Prereq: LAT 260 or equiv. or consent of instructor. Readings in Latin of the Roman philosophers, including the works of Lucretius, Cicero, Manilius, and Seneca. (I)
- 585 Epic. Cr. 4**  
Prereq: LAT 201 or 260 or equiv. Readings in Latin of the works of Ennius, Vergil, Lucan, Statius and others. (I)
- 586 Lyric and Elegy. Cr. 4**  
Prereq: LAT 260 or equiv. or consent of instructor. Readings in Latin of lyric and elegaic poetry including the works of Catullus, Tibullus, Horace, and Propertius. (I)
- 590 Directed Study. Cr. 1-4(Max. 8)**  
Prereq: undergrad., written consent of chairperson; grad., written consent of chairperson and graduate officer. (T)
- 650 Roman Epistolography. Cr. 4**  
Prereq: any 300-level Latin course or consent of instructor. Social, literary, and historical significance of the letters of Cicero, Pliny and Seneca. (I)
- 684 Roman Drama. Cr. 4**  
Prereq: LAT 315 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)
- 685 Latin Pastoral Poetry. Cr. 4**  
Prereq: LAT 315 or equiv. or consent of instructor. Study of the *Eclagues* and *Georgics* of Virgil. (I)
- 781 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)



# HISTORY

Office: 3094 Faculty/Administration Building; 577-2525  
Chairperson: Alan Raucher

## Professors

Thomas N. Bonner, William J. Brazill, Jr., R. V. Burks (Emeritus), Milton Covensky (Emeritus), Corinne Gilb, C. Norman Guice (Emeritus), Edwin C. Hall, Finley A. Hooper (Emeritus), Christopher H. Johnson, Harry Magoulas (Emeritus), Philip P. Mason, Alan Raucher, Monica Schuler, Samuel F. Scott, Melvin Small, Goldwin Smith (Emeritus)

## Associate Professors

Effie Ambler, John Bukowczyk, Jose Cuello, Charles K. Hyde, Marc Kruman, Stanley D. Solvick

## Assistant Professors

Elizabeth Faue, Stanley Shapiro, Tyrone Tillery, Sandra VanBurkleo, Joseph Ward

## Lecturers

Thomas Anderson, Thomas O'Hara

## 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 M.A.-J.D. 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 14. 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 at least two letters of recommendation, 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 Aptitude and Advanced 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 783 (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 800-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 192-194 and 20-30, 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 example, United States, Modern Europe, Medieval, Ancient); (2) complete a minimum of four courses numbered 700 or above, at least three of which must be in seminars (HIS 790, 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 course work with a minimum of eighteen credits in courses numbered 700 or above. Upon completion of course work, Plan C students must pass a comprehensive examination and a one-hour oral examination.*

Candidacy must be established and an official *Plan of Work* filed with the department by the time 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 14. In addition, applicants to the certificate program must satisfy the following criteria.

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 784 and 785, as well as two other courses from the following: History 781, 786, 788, 789; or Library Science 781.

## Doctor of Philosophy with a Major in History

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14. 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, 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 192-194 and 20-30, 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. In special circumstances, and with permission of the graduate committee, a student may elect to present only one foreign language either by demonstrating mastery of that language or by substitution for the second language certain specific auxiliary skills, such as statistics.

**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/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, modern Europe, Africa (sub-Saharan), 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, American medicine, 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 defend it before the Department, which may be appropriately enlarged as occasion may demand 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 32 of this bulletin.*

Each year a number of graduate assistantships and fellowships are awarded to qualified graduate students. For information, write the Chairperson of the Department or the Departmental Graduate Director.

The History Department offers the following departmental awards:

**Rolf and Julia Johannesen Memorial Scholarship:** Annual award for undergraduate and graduate students in history, with preference given to those studying Ancient history. First award will be available in 1993.

**Alfred H. Kelly Memorial Award:** Annual award of up to \$250 for research-related expenses by graduate students on projects in history.

**Joe L. Norris Memorial Award:** Need-based award of up to \$300 for undergraduate or graduate students in history.

## GRADUATE COURSES (HIS)

*The following courses, numbered 500-999, are offered for graduate credit. Courses numbered 500-699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090-499). Courses in the following list numbered 500-699 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 463.*

### 501 British North America to 1789. (HIS 701). Cr. 4

Prereq: HIS 204. 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)

### 503 Early American Republic: 1789-1850. (HIS 703). 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)

### 504 Civil War and Reconstruction: 1850-1877. (HIS 704). 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)

### 505 The Emergence of Modern America: 1877-1917. (HIS 705). Cr. 4

Emphasis on the rise of big business, social and intellectual change, protest movements and government policies before the twentieth century. (B)

- 506 Modern America: 1917–1945. (HIS 706). Cr. 4**  
Analysis of economic and social problems, politics, and government policies. (B)
- 508 Medicine and Disease in America: 1600–1950. (HIS 708). 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. (Y)
- 510 (CLA 310) Law and Ancient Society. (HIS 310). Cr. 3–4**  
Examination of the relationship between the legal systems of Ancient Greece and Rome and their social and economic settings. Topics include: law and family structure, legal status of women and children, law of succession. Focus is on actual case law and application of the law in real life settings. (I)
- 512 American Foreign Relations to 1933. (HIS 712). 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)
- 513 American Foreign Relations Since 1933. (HIS 713). 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. (Y)
- 516 Constitutional History of the United States to 1877. (HIS 716). Cr. 4**  
American constitutional development from British settlement through the Civil War. Emphasis on British colonial regimes, revolutionary republicanism, and evolving federalism, changing conceptions of citizenship, the constitutional dilemmas associated with territorial expansion, and the sectional controversy. (F)
- 517 Constitutional History of the United States Since 1877. (HIS 717). Cr. 4**  
American constitutional development from reconstruction to the present. Emphasis on economic regulation, the nationalization of the Bill of Rights, modern bureaucratic governance, the imperial presidency, and changing conceptions of citizenship among women, blacks, Indians, and others. (W)
- 519 History of American Social Thought. (HIS 719). 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)
- 520 Women in American Life and Thought. (HIS 720). Cr. 3**  
Role of women in the development of American society and in women's movements. (B)
- 521 The Peopling of Modern America, 1790–1914: A History of Immigration. (HIS 721). 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. (Y)
- 522 The Changing Shape of Ethnic America: World War I to the Present. (HIS 722). 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.' (Y)
- 528 American Legal History. (HIS 728). 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)
- 529 (ECO 549) American Labor History. (HIS 729). Cr. 4**  
Analysis of American workers and unions in the nineteenth and twentieth centuries. (Y)
- 530 Industrial History of the United States. (HIS 730). Cr. 4**  
American industrial growth from origins to present; emphasis on transformation from agrarian to industrial society and its social and economic impact. (Y)
- 531 History of American Criminal Justice. (HIS 731). 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)
- 533 History of Greece. (HIS 733). Cr. 3**  
Ancient Greek culture, emphasizing political events, social and economic institutions, cultural achievements. (B)
- 534 History of Rome. (HIS 734). Cr. 3**  
Institutional and cultural development. (B)
- 536 The Early Middle Ages: 300–1000. (HIS 736). 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)
- 537 The High Middle Ages: 1000–1300. (HIS 737). Cr. 3**  
Economic, social and cultural developments that transformed Western European civilization during the eleventh, twelfth and thirteenth centuries. (B)
- 538 The Renaissance. (HIS 738). 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)
- 539 Europe in the Age of Reformation. (HIS 739). Cr. 3**  
Protestant and Catholic reformation seen in the context of social, economic, and political conditions of the sixteenth and seventeenth centuries. (B)
- 541 The French Revolution and Napoleon. (HIS 741). 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)
- 544 Twentieth Century Europe. (HIS 744). 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)
- 547 Modern Germany. (HIS 747). 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)
- 548 Nazi Germany. (HIS 748). 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. (Y)
- 549 Russian History through the Revolution. (HIS 749). Cr. 4**  
Development and transformation of state power, with particular attention to those economic and social elements peculiar to Russia. (Y)
- 550 The Soviet Union. (HIS 750). 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)

- 552 **Uses of Terror: History of the Police State. (HIS 752). Cr. 4**  
History of the police state as a form of political organization in the twentieth century. General analysis of the phenomenon; case studies. (B)
- 553 **History of World War I and II. (HIS 753). Cr. 4**  
A military history of the two world wars of the twentieth century. (B)
- 562 **The Rise of the European Working Class: 1750-1850. (HIS 762). 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)
- 563 **Socialism and the European Labor Movement. (HIS 763). Cr. 3**  
Comparative labor history from 1850 to the present; Utopian socialism, Marxism, anarchism, syndicalism, communism, fascism; contemporary trends. (B)
- 573 **The History of West Africa. (HIS 773). 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)
- 574 **History of South Africa. (HIS 774). 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)
- 578 **Europe and the United States in the Twentieth Century: Comparative History. (HIS 778). Cr. 4**  
A comparison of social, economic, political and cultural similarities and differences. (I)
- 595 **Honors Seminar. Cr. 3**  
Prereq: consent of chairperson; honors standing in history. (T)
- 600 **Studies in Comparative History. Cr. 2-4**  
Topics to be announced in *Schedule of Classes*. (B)
- 601 **Studies in American History. Cr. 2-4(Max. 9)**  
Topics to be announced in *Schedule of Classes*. (Y)
- 602 **Studies in European History. Cr. 2-4(Max. 9)**  
Topics to be announced in *Schedule of Classes*. (Y)
- 701 **(HIS 501) Readings in British North America to 1789. Cr. 4**  
(I)
- 703 **(HIS 503) Readings in the Early American Republic: 1789-1850. Cr. 4**  
(B)
- 704 **(HIS 504) Readings in the Civil War and Reconstruction: 1850-1877. Cr. 4**  
(B)
- 705 **(HIS 505) Readings in the Emergence of Modern America: 1877-1917. Cr. 4**  
(B)
- 706 **(HIS 506) Readings in Modern America: 1917-1945. Cr. 4**  
(B)
- 708 **(HIS 508) Readings in Medicine and Disease in America: 1600-1950. Cr. 4**  
(Y)
- 712 **(HIS 512) Readings in American Foreign Relations to 1933. Cr. 4**  
(B)
- 713 **(HIS 513) Readings in American Foreign Relations Since 1933. Cr. 4**  
(Y)
- 714 **Readings in Black History. Cr. 3-6**  
Prereq: consent of graduate director. Readings on selected topics in black history. (Y)
- 716 **(HIS 516) Readings in the Constitutional History of the United States to 1877. Cr. 4**  
(F)
- 717 **(HIS 517) Readings in the Constitutional History of the United States Since 1877. Cr. 4**  
(W)
- 719 **(HIS 519) Readings in History of American Social Thought. Cr. 4**  
(B)
- 720 **(HIS 520) Readings in Women in American Life and Thought. Cr. 3**  
(B)
- 721 **(HIS 521) Readings in the Peopling of Modern America, 1790-1914: A History of Immigration. Cr. 3-4**  
(Y)
- 722 **(HIS 522) Readings in the Changing Shape of Ethnic America: World War I to the Present. Cr. 3-4**  
(Y)
- 728 **(HIS 528) Readings in American Legal History. Cr. 4**  
(B)
- 729 **(ECO 549) Readings in American Labor History. (HIS 529). Cr. 4**  
(Y)
- 730 **(HIS 530) Readings in the Industrial History of the United States. Cr. 4**  
(Y)
- 731 **(HIS 531) Readings in the History of American Criminal Justice. Cr. 4**  
(B)
- 733 **(HIS 533) Readings in the History of Greece. Cr. 3**  
(B)
- 734 **(HIS 534) Readings in the History of Rome. Cr. 3**  
(B)
- 736 **(HIS 536) Readings in the Early Middle Ages: 300-1000. Cr. 3**  
(B)
- 737 **(HIS 537) Readings in the High Middle Ages: 1000-1300. Cr. 3**  
(B)
- 738 **(HIS 538) Readings in the Renaissance. Cr. 3**  
(B)
- 739 **(HIS 539) Readings in Europe in the Age of Reformation. Cr. 3**  
(B)
- 741 **(HIS 541) Readings in the French Revolution and Napoleon. Cr. 4**  
(Y)
- 744 **(HIS 544) Readings in Twentieth Century Europe. Cr. 4**  
(B)
- 747 **(HIS 547) Readings in Modern Germany. Cr. 3-4**  
(I)

- 748 (HIS 548) Readings In Nazi Germany. Cr. 3-4 (Y)
- 749 (HIS 549) Readings in Russian History through the Revolution. Cr. 4 (Y)
- 750 (HIS 550) Readings in the Soviet Union. Cr. 4 (B)
- 752 (HIS 552) Readings in Uses of Terror: History of the Police State. Cr. 4 (B)
- 753 (HIS 553) Readings in the History of World War I and II. Cr. 4 (B)
- 762 (HIS 562) Readings in the Rise of the European Working Class: 1750-1850. Cr. 3 (B)
- 763 (HIS 563) Readings in Socialism and the European Labor Movement. Cr. 3 (B)
- 773 (HIS 573) Readings in the History of West Africa. Cr. 4 (I)
- 774 (HIS 574) Readings in the History of South Africa. Cr. 4 (B)
- 778 (HIS 578) Readings in Europe and the United States in the Twentieth Century: Comparative History. Cr. 4 (I)
- 781 (L S 775) Introduction to Archival and Library Conservation. Cr. 3  
Prereq: advanced standing in master's program. Basic course in the fundamentals of archival and library conservation problems and methods essential for effective preservation management of paper and associated materials. (S)
- 783 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)
- 784 Introduction to Archival Methods I. (L S 771). Cr. 3  
Basic training in archival methods. (F)
- 785 Introduction to Archival Methods II. (L S 772). Cr. 3  
Prereq: HIS 784. Continuation of HIS 784. (W)
- 786 Oral History: A Methodology for Research. (ANT 636) (L S 777). Cr. 3  
Techniques of gathering data from individuals for use in research, classroom teaching, in historical, cultural or other contexts. (S)
- 788 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)
- 789 Conservation and Administration of Photograph Collections. (L S 773). 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)
- 790 Directed Study. Cr. 1-3 (Max. 6)  
Prereq: written consent of adviser and graduate officer. (T)
- 799 Master's Essay Direction. Cr. 1-3 (T)
- 802 Seminar in Nineteenth Century American History. Cr. 3(Max. 12) (I)
- 803 Seminar in Modern American History. Cr. 3(Max. 12) (I)
- 805 Seminar in the Constitutional and Legal History of the United States. (JDC 713). Cr. 3 (I)
- 806 Seminar in North American Labor History. Cr. 3(Max. 12) (B)
- 811 (HED 853) Seminar in the History and Philosophy of Higher Education. (EHP 767). 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)
- 816 Seminar in Comparative Labor History. Cr. 3(Max. 12) (B)
- 818 Seminar in Immigration History. Cr. 3(Max. 12) (I)
- 821 Seminar in Medieval History. Cr. 3(Max. 12)  
Prereq: HIS 536 or 537. (B)
- 824 Seminar in Modern European History. Cr. 3(Max. 12) (B)
- 826 Seminar in French History. Cr. 3(Max. 12) (I)
- 899 Master's Thesis Research and Direction. Cr. 1-8(Max. 8) (T)
- 999 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)



# HUMANITIES

Office: 51 West Warren; 577-3035

Chairperson: Martin M. Herman

## Professors

Martin M. Herman, Sara E. Leopold (Emeritus)

## Associate Professors

Ramon J. Betanzos, Marc Cogan, Richard P. Studing

## Lecturers

Rosemary L. Catanese, Janice L. Pokorski, Linda J. Speck

Courses offered by the Department of Humanities draw materials from a range of humanistic disciplines—from art, literature, history, music, and philosophy. These materials are juxtaposed and examined from two interdisciplinary and comparative perspectives: (1) the shared processes of thought which underlie the products of all these disciplines; and (2) the ways in which these products establish and give identity to past epochs and to our common cultural heritage.

The Department's curriculum provides students with an understanding of the foundations upon which all specialized inquiry in the humanistic disciplines rests, develops a context within which the specific contributions of each can be better evaluated, and emphasizes—in a wider sense—the interconnectedness of all forms of human experience and expression. Graduate work in humanities serves as valuable preparation for advanced study in one or another of the specific humanistic disciplines, and/or as preparation for employment which requires an ability to deal with diverse cultural materials. It is appropriate for those planning to pursue further graduate study, for those who aspire to teach interdisciplinary subject matter at the college or secondary school level, for those who wish to be librarians, and for those who seek employment in fields which demand flexibility and adaptability.

Graduate work in humanities currently provides credit for graduate programs in other departments or programs. For information about future M.A. programs in humanities, contact the Chairperson.

# GRADUATE COURSES (HUM)

*The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.*

## 533 Western Culture in the Classical Period. Cr. 3

Prereq: HUM 210 and 211 or equiv. Stylistic relationships among the arts; consideration of connections between the arts and such other forms of knowledge or experience as history, philosophy, religion, and science. (I)

## 535 Western Culture in the Middle Ages. Cr. 3

Prereq: HUM 210 and 211 or equiv. Stylistic relationships among the arts; consideration of connections between the arts and such other forms of knowledge or experience as history, philosophy, religion and science. (I)

## 536 Western Culture in the Renaissance. Cr. 3

Prereq: HUM 210 and 211 or equiv. Stylistic relationships among the arts; consideration of connections between the arts and such other forms of knowledge or experience as history, philosophy, religion, and science. (I)

## 537 Western Culture in the Baroque Period. Cr. 3

Prereq: HUM 210 and 211 or equiv. Stylistic relationships among the arts; consideration of connections between the arts and such other forms of knowledge or experience as history, philosophy, religion, and science. (I)

## 538 Western Culture in the Romantic Period. Cr. 3

Prereq: HUM 210 and 211 or equiv. Stylistic relationships among the arts; consideration of connections between the arts and such other forms of knowledge or experience as history, philosophy, religion, and science. (I)

## 539 Western Culture from 1870 to the Present. Cr. 3

Prereq: HUM 210 and 211 or equiv. Stylistic relationships among the arts; consideration of connections between the arts and such other forms of knowledge or experience as history, philosophy, religion, and science. (I)

## 576 Studies in the Arts and Ideas of American Culture II: The Gilded Age to the Present. Cr. 3

Prereq: HUM 211 and one course in American literature or American history or A S 201 or equiv. (I)

## 701 Bibliography and Methods for Humanities Majors. Cr. 3

Comparative bibliographic techniques and methods in the arts and humanities; examining the range of methodological approaches applicable to interdisciplinary and comparative studies. (I)

## 790 Directed Study. Cr. 1–4(Max. 4)

Prereq: written consent of chairperson, instructor, adviser and graduate officer. (T)

## 799 Master's Essay Direction. Cr. 1–3

(T)

## 899 Master's Thesis Research and Direction. Cr. 1–8(8 req.)

(I)

# LINGUISTICS

Office: Room 429, 51 West Warren; 577-8642  
 Director: Patricia Siple

## Participating Faculty

Richard B. Angell, *Professor (Emeritus), Philosophy*  
 Ellen Barton, *Assistant Professor, English*  
 Lynn Bliss, *Professor, Communication Disorders and Sciences*  
 Walter Edwards, *Professor, English*  
 Helen Hause, *Associate Professor (Emerita), Anthropology*  
 Joel Itzkowitz, *Associate Professor, Greek and Latin*  
 Alexis Manaster-Ramer, *Associate Professor, Computer Science*  
 Sharon Manuel, *Assistant Professor, Communication Disorders and Sciences*  
 T. Michael McKinsey, *Associate Professor, Philosophy*  
 John Mullennix, *Assistant Professor, Psychology*  
 Ljiljana Progovac, *Assistant Professor, English*  
 Martha Ratliff, *Assistant Professor, English*  
 Hilary Ratner, *Associate Professor, Psychology*  
 Aleya Rouchdy, *Professor, Near Eastern Languages*  
 Eli Saltz, *Professor, Psychology*  
 Patricia Siple, *Associate Professor, Psychology*  
 Rebecca Treiman, *Professor, Psychology*  
 Frances Trix, *Assistant 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 14. 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 this program only 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 20-30 and 192-194, 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, ethno-linguistics, 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. An essay and final written and oral examination are required.

The following courses must be taken if the student has not completed them as an undergraduate:

	credits
LIN 529 — Phonology .....	3
LIN 530 — Theory of Syntax .....	3
LIN 570 — Introduction to Linguistic Theory .....	3

In addition, nine credits must be elected from the following:

LIN 531 — Language and Culture .....	3
LIN 557 — Philosophy of Language .....	4
LIN 572 — Topics in Language: Morphology .....	3
LIN 577 — Sociolinguistics .....	3
LIN 671 — Psycholinguistics .....	3
LIN 771 — Advanced Studies in Linguistic Structure (Max. 12 Cr.) .....	4
LIN 772 — Advanced Studies in Language Use (Max. 12 Cr.) .....	4
LIN 777 — 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)

*The following courses, numbered 500-999, are offered for graduate credit. Courses numbered 500-699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090-499). Courses in the following list numbered 500-699 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 463.*

### 504 (SPC 504) Communication in the Black Community. (S E 537). Cr. 3

Sociolinguistic and rhetorical analysis of speech and language behavior among Afro-Americans; linguistic history and development of black English. Related issues concerning the education of black children. (Y)

### 520 (PHI 520) Modal Logic. Cr. 4

Prereq: PHI 185 or PHI 186 or consent of instructor. The logic of necessity, possibility, and other modal notions as they occur in epistemic and deontic contexts. (B)

### 529 (ENG 571) Phonology. Cr. 3

Prereq: LIN 570. 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)

### 530 (ENG 574) Theory of Syntax. Cr. 3

Prereq: LIN 570. 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. (B)

**531 (ANT 531) Language and Culture. Cr. 3**  
 Prereq: ANT 210 or ANT 520 or S S 191 or SOC 201 or consent of instructor. An introduction to the structure of language and to the ways that humans use language in the construction of human worlds. Diversity of the world's languages and universal properties of language will be discussed. Theories of language change will be introduced. (F)

**532 (ANT 532) Language and Society. Cr. 3**  
 An introduction to the functions of language in many kinds of human groups. Languages used to express social roles and statuses, caste, class, and ethnic diversity. Such aspects of language variability as 'street' or vernacular languages, literary standard languages, pidgin and creole languages, and multilingualism. (W)

**557 (PHI 557) Philosophy of Language. Cr. 4**  
 Prereq: PHI 185 or PHI 186 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)

**563 (PHI 563) Twentieth Century Analytic Philosophy I Cr. 4**  
 Prereq: PHI 185 or PHI 186 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)

**570 (ENG 570) Introduction to Linguistic Theory. Cr. 3**  
 Basic concepts and methods of modern linguistics and their application to the study of the English language. (T)

**572 (ENG 572) Topics in Language. Cr. 3(Max. 9)**  
 Topics such as morphology, semantics, pragmatics, language change, history of English, pidgins and creoles, psycholinguistic approaches, text grammar, to be announced in *Schedule of Classes*. (Y)

**573 (ENG 573) Traditional Grammar. Cr. 3**  
 Comprehensive analysis of English sentence structure and parts of speech using the terminology and descriptive approach of traditional grammar. (T)

**576 (ENG 576) American Dialects. Cr. 3**  
 Survey of chief social and geographic dialects of American English and introduction to theory of language variation. (I)

**577 (ENG 577) 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)

**620 (PSY 620) Development of Memory. Cr. 3**  
 Prereq: PSY 209, PSY 240, or consent of instructor. Major theoretical models of memory development will be discussed and used to explore various aspects of the memory process from infancy to adulthood. (I)

**664 (CDS 664) Language Pathology: Etiology and Diagnosis. (SED 664). Cr. 3**  
 Prereq: SPD 530 and SPD 532. Descriptions, etiology, methods of diagnosis of language disorders in children, including remediation. (F)

**671 (PSY 671) 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)

**771 (ENG 771) 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, and linguistic metatheory. Topics to be announced in *Schedule of Classes*. (I)

**772 (ENG 772) Advanced Studies in Language Use. Cr. 4(Max. 12)**  
 Current problems in language use, including issues in language change, language variation, pidgins and creoles, first language acquisition, perception and production, and linguistic stylistics. Topics to be announced in *Schedule of Classes*. (I)

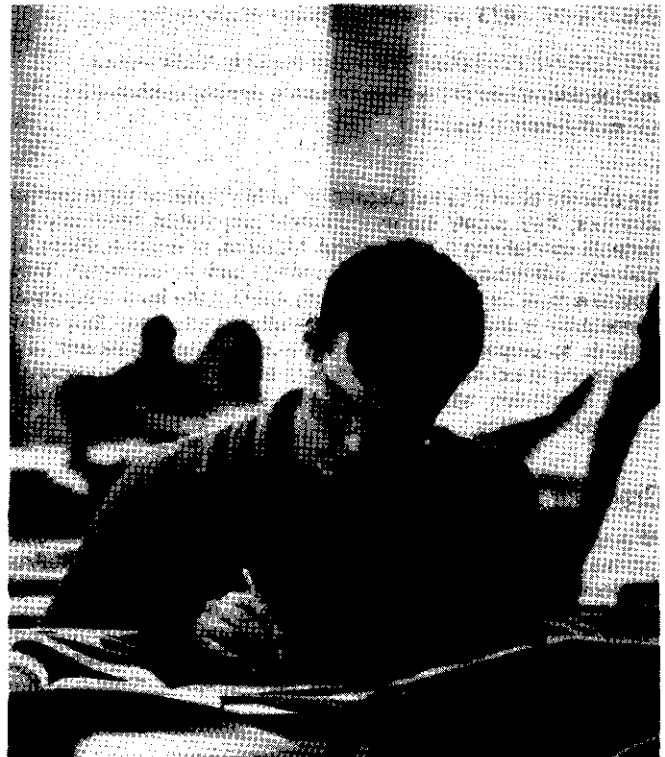
**777 (ENG 777) Discourse Analysis. Cr. 4(Max. 12)**  
 Analysis of inter-sentential relationships and of larger patterns. Implied and actual exchanges. Information ordering. Multi-level and intersectional analysis of expository prose. Topics to be announced in *Schedule of Classes*. (I)

**779 (PHI 779) Seminar in Philosophy of Language. Cr. 6(Max. 12)**  
 Prereq: PHI 185 or equiv. or consent of instructor. (I)

**791 (ANT 791) 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)

**799 Master's Essay Direction. Cr. 1-3**  
 Prereq: consent of adviser. (T)

**822 (SPC 822) Advanced Studies in Language and Communication. Cr. 3(Max. 12)**  
 Prereq: consent of instructor. Topics to be announced in *Schedule of Classes*. (Y)



# MATHEMATICS

Office: 1150 Faculty/Admin. Bldg.; 577-2479

Chairperson: Pao-Liu Chow

Associate Chairperson: Lowell J. Hansen

Academic Services Officer: Mary C. Parks

## Professors

Gregory F. Bachelis, Lawrence J. Brenton, Leon Brown, Paul A. Catlin, Pao-Liu Chow, William S. Cohn, Bertram J. Eisenstadt, Karl W. Folley (Emeritus), David H. Gluck, David Handel, Chong-Shi Houh, John M. Irwin, Judith Q. Longyear, Leonid Makar-Limanov, Charles A. McGibbon, Jose L. Menaldi, Boris Mordukhovich, D. Clarence Morrow (Emeritus), Togo Nishiura, Frank Okoh, Jingyal Pak, Choon-Jai Rhee, Yury Rodin, Claude L. Schochet, Bertram M. Schreiber, Tze-Chien Sun, C. K. Tsao (Emeritus), Martin T. Wechsler

## Associate Professors

Robert D. Berman, John C. Breckenridge, Robert R. Bruner, Daniel S. Drucker, Henryk Fast, Daniel E. Frohardt, Lowell J. Hansen, David W. Jonah, Steven M. Kahn, Morris W. Katz, Tachen Liang, Peter Malcolmson, Harold T. Slaby (Emeritus), Stephen A. Williams

## Assistant Professors

Su Yun Chen Huang, Andrzej Kozłowski, Richard Kramer, Gail Letzter, Kay Maggaard, Edmond Nadler, Gang Yin

## Adjunct Associate Professor

Lance K. Heilbrun

## Graduate Degrees

*MASTER OF ARTS with a major in Mathematics, Mathematical Statistics, or Applied Mathematics*

*MASTER OF ARTS in Teaching College 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 Liberal Arts Academic Procedures section of this bulletin (pages 192-194) and also in the Graduate School section (pages 20-30). 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 14.

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 201, 202, 203, 225, and 235); 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 542, 543, 560 and 561, if not previously completed. Election of Mathematics 650 or 660, if not previously completed.
3. Election of at least two of the following, if not previously completed: Mathematics 522, 523, 541, 553, 570, 577, 582, 586 and Computer Science 661. These courses represent several areas of applied mathematics.
4. Election of at least one additional mathematics course numbered 600, or higher, with the exception of Mathematics 799, 899 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 700 and above.

**Computer Science Cognates:** For students interested in computer science, suitable cognates are: Computer Science 518, 661, 662.

**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 616 for 542 in satisfying requirement two.
- b) substitute Mathematics 615 for 570 in satisfying requirement three.
- c) add Mathematics 614 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 542, 543, 560, 561, 570, 582 and 780, if not previously completed. Election of Mathematics 650 or 660, if not previously completed. Mathematics 760 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 Teaching College Mathematics

The requirements for this degree coincide with those for the Master of Arts with a major in mathematics (see above) except that:

- a) a total of thirty-two credits is required.
- b) requirements 3 and 4 are replaced by the election of at least three courses to be determined in consultation with the director of the master's program.
- c) only Plan B (see above) is permitted.

### — 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 14. 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 201–203, 225, 235, 507, 542, Computer Science 203 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 sixteen credits in mathematics courses not previously completed and numbered 507 or above (except courses for teachers).
3. At least four additional credits in mathematics courses as outlined in (2), above, or in Computer Science 661, 662.
4. 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.
5. 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 14. Doctoral applicants must have completed a master's degree in mathematics or reached an equivalent level of advancement. The Department Graduate Committee 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 2-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.

**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. Further, the first language examination must be passed before completing the Qualifying Examinations.

**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, a representative of the Graduate Committee, and, per University regulations, a representative of the Graduate Dean. 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.

**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 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 740, 750, 760, and 660.

**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 32 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)

*The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.*

### 507 Advanced Calculus. Cr. 4

Prereq: MAT 203, and 225 or 235. 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)

### 510 Numerical Methods. Cr. 3

Prereq: MAT 203, 225 and CSC 102 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)

### 522 Partial Differential Equations and Boundary Value Problems. Cr. 4

Prereq: MAT 507. Boundary value problems of mathematical physics; Sturm–Liouville problems; eigenvalues and eigenfunctions; Green's functions; variational principles; the Rayleigh–Ritz method. (B)

### 523 Complex Variables and Applications. Cr. 4

Prereq: MAT 507. No credit after MAT 660. 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)

### 528 Methods of Differential Equations. Cr. 3

Prereq: MAT 235. 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)

### 535 (PHI 535) Logical Systems I. Cr. 4

Prereq: PHI 185 or PHI 186 or MAT 560 or MAT 542 or consent of instructor. Metaregulations 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)

### 539 (PHI 539) Logical Systems II. Cr. 4

Prereq: PHI 535 or MAT 535 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)

### 540 Elementary Theory of Numbers. Cr. 3

Prereq: MAT 203 and 225. Unique factorization theorem; order of magnitude of arithmetic functions; congruences, quadratic residues, law of reciprocity; continued fractions; elements of geometry of numbers; second part of number theory. (Y)

### 541 Applied Linear Algebra. Cr. 4

Prereq: MAT 203 and 225, 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)

### 542 Algebra I. Cr. 4

Prereq: MAT 203 and 225. 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)

### 543 Algebra II. Cr. 4

Prereq: MAT 542. 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)

### 552 Introduction to Topology. Cr. 3

Prereq: MAT 203, and 225 or 235. 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)

**553 Elementary Differential Geometry and its Applications. Cr. 3**

Prereq: MAT 203 and 225. 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)

**560 Introduction to Analysis I. Cr. 4**

Prereq: MAT 507 or consent of instructor. Completeness, convergence, compactness and continuity in the context of Euclidean spaces; applications to differential and integral calculus. (T)

**561 Introduction to Analysis II. Cr. 3**

Prereq: MAT 560. Point-wise and uniform convergence of sequences and series of functions; power series; introduction to analytic functions; Fourier series; possible additional topics. (T)

**570 Introduction to Probability Theory. Cr. 4**

Prereq: MAT 203, 225 or 235. Only two credits after MAT 221 or MAT 615. 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)

**571 Introduction to Stochastic Processes. Cr. 3**

Prereq: MAT 570 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)

**577 Mathematical Models in Operations Research. Cr. 3**

Prereq: MAT 203, 225, and 221 or 570 or consent of instructor. Mathematical models (deterministic and/or probabilistic) applied to dynamic programming; games; queues and inventories. (B)

**582 Statistics I. Cr. 3**

Prereq: MAT 570 or consent of instructor. Survey of statistical methods. Topics include sampling distributions; point and interval estimations; Bayesian statistics; testing hypotheses; sequential methods; linear models, and others. (Y)

**583 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)

**586 Introduction to Linear Programming. Cr. 3**

Prereq: MAT 203 and 225. Theory of linear programming; methods of solving linear programming problems (simplex, dual simplex and other methods); applications of linear programming (problem formulation, computational aspects, sensitivity analysis); networks. (B)

**589 Special Topics In Mathematics. Cr. 3-4(Max. 12)**

Prereq: MAT 203, and 225 or 235. Material currently of interest to students and faculty. Topics to be announced in *Schedule of Classes*. (I)

**590 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)

**613 Topics in Mathematics for High School Teachers I. (MAT 286). Cr. 4**

Prereq: MAT 202. No credit after MAT 187. 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)

**614 Topics in Mathematics for High School Teachers II. Cr. 3**

Prereq: MAT 203, and 225 or 235. Axiomatic geometry: logic, methods of proof, models; Hilbert's axioms; the Parallel Postulate; 'Neutral,' Euclidean and non-Euclidean geometries; Hyperbolic geometry; Poincare models. (Y)

**615 Topics in Mathematics for High School Teachers III. (MAT 221). Cr. 4**

Prereq: written consent of chairperson of mathematics education. No credit after MAT 570. 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)

**616 Topics in Mathematics for High School Teachers IV. Cr. 3**

Prereq: MAT 203 and 225. No credit after MAT 542. Algebraic structure: rings, integral domains, fields, groups; applications to polynomials and theory of equations. (Y)

**640 Graph Theory. Cr. 4**

Prereq: MAT 542 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)

**641 Combinatorics. Cr. 4**

Prereq: MAT 542 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)

**650 Topology I. Cr. 4**

Prereq: MAT 561 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. (B)

**660 Complex Analysis. Cr. 2 or 4**

Prereq: MAT 561 or consent of instructor. Offered for two credits only if student has taken MAT 523. Complex differentiation; elementary functions; Cauchy's integral theorem; power series; Laurent expansions; singularities; residue theorem; entire and meromorphic functions; Riemann mapping theorem. (B)

**683 Design of Experiments. Cr. 3**

Prereq: MAT 582. Randomized blocks; Latin and Graeco-Latin squares; factorial designs; confounding; split plot; fractional replication; balanced incomplete blocks. (I)

**720 Ordinary Differential Equations. Cr. 3**

Prereq: MAT 542 and 561 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)

**721 Partial Differential Equations. Cr. 3**

Prereq: MAT 542 and 561 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)

**727 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)

**740 Advanced Algebra I. Cr. 4**

Prereq: MAT 543 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)

**741 Advanced Algebra II. Cr. 3**

Prereq: MAT 740 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)

**747 Topics in Algebra. Cr. 3–4(Max. 12)**

Prereq: MAT 741 or consent of instructor. Selected topics from linear algebra; homological algebra; group theory; field theory. Topics to be announced in *Schedule of Classes*. (B)

**750 Topology II. Cr. 4**

Prereq: MAT 650 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)

**751 Algebraic Topology I. Cr. 3**

Prereq: MAT 543 and 650. Homology and its applications including fixed–point theorems; Jordan–Brouwer separation theorem; invariance of domain; CW–complexes; Kunneth theorem. (B)

**752 Algebraic Topology II. Cr. 3**

Prereq: MAT 751. Cohomology ring; orientation and duality on manifolds; homotopy theory, Hurewicz theorem. (B)

**760 Real Analysis I. Cr. 3**

Prereq: MAT 561 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)

**761 Real Analysis II. Cr. 3**

Prereq: MAT 760 or consent of instructor. Differentiation; relationship between differentiation and integration; Radon–Nikodym theorem; Fourier transforms; Hilbert and Banach spaces; selected topics. (B)

**762 Introduction to Functional Analysis. Cr. 3**

Prereq: MAT 761 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)

**770 Advanced Probability Theory I. Cr. 3**

Prereq: MAT 570 and 760 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)

**771 Advanced Probability Theory II. Cr. 3**

Prereq: MAT 770 or consent of instructor. Law of large numbers; characteristic functions; limit theorems; random walks; Markov processes; stationary processes; ergodic theory; martingales. (B)

**777 Special Topics in Probability. Cr. 3–4(Max. 12)**

Prereq: MAT 771. 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)

**780 Statistics II. Cr. 3**

Prereq: MAT 582 or consent of instructor. Introduction to mathematical statistics. Topics include: sufficient statistics; Rao–Blackwell theorem and Cramer–Rao inequality; complete family of probability density functions; non–parametric methods; multivariate analysis; regressions and others. (B)

**787 Topics in Statistics. Cr. 3–4(Max. 12)**

Prereq: MAT 780 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)

**790 Directed Study. Cr. 1–4(Max. 12)**

Prereq: written consent of adviser and graduate officer. (T)

**799 Master's Essay Direction. Cr. 1–3**

Prereq: consent of adviser. (T)

**800 Advanced Topics in Mathematics. Cr. 2–4(Max. 24)**

Prereq: consent of instructor. Topics to be announced in *Schedule of Classes*. (Y)

**899 Master's Thesis Research and Direction. Cr. 1–8(8 req.)**

Prereq: consent of adviser. (T)

**999 Doctoral Dissertation Research and Direction. Cr. 1–16(30 req.)**

Prereq: consent of doctoral adviser. Offered for S and U grades only. (T)

## Service Courses

**516 Mathematics for Elementary School Teachers I. (MAE 505). Cr. 3**

No credit toward a major or minor for secondary mathematics teaching. Graduate credit for MAE 505 only; undergraduate credit for MAT 516 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)

**517 Mathematics for Elementary School Teachers II. (MAE 506). Cr. 3**

Prereq: MAT 516. No credit toward a major or minor for secondary mathematics teaching. Graduate credit for MAE 506 only; undergraduate credit for MAT 517 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)

**518 Mathematics for Middle/Junior High School Teachers I. (MAE 510). Cr. 3**

Prereq: MAT 516 and 517 or consent of instructor. No credit toward a major or minor for secondary mathematics teaching. Graduate credit for MAE 510 only; undergraduate credit for MAT 518 only. Development of Euclidean geometry as a mathematical system; related historical topics; introduction to other geometries; selected topics such as transformations and tessellations. (Y)



**519 Mathematics for Middle/Junior High School Teachers II.**  
(MAE 511). Cr. 3

Prereq: MAT 518. No credit toward a major or minor for secondary mathematics teaching. Graduate credit for MAE 511 only; undergraduate credit for MAT 519 only. Trigonometry and analytical geometry. (Y)

**617 Mathematics for High School Teachers I.**  
Cr. 1-4(Max. 6)

No graduate credit. Selected topics from set theory, abstract algebra; geometry, and current curriculum studies in high school mathematics at ninth grade level. (I)



## NEAR EASTERN and ASIAN STUDIES

Office: 437 Manoogian; 577-3015  
Chairperson: Jacob Lassner

### Professors

Jacob Lassner, Aleya A. Rouchdy, Ivan Starr

### Graduate Degrees

*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 14. 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 192-194 and 20-30, 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 and must include Hebrew 782.

### — 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.

# NUTRITION and FOOD SCIENCE

Office: 3009 Science Hall; 577-2500  
Chairperson: Leora A. Shelef  
Administrative Assistant: Laura Lee Birnie-Lindemann

## GRADUATE COURSES

The following courses, numbered 500-999, are offered for graduate credit. Courses numbered 500-699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090-499). Courses in the following list numbered 500-699 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 463.

### ARABIC (ARB)

#### 501 Medieval Arabic Texts. Cr. 3

Prereq: ARB 201 or consent of instructor. Reading and translation of Arabic Medieval texts. (Y)

#### 590 Directed Study. Cr. 3-6(Max. 9)

Prereq: undergrad., consent of chairperson; grad., consent of chairperson and written consent of graduate officer. Readings; periodic consultations and reports. (T)

### HEBREW (HEB)

#### 590 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)

#### 590 Directed Study. Cr. 3-6 (Max. 9)

Prereq: undergrad., consent of chairperson; grad., consent of chairperson and graduate officer. Readings, consultations, reports. (T)

#### 799 Master's Essay Direction. Cr. 1-3

Prereq: consent of adviser. (I)

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

Prereq: consent of adviser. (I)

### Professors

Mary Jane Bostick (Emerita), Leora A. Shelef

### Associate Professor

K.-L. Catherine Jen

### Assistant Professors

Doh-Yeel Lee, Nancie S. Merlino, Ifendu A. Nnanna

### Lecturers

Elizabeth Kustin, Tonia Reinhard

### Associates

Biochemistry: S.C. Brooks; Biological Sciences: J.M. Jay;  
Chemical Toxicology: R.F. Novak; Internal Medicine: G. Grunberger,  
J.D. Peuler, S. Kasim, J.R. Sowers; 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 14. Additionally, applicants must have a 2.80 honor point average. 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, and laboratory techniques are required for the M.S. degree; biochemistry and statistics are recommended. Persons lacking a limited number of prerequisites may be conditionally admitted contingent upon completion of certain courses specified by the graduate committee.

The Graduate Record Examination is required of all students. Applicants must attain a combined (verbal, analytical and quantitative) score of 1500 or greater. Individuals with lower scores may be considered for admission if their overall h.p.a. and h.p.a. in prerequisite courses is 3.00 or greater.

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:** The Master of Arts and the Master of Science are offered with a Major in Nutrition and Food Science under the following plans:

*Plan A: Thirty-two credits, including an eight-credit thesis.*

*Plan B: Thirty-two credits, including a three-credit essay.*

*Plan C: Thirty-two credits in course work.*

Plan C is available only for students seeking a Master of Arts degree with emphasis in foods service systems management. A final oral examination is required of all students.

The Master of Arts and the Master of Science programs have the same curricular requirements as cited below, EXCEPT that the Master of Science degree requires at least twelve credits in laboratory course work. Requirements for both degrees are presented in accordance with the various Plans, A, B, or C. Candidacy must be established by the time twelve credits have been earned, and the applicant must file a copy of the *Plan of Work* with the Graduate Office. The committee on graduate studies may require satisfactory achievement in a comprehensive examination before candidacy is recommended.

<i>General Requirements (Plans A, B and C)</i>	<i>Credits</i>
NFS 513 — Food Chemistry .....	3
NFS 523 — Nutrition and Metabolism .....	4
NFS 606 — Research Problems in Nutrition and Food Science .....	4
NFS 785 — Seminar (two semesters required; one credit per semester) .....	2

<i>Additional Requirements (Plans A and B)</i>	
NFS 714 — Advanced Lab. Techniques in Nutrition and Food Science (M.S. degree) .	4
NFS 799 — Essay (Plan B) .....	3
NFS 899 — Thesis (Plan A) .....	8

<i>Electives (Plans A and B)</i>	
NFS 522 — Community Aspects of Nutrition .....	4
NFS 525 — Nutrition and Disease .....	4
NFS 616 — Food Laws and Regulations .....	3
NFS 621 — Nutrition through the Life Cycle .....	3
NFS 713 — Food Preservation .....	4
NFS 715 — Food Processing and Nutrient Retention .....	3
NFS 723 — Nutrition and Physical Performance .....	3
NFS 789 — Advanced Workshop: Mineral Metabolism .....	3
— Advanced Workshop: Vitamin Metabolism .....	3
— Advanced Workshop: Nutrition and Aging .....	2

*Additional Requirements (Plan C)*

*I. A minimum of 20 credits to be selected from the following (courses marked with an asterisk are required):*

NFS 522 —Community Nutrition .....	4
NFS 525 — Nutrition and Disease .....	4
NFS 526 —Practicum in Nutrition .....	Max. 4
NFS 535 —Organization and Management of Food Service Systems .....	4
NFS 592 —Supervised Field Experience .....	Max. 4
* NFS 616 — Food Laws and Regulations .....	3
NFS 621 — Nutrition through the Life Cycle .....	3
NFS 685 — (WI) Seminar .....	2
* NFS 713 — Food Preservation .....	4
NFS 715 — Food Processing and Nutrient Retention .....	3
NFS 723 — Nutrition and Physical Performance .....	3
NFS 726 —Practicum: Nutrition .....	2-4
NFS 785 — Seminar in NFS (one credit per semester) .....	2
NFS 789 — Advanced Workshop: Mineral Metabolism .....	3
— Advanced Workshop: Vitamin Metabolism .....	3
— Advanced Workshop: Nutrition and Aging .....	2
NFS 790 —Directed Study (Max. 8 credits) .....	1-4

*II. A minimum of eight credits in management courses (School of Business Administration) to be selected from the following:*

MGT 550 — Organization and Management Theory .....	3
MGT 552 — Behavior in Organizations .....	3
MGT 560 — Introduction to Production Management .....	3

MGT 566 — Managing the Small Business .....	3
MGT 570 — Personnel Administration .....	3
MGT 574 — Collective Bargaining .....	3
MKT 530 — Marketing Management .....	3

*III. Elective courses: Additional courses selected from those listed under elective sets I or II, above, or in food microbiology (Biological Sciences), Computer Science, or a course approved by the adviser.*

*Master of Science Laboratory Requirement (Twelve 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 796 —Research .....	3-6
NFS 799 —Master's Essay Direction .....	2
NFS 896 —Advanced Graduate Research .....	2-6
NFS 899 —Master's Thesis Research and Direction .....	7

**— Program for Dietetic Interns**

Students accepted into an American Dietetic Association approved dietetic internship may pursue any of the above described plans of work. Applicants may earn up to four credits in supervised field experience (NFS 592) and up to four credits in the practicum in nutrition (NFS 526) in association with the dietetic internship experience, after completion of eight graduate credits in the Department. In addition, upon approval of the academic adviser and the internship director, qualified students may pursue a directed study (NFS 790) 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 14. Applicants to the program must have a master's degree in nutrition and/or food science or in a cognate science. A minimum honor point average of 3.0 and a combined verbal, analytical and quantitative Graduate Record Examination score of 1500 or greater are required; exceptions require consent of the Departmental Committee on Graduate Study. 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 are 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 in one 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 999), involving independent research under the direction of a faculty member in the Department.
4. Submission of a satisfactory research dissertation.

## Assistantships

General sources of financial aid for graduate students may be found in the section on Graduate Financial Assistance, beginning on page 32 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)

The following courses, numbered 500-999, are offered for graduate credit. Courses numbered 500-699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090-499). Courses in the following list numbered 500-699 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 463.

### 500 Contemporary Issues in Nutrition and Food Science. Cr. 1-4(Max. 8)

No topic may be repeated. Topics to be announced in *Schedule of Classes*. (I)

### 513 Food Chemistry. Cr. 3

Prereq: NFS 213 or equiv., CHM 224. Study of the chemical constituents of foods, their relationship to the biological and physical properties, and overall food quality. (W)

### 514 Laboratory Techniques in Nutrition and Food Science. Cr. 4

Prereq: NFS 213 and 221 or equiv.; CHM 108 or equiv. Material fee as indicated in *Schedule of Classes*. Breakage fee as indicated in *Schedule of Classes*. Basic modern and classical analytical techniques and instruments in nutrition and food science. Background theory to principals of instrumental assays. Procedures for evaluation of macro and micro food components analysis. Physiological functions relevant to nutrition. (Y)

### 522 Community Nutrition. Cr. 4

Prereq: NFS 213, 214, 221, 523, 525. 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)

### 523 Nutrition and Metabolism. Cr. 4

Prereq: NFS 221, BIO 287 or equiv.; BCH 501 or equivalent course in biochemistry. 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)

### 525 Nutrition and Disease. Cr. 4

Prereq: NFS 523. 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)

### 535 Organization and Management of Food Service Systems. Cr. 4

Prereq: NFS 213, 214, 221. 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)

### 590 Honors Directed Study. Cr. 1-4(Max. 6)

Prereq: College honors standing; 3.3 h.p.a. (T)

### 592 Supervised Field Experience. Cr. 2-4

Prereq: written consent of instructor. Supervised field experience designed to correlate classroom theory with practical work. (F,W)

### 596 Research in Food Science and Nutrition. Cr. 2-4(Max. 6)

Prereq: written consent of instructor. Minimum of 3 hours of lab research for each credit. Research projects under direction of faculty active in research. (T)

### 606 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)

### 613 Food Preservation. (NFS 713)(CHE 613). Cr. 4

Prereq: BIO 220, NFS 213, and NFS 513 or equiv. Material fee as indicated in *Schedule of Classes*. Breakage fee as indicated in *Schedule of Classes*. Fundamentals of food preservation: refrigeration, freezing, thermal processing, dehydration and concentration, salting and smoking, chemical preservation, radiation preservation, fermentation. (F)

### 616 Food Laws and Regulations. Cr. 3

Prereq: NFS 221 and 513 or equiv. 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)

### 621 Nutrition through the Life Cycle. Cr. 3

Prereq: NFS 221. Biological growth and nutritional requirements from fetal stages of development through aging. Nutritional standards in light of current epidemiological data and scientific research. (S)

### 623 Nutrition and Physical Performance. (NFS 723). Cr. 3

Prereq: NFS 221, advanced biochemistry course. 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)

### 685 (WI) Seminar. Cr. 2-4(Max. 6)

Prereq: consent of instructor; senior standing. Topics to be announced in *Schedule of Classes*. (F,W)

### 713 (NFS 613) Food Preservation. (CHE 613). Cr. 4

Prereq: BIO 220, NFS 213 and NFS 513 or equiv. Material fee as indicated in *Schedule of Classes*. Breakage fee as indicated in *Schedule of Classes*. Fundamentals of food preservation: refrigeration, freezing, thermal processing, dehydration and concentration, salting and smoking, chemical preservation, radiation preservation, fermentation. (F)

### 714 Advanced Laboratory Techniques in Nutrition and Food Science. Cr. 4

Prereq: graduate standing; CHM 312; BCH 501 or CHM 560 or equiv.; NFS 514. Material fee as indicated in *Schedule of Classes*. Breakage fee as indicated in *Schedule of Classes*. Laboratory techniques in nutrition and food science research, including: animal experimentation, isotope use and quantitation, radioimmunoassay and receptor assays, atomic absorption; chromatography; microbial assays. (Y)

### 715 Food Processing and Nutrient Retention. Cr. 3

Prereq: NFS 513 or equiv.; BCH 510 or CHM 560. Effects of production, processing, preparation, practices and storage on nutrient composition of foods; nutrient interactions and loss, food fortification, enrichment and restoration methods, recent advances in processing technology. (B)

**723 (NFS 623) Nutrition and Physical Performance. Cr. 3**  
Prereq: NFS 221, advanced biochemistry course. 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)

**726 Practicum in Nutrition. Cr. 2-4**  
Prereq: NFS 525 or consent of instructor. Offered for S and U grades only. Open only to graduate students. Supervised participation in diet counseling in community agencies or nutrition clinics. (F,W)

**785 Seminar. Cr. 1-3(2 req.; max. 8)**  
Prereq: consent of instructor. Topics to be announced in *Schedule of Classes*. (F,W)

**789 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)

**790 Directed Study. Cr. 1-4(Max. 4)**  
Prereq: written consent of adviser, instructor and graduate officer. Offered for each area of specialization. (T)

**796 Research. Cr. 2-6(Max. 6)**  
Prereq: consent of adviser. (T)

**799 Master's Essay Direction. Cr. 1-3(Max. 3)**  
Prereq: consent of adviser. (T)

**896 Advanced Graduate Research. Cr. 1-6**  
Prereq: consent of adviser. Original investigation conducted by students who have been admitted to the Ph.D. program in nutrition and food science, and have accumulated at least thirty post-bachelor credits. (T)

**899 Master's Thesis Research and Direction. Cr. 1-8(8 req.)**  
Prereq: consent of adviser. (T)

**999 Doctoral Dissertation Research and Direction. Cr. 1-16(30 req.)**  
Prereq: consent of doctoral adviser. Offered for S and U grades only. (T)

# PHILOSOPHY

*Office:* Room 353, 51 West Warren; 577-2474  
*Chairperson:* Bruce Russell

## *Professors*

Richard B. Angell (Emeritus), Lawrence B. Lombard, T. Michael McKinsey, Robert J. Yanal

## *Associate Professors*

Herbert Granger, Barbara M. Humphries, Lawrence Powers, Bruce Russell, William D. Sune, 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 14. 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. (This Plan may be elected only with adviser approval.)*

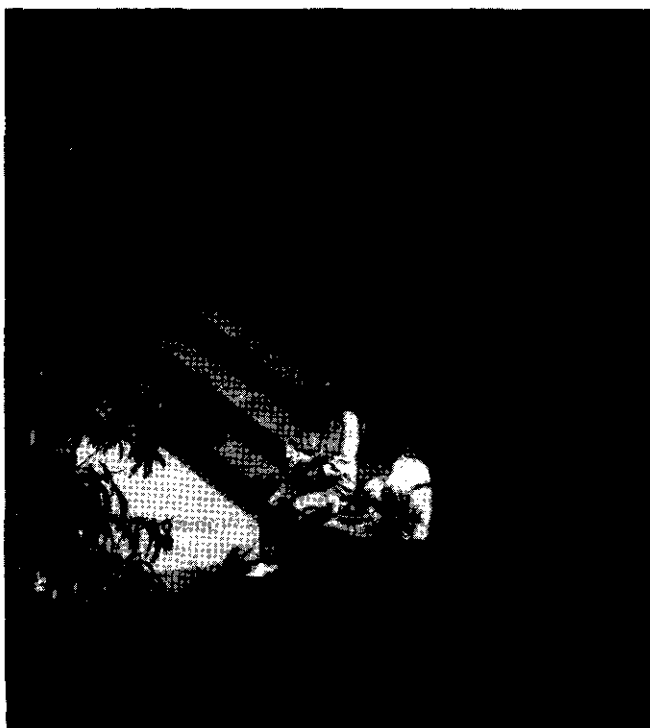
*Plan C: (open only to prospective doctoral candidates registered in the Ph.D. program) Thirty-two credits of course work, plus satisfaction of all Ph.D. logic requirements and passing all doctoral Preliminary Examinations.*

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 14.

**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 20-30 and 192-194, respectively. In order to continue in the program and gain admission to candidacy, a student must satisfy the following:



1. Pass the Departmental Examinations 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. Pass the Preliminary Examinations 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 32 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)

*The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.*

### History of Philosophy

- 515 Existentialism and Phenomenology. Cr. 4**  
Prereq: PHI 211 or 212 or 213 or consent of instructor. Selected topics or readings related to the work of one or more of the major existentialist or phenomenological philosophers, such as Nietzsche, Husserl, Heidegger and Sartre. (B)
- 541 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)
- 542 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)
- 544 Continental Rationalism. Cr. 4**  
Prereq: any philosophy course at the 200 level or above, or consent of instructor. Topics concerning Descartes, Spinoza or Leibniz. (I)

- 545 British Empiricism. Cr. 4**  
Prereq: any philosophy course at the 200 level or above, or consent of instructor. Topics concerning Locke, Berkeley or Hume. (I)
- 546 Kant. Cr. 4**  
Prereq: any philosophy course at the 200 level or above, or consent of instructor. Selected topics or readings in Kant's philosophy. (B)
- 781 Seminar in History of Philosophy. Cr. 5 (Max. 10)**  
Study of a philosopher or period. (I)

### Theory of Value

- 524 Special Topics in Social and Political Philosophy. Cr. 4 (Max. 8)**  
Prereq: any philosophy course at the 200 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)
- 527 Philosophy of Law. Cr. 4**  
Prereq: one philosophy course at the 200 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)
- 528 History of Ethics. Cr. 4**  
Prereq: one philosophy course at the 200 level or above or consent of instructor. A survey and discussion of historically important moral philosophers from Plato to Mill. (B)
- 530 Twentieth Century Analytic Ethics. Cr. 4**  
Prereq: any philosophy course at the 200 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)
- 783 Seminar in Aesthetics. Cr. 5 (Max. 10)**  
Prereq: PHI 370 or consent of instructor. (I)
- 784 Seminar in Ethics. Cr. 5 (Max. 10)**  
Prereq: any 500-level course in philosophy or consent of instructor. (I)

### Philosophical Problems

- 523 Philosophy of Science. (SOC 608). Cr. 4**  
Prereq: PHI 185 or 186 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)
- 550 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*. (B)
- 553 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*. (B)
- 555 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)
- 557 Philosophy of Language. (LIN 557). Cr. 4**  
Prereq: PHI 185 or 186 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)

**563 Twentieth Century Analytic Philosophy I. (LIN 563). Cr. 4**

Prereq: PHI 185 or 186 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)

**564 Twentieth Century Analytic Philosophy II. Cr. 4**

Prereq: PHI 185 or 186 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. (B)

**580 Special Topics in Philosophy. Cr. 3-4(Max. 9)**

Topics and prerequisites to be announced in *Schedule of Classes*. (I)

**779 Seminar in Philosophy of Language. (LIN 779). Cr. 5 (Max. 10)**

Prereq: one 500-level course in philosophy or consent of instructor. (I)

**780 Seminar in Philosophy: Special Topics. Cr. 2-5(Max. 10)**

Prereq: one 500-level course in philosophy or consent of instructor. (I)

**785 Seminar in Epistemology. Cr. 5 (Max. 10)**

Prereq: one 500-level philosophy course or consent of instructor. (I)

**786 Seminar in Metaphysics. Cr. 5 (Max. 10)**

Prereq: one 500-level philosophy course or consent of instructor. (I)

## Logic

**520 Modal Logic. (LIN 520). Cr. 4**

Prereq: PHI 185 or 186 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)

**535 Logical Systems I. (MAT 535). Cr. 4**

Prereq: PHI 185 or 186 or MAT 560 or MAT 542 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)

**539 Logical Systems II. (MAT 539). Cr. 4**

Prereq: PHI 535 or MAT 535 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)

**575 Philosophy of Logic. Cr. 4**

Prereq: PHI 185 or 186 and one other philosophy course at the 200 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 *Schedule of Classes*. (I)

**787 Seminar in Logic. Cr. 5 (Max. 10)**

Prereq: PHI 185 or 186, and one 500-level philosophy course, or consent of instructor. (I)

## Special Courses

**590 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)

**799 Master's Essay Direction. Cr. 1-3**

Prereq: consent of adviser. (T)

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

Prereq: consent of adviser. (T)

**999 Doctoral Dissertation Direction and Research. 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, Jhy-Jiun Chang, Juei-Teng Chen, Thomas M. Cormier, Harry H. Denman (Emeritus), Gerald L. Dunifer, Lawrence D. Favro, David M. Fradkin, Suraj N. Gupta (Distinguished), Walter E. Kauppila, Paul H. Keyes, Yeong Wook Kim, Pao-Kuang Kuo, William B. Rolnick, Alvin M. Saperstein, Martin Stearns (Emeritus), Talbert S. Stein, Melbourne G. Stewart, Robert L. Thomas, Jogindra M. Wadehra, Lowell E. Wenger

## Associate Professors

William E. Dorenbusch, Caroline G. Morgan-Pond, Karur R. Padmanabhan

## Assistant Professors

Matlub Ahmad, Myung Keun Kim, Ching-Kwan Kwan, H. M. Naik

## Adjunct Professors

Gary L. Easley, Robert C. Jaklevic, Eleftherios M. Logothetis, Chi-Chung Jeffrey Yang

## Adjunct Associate Professor

Roger W. Pryor

## Adjunct Assistant Professor

Y.T. Cheng

## 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

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.

## 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. In this context, it should be pointed out that both the M.A. and the M.S. curricula described below allow for the possibility of interdisciplinary work in applied areas. Up to half of the student's course work may be in another department (or departments), so that programs in physics and biophysics, physics and geophysics, physics and chemical engineering, and the like may be easily accommodated. All programs require the approval of the Departmental Graduate Adviser.

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14. In addition, applicants must satisfy the following criteria.

Prerequisite preparation should include a minimum of general college physics with laboratory (equivalent to Physics 217, 218, and 330),

fifteen credits in the intermediate physics courses (for example, those equivalent to Physics 520, 535, 560, 562, 620, 650, 660, 680, 681); mathematics through Mathematics 507; and Chemistry 107; 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 Liberal Arts and the Graduate School governing graduate scholarship and degrees; see pages 192-194 and 20-30, respectively.

**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. Courses should include the following:*

1. At either the graduate or undergraduate level, Physics 535, 562, 620, 650, 660, 680, 681, or equivalent courses, and mathematics through MAT 507 or an equivalent course.
2. At least twelve credits in physics at the 700 level or above (exclusive of Physics 790, 796, 799, 895, 899) including at least one of the courses Physics 705, 706, 707; and at least one of the courses Physics 710, 720.
3. A departmental final oral examination is required of all candidates.

**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.*

Course requirements are the same as requirements (1) through (3) in the Master of Arts 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 705, 706, 707, 710, 711, 720, 740, 741, 750, 760, 761.

In addition, students specializing in experimental or theoretical solid state physics will be required to take Physics 755 and 756. Students specializing in any branch of theoretical physics are encouraged to take either relativistic quantum mechanics, quantum theory of fields, or a related directed study. Finally, the student must submit an acceptable 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 20–30 and 192–194, respectively.

**Physics Colloquium (PHY 895):** 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 32 of this bulletin.*

Graduate teaching 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 six to eight contact hours of quiz (recitation) sections or laboratory instruction sessions per week are arranged.

Research 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.

## Videotaped Courses

All advanced physics lecture courses (330 and above) are offered on videotape to accommodate working students. The lecture tapes may be viewed at any time convenient for the student. The instructors will be available for consultation either by telephone or in person during normal working hours and also by appointment. Examination times are arranged with the instructor.

The videotape lectures make it possible for the working student to complete a graduate degree (M.A., M.S., Ph.D.) with a minimum of conflict with his/her work schedule. It should be noted, however, that a period of full-time study is usually needed to fulfill the research requirements of the M.S. and Ph.D. degrees.

# GRADUATE COURSES

*The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.*

## ASTRONOMY (AST)

### 501 Astrophysics and Stellar Astronomy. (PHY 501). (Lct: 3). Cr. 3

Prereq: PHY 214 or PHY 218, MAT 201, or consent of instructor. Material fee as indicated in *Schedule of Classes*. Introduction to astrophysics and stellar astronomy for students in science, engineering and mathematics; emphasis on applications and tests of physical principles (i.e. atomic spectroscopy, nuclear physics, quantum mechanics, and the general theory of relativity); stellar interiors and evolution; origin of the elements and electromagnetic and particle radiation; pulsars, quasars and black holes. (B:W)

## PHYSICS (PHY)

*All courses with a laboratory have a non-refundable materials fee and are so indicated in the Schedule of Classes*

**501 (AST 501) Astrophysics and Stellar Astronomy. Cr. 3**  
Prereq: PHY 214 or 218, MAT 201 or consent of instructor. Material fee as indicated in *Schedule of Classes*. An introduction to astrophysics and stellar astronomy for students in science, engineering and mathematics; emphasis placed on applications and tests of physical principles (atomic spectroscopy, nuclear physics, quantum mechanics and the general theory of relativity); stellar interiors and evolution; origin of the elements and electromagnetic and particle radiation; pulsars, quasars and black holes; galactic structure and cosmology. (B:W)

**503 Plasma Physics. Cr. 3**  
Prereq: PHY 214 or 218 and MAT 201 or consent of instructor. Material fee as indicated in *Schedule of Classes*. Introduction to plasma physics for students in science and engineering. Motion of charged particles in electromagnetic fields; magnetoionic 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:W)

**520 Applied Mechanics. Cr. 3**  
Prereq: PHY 218 or 214, MAT 203. Material fee as indicated in *Schedule of Classes*. Statics and dynamics of particles and systems with emphasis on applications to structures, oscillating systems, fluid flow, elasticity. (W)

**535 Optics. Cr. 3–5**  
Prereq: PHY 218 or 214, MAT 203. Only non-physics majors may take course without laboratory. Material fee as indicated in *Schedule of Classes*. Other Course fee as indicated in *Schedule of Classes*. Geometrical and physical optics: wave motion, interference, diffraction, refraction, dispersion, polarization. (F)

**555 Basic Electronics. Cr. 4**  
Prereq: PHY 214. Not open to physics majors. Material fee as indicated in *Schedule of Classes*. Other Course fee as indicated in *Schedule of Classes*. 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. (F)

**560 (WI) Applied Electricity and Magnetism. Cr. 3**

Prereq: PHY 218 or 214, MAT 235. Material fee as indicated in *Schedule of Classes*. Electrostatics, magnetostatics, dielectrics, magnetic materials, capacitors, inductors, D.C. and A.C. circuits, complex representation of current elements, rectifiers and filters, p-n junctions and an introduction to transistors. (F)

**562 Electronics and Electrical Measurements. Cr. 5**

Prereq: PHY 560 or consent of instructor. Material fee as indicated in *Schedule of Classes*. Other Course fee as indicated in *Schedule of Classes*. Amplifier circuits, operational amplifiers, oscillators, digital electronics, analog and digital measurements. (W)

**590 Directed Study. Cr. 1-3(Max. 6)**

Prereq: junior standing and written 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)

**604 Principles of Physics for Middle and High School Teachers. Cr. 4**

Prereq: PHY 102 or 213 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)

**620 Theoretical Mechanics. Cr. 4**

Prereq: PHY 520 and MAT 235. Material fee as indicated in *Schedule of Classes*. 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. (F)

**635 Applied Modern Optics. Cr. 3**

Prereq: PHY 535. Coherent radiation, laser physics and optical devices, optical techniques in experimental science, topics in modern optics. (B:F)

**650 Thermodynamics and Kinetic Theory. Cr. 4**

Prereq: PHY 218 or consent of instructor. Material fee as indicated in *Schedule of Classes*. Development and critical analysis of concepts of thermodynamics, first and second laws of thermodynamics, thermodynamic equilibrium, Nernst's postulate. Illustrative applications to problems of physical interest. Kinetic theory of gases and introduction to classical statistical mechanics. (W)

**660 Electromagnetic Fields. Cr. 4**

Prereq: PHY 560 and MAT 507. Material fee as indicated in *Schedule of Classes*. Potential theory, electromagnetic field energy, Poynting vector, displacement current, Maxwell's equations, electromagnetic waves, wave guides and cavities. (W)

**680 Modern Physics. Cr. 3**

Prereq: PHY 520 and MAT 235 or consent of instructor. Material fee as indicated in *Schedule of Classes*. Introduction to quantum mechanics, spectra and atomic physics, x-rays, properties of nuclei, radioactivity, particle accelerators and detectors, nuclear reactions, elementary particles, solid state. (F)

**681 Modern Physics. Cr. 3**

Prereq: PHY 680. Material fee as indicated in *Schedule of Classes*. Continuation of PHY 680. (W)

**685 (WI) Experimental Physics Laboratory. Cr. 2**

Prereq: senior standing or consent of instructor. Material fee as indicated in *Schedule of Classes*. Selected experiments in a variety of fields of modern physics. (W)

**686 Computational Physics I. Cr. 3**

Material fee as indicated in *Schedule of Classes*. Introduction to computational languages and the local computational environment; data acquisition and processing, graphical representation of physical

data; elements of network computing; solution of selected physical problems using techniques of numerical analysis, numerical integration, and numerical solutions of algebraic and differential equations; parallel computing. (B:F)

**687 Computational Physics II. Cr. 3**

Prereq: PHY 686. Material fee as indicated in *Schedule of Classes*. Continuation of PHY 686. (B:W)

**691 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)

**692 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)

**705 Elementary Solid State Physics. Cr. 3**

Prereq: PHY 681. Material fee as indicated in *Schedule of Classes*. Contemporary solid state physics dealing primarily with experiments in this area and with modern descriptive models of solids. (F)

**706 Survey of Elementary Particle Physics. Cr. 3**

Prereq: PHY 681. Material fee as indicated in *Schedule of Classes*. 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)

**707 Survey of Nuclear Physics. Cr. 3**

Prereq: PHY 681. Material fee as indicated in *Schedule of Classes*. Topics include: static nuclear electric and magnetic moments as evidence of the nature of the nucleus; bound properties (spin, parity, statistics, etc.) of the simplest nuclear system (two nucleons); nuclear interactions, saturation properties, exchange forces, and isospin; models for extension to systems containing more than two nucleons; radioactivity; electromagnetic decay; fission; fusion in stars and nucleosynthesis. (B)

**710 Methods of Theoretical Physics I. Cr. 3**

Prereq: MAT 507 or equiv., or consent of instructor. Material fee as indicated in *Schedule of Classes*. Techniques for solution of physical problems. (F)

**711 Methods of Theoretical Physics II. Cr. 3**

Prereq: PHY 710. Material fee as indicated in *Schedule of Classes*. Continuation of PHY 710. (W)

**720 Advanced Mechanics. Cr. 4**

Prereq: PHY 620 or consent of instructor. Material fee as indicated in *Schedule of Classes*. Variational principles, central forces, transformation theory, Hamilton-Jacobi theory. (W)

**740 Quantum Mechanics I. Cr. 3**

Material fee as indicated in *Schedule of Classes*. 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)

**741 Quantum Mechanics II. Cr. 3**

Prereq: PHY 740. Material fee as indicated in *Schedule of Classes*. Continuation of PHY 740. (W)

**750 Statistical Mechanics. Cr. 4**

Prereq: PHY 650, 740 or consent of instructor. Material fee as indicated in *Schedule of Classes*. Classical and quantum statistical mechanics and applications. (B:F)

**755 Solid State Physics I. Cr. 3**

Prereq: PHY 740 or consent of instructor. Material fee as indicated in *Schedule of Classes*. Crystal structure, elastic constants, introduction to band theory, semiconductors, magnetic properties of materials, optical properties of solids. (B:F)

**756 Solid State Physics II. Cr. 3**

Prereq: PHY 755. Material fee as indicated in *Schedule of Classes*. Continuation of PHY 755. (B:W)

**757 Advanced Solid State Physics: Long Range Order in Solids. Cr. 2**

Prereq: PHY 650, 705, 740. Long-range order in solids; emphasis on magnetism and superconductivity. Study of selected experimental data and correlation with general solid state principles. (I)

**760 Electromagnetic Theory I. Cr. 3**

Prereq: PHY 660 or consent of instructor. Material fee as indicated in *Schedule of Classes*. 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)

**761 Electromagnetic Theory II. Cr. 3**

Prereq: PHY 760. Material fee as indicated in *Schedule of Classes*. Continuation of PHY 760. (W)

**790 Directed Study. Cr. 1-3(Max. 6)**

Prereq: written 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)

**796 Research in Physics. Cr. 1-4 (Max. 12)**

Prereq: consent of adviser; written consent of chairperson of graduate studies committee. (T)

**799 Master's Essay Direction. Cr. 1-3 (3 req.)**

Prereq: consent of adviser. (T)

**891 Special Topics. Cr. 1-3(Max. 12)**

Prereq: consent of instructor, adviser and chairperson of graduate studies committee. Topics and prerequisites for each section to be announced in *Schedule of Classes*. More than one topic may be elected in a semester. (I)

**895 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)

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

Prereq: consent of adviser. (T)

**999 Doctoral Dissertation Research and Direction. Cr. 1-16**

Prereq: consent of doctoral adviser. Offered for S and U grades only. (T)

# POLITICAL SCIENCE

Office: 2040 Faculty/Administration Building; 577-2630

Chairperson: Charles D. Elder

## Professors

Philip R. Abbott, David W. Adamany, Pi-chao Chen, Edward L. Cushman (Emeritus), Rondal G. Downing, Charles D. Elder, Otto Feinstein, Theodore B. Fleming, Jr. (Emeritus), Wesley L. Gould (Emeritus), Charles J. Parrish, Frederic S. Pearson, Henry J. Pratt, Maurice M. Ramsey (Emeritus), Murray B. Seidler (Emeritus), Jorge Tapia-Videla, Maurice Waters, Harold L. Wolman

## Associate Professors

Timothy Bledsoe, James T. Chalmers, Richard C. Elling, Susan P. Fino, Ray E. Johnston, Robert W. Miller, John M. Strate

## Assistant Professors

Mary Herring, 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 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, junior 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 voluntary health and welfare 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 taxation, 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 14. A strong undergraduate performance is a prerequisite and substantial undergraduate preparation in the social sciences is recommended. Applicants must take the aptitude sections of the Graduate Record Examination and have the results sent to the department.

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 563 (statistics) and Political Science 766 (research methodology). These courses should be taken early in the student's program of study. In addition to the general requirement, 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 20-30 and 192-194, 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 political science including P S 563, 766, 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. The program is officially 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 14. 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 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 664, 730, 732, 733, 734, 741, 766, and ECO 645. 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 20-30 and 192-194, respectively.

**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, page 39.

## Master of Public Administration in Criminal Justice

This program is designed to prepare students through graduate study and training 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 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 20-30 and 192-194, 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 14. 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 20-30).

All students are required to take the Graduate Record Examination. All applications for admission to the doctoral program in political science must have the approval of the Departmental graduate committee. Applications for admission and financial aid are due by February 15 for Fall semester admission. Students may be admitted to the program for other semesters, but the possibilities for financial aid are more limited at these times.

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, a maximum of thirty of which may be 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 766 and 860.
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 563 and 664 (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, Fellowships, and 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 32. In addition, they may be eligible for the following assistantships, fellowships and 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.

**Fellowships:** Contingent upon external funding, the Department awards fellowships to students in the M.P.A. program preparing for public service careers. The fellowships provide up to two calendar years of support and include a stipend plus tuition and fees. Students from groups that have been historically under-represented in the public service are especially encouraged to apply. Inquiries and applications should be directed to the Department's M.P.A. program director.

**Awards:** The *Clifford L. Kaufman Award* is given annually for the best paper, essay, or dissertation written in the area of urban politics and public policy by a graduate student in political science. Candidates for this award are nominated by the faculty.

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)

*The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.*

### 503 Black Politics. (AFS 503). Cr. 4

Nature and texture of black politics; various perspectives of politics by blacks; the impact of blacks on American politics. (Y)

### 506 Comparative American State Politics and Policy. Cr. 4

Examination of the variation in the policy outcomes of American state political systems. The impact of state social, economic and political

characteristics on the nature of state policies. The impact of nonstate governments on state policy processes and outcomes. (B)

### 511 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)

### 512 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)

### 522 Issues in Urban Public Policy and Management. (U P 515). Cr. 4

Prereq: P S 224 and 231 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 program and public services. (B)

### 544 Politics of the Elderly. Cr. 4

Analysis of age-based political behavior as reflected in public opinion, voting, and political organization; reference to special governmental programs and agencies serving the aged. (B)

### 551 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)

### 552 Politics and the Family. Cr. 4

Prereq: P S 101. The family in political thought, Plato to Marx; implications for public policy with emphasis on American context. (B)

### 557 Marxism and Socialist Thought. Cr. 4

Review and analysis of Marxist thought in theory and practice; conflicting interpretations of Marx; democratic socialism; anarchism; contemporary neo-Marxist social science. (Y)

### 563 Statistics and Data Analysis in Political Science I. Cr. 4

Student computer account required. Material fee as indicated in *Schedule of Classes*. 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. (Y)

### 572 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)

### 574 Ethnicity: The Politics of Conflict and Cooperation. (PCS 550)(AFS 574). 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)

### 577 Government and Politics of Latin America. Cr. 4

Political, social, economic and cultural foundations of the systems, the functions, and the structure of institutions and political processes in Latin America. (B)

### 581 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)

**583 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)

**584 The Politics of Disarmament. Cr. 4**  
Arms control; successes and failures analyzed from perspectives of history, sociology, psychology and political science. Differences between United States and U.S.S.R. (B)

**589 (PCS 500) Dispute Resolution. (CRJ 594)(PSY 571). Cr. 3**  
Overview of the processes and sectors in the field of dispute resolution including negotiation, mediation, arbitration, and conciliation. (Y)

**592 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)

**599 Special Topics In Political Science. Cr. 1-4(Max. 16)**  
Prereq: consent of chairperson or undergraduate adviser. Open only to juniors, seniors and graduate students. Topics to be announced in *Schedule of Classes*. (T)

**602 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)

**612 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)

**635 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)

**637 Comparative Public Administration. Cr. 3**  
Prereq: P S 231 or equiv. Comparative analysis of major problems and issues affecting national administrative institutions, structures, processes and behavior in a cross-cultural perspective. (B)

**643 Politics and Administration of Entitlement Programs. Cr. 3**  
Substance of national government policy related to old-age assistance, income maintenance, food stamps, health care, and other entitlement programs. (B)

**644 (U S 621) Regional, State, and Urban Economic Development: Policy and Administration. (ECO 665) (U P 655). Cr. 3**  
Prereq: graduate standing. Examination of regional, state, and local economic development theory, analysis, policy and administration. (B)

**664 Statistics and Data Analysis in Political Science II. Cr. 3**  
Prereq: P S 563 or equiv. Student computer account required. Material fee as indicated in *Schedule of Classes*. 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. (Y)

**703 American Political Processes. Cr. 3**  
Political socialization, public opinion, and political behavior. Role of political parties and interest groups in the political process. (B)

**704 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)

**705 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. (B)

**721 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)

**724 Urban Public Policy. (U P 765). Cr. 3**  
Influences on urban policy makers, policy-making and implementation, service distribution and policy impacts. Applications to substantive policy areas. (B)

**725 Seminar in Urban Administration. 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)

**730 Public Administration in the United States. (U P 755). 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)

**731 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)

**732 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)

**733 Public Budgeting and Finance. Cr. 3**  
Prereq: P S 730. 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)

**734 Public Personnel Management. Cr. 3**  
Prereq: P S 730. 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)

**736 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)

**738 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)

**741 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)

**742 Normative Issues in Public Policy. Cr. 3**  
Exploration of the normative foundations and implications of public policy issues. (B)

**743 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)

**744 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)

**746 Policy Analysis and Program Evaluation. Cr. 3**  
Prereq: P S 766 or equiv. Problems and techniques in the evaluation of social policies and programs in gerontology, social welfare, and other areas. (B)

**747 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)

**755 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)

**760 Major Concepts in Political Science. Cr. 3**  
Major concepts, approaches, and perspectives in political science in an assessment of major works and their contribution to empirical and evaluative concerns in this discipline. (B)

**762 (U S 722) Seminar in Survey Research Methods. Cr. 3**  
(SOC 722). 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)

**766 Research Methods in Policy and Politics. Cr. 3**  
Prereq: P S 563 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)

**768 Research Seminar in Political Science. Cr. 3**  
Prereq: P S 766 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)

**779 Seminar in Comparative Politics. Cr. 3(Max. 9)**  
Selected topics in comparative politics to be announced in *Schedule of Classes*. (B)

**781 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)

**789 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)

**795 Directed Study. Cr. 1-6**  
Prereq: fifteen graduate credits in political science; written consent of chairperson and graduate adviser. (T)

**797 Research in Political Science. Cr. 1-9**  
Open only to students admitted to doctoral study. (T)

**799 Master's Essay Direction. Cr. 1-3(3 req.)**  
Prereq: consent of adviser. (T)

**800 Readings in Political Science. Cr. 3(Max. 6)**  
Prereq: consent of adviser. (T)

**835 Seminar in Public Administration. Cr. 3(Max. 6)**  
Prereq: twelve credits in public administration. Examination of current trends and problems in the organization and management of public organizations. (I)

**860 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)

**899 Master's Thesis Research and Direction. Cr. 1-8(8 req.)**  
Prereq: consent of adviser. (T)

**999 Doctoral Dissertation and Research. Cr. 1-16**  
Prereq: consent of doctoral committee. Offered for S and U grades only. (T)





# PSYCHOLOGY

Office: 71 W. Warren, Room 214; 577-2800

Chairperson: M. Marlyne Kilbey

Associate Chairperson: Alan R. Bass

Administrative Assistant: Dana Leasendale

## Professors

Ernest L. Abel, Joel W. Ager, Sheldon Alexander, Lynn R. Anderson, David Asdourian, Alan R. Bass, Robert F. Berman, Sandor B. Brent, C.G. Browne (Emeritus), Donald N. Elliott (Emeritus), Ira J. Firestone, Joseph M. Fitzgerald, LaMaurice H. Gardner, Joseph L. Jacobson, Kalman J. Kaplan, M. Marlyne Kilbey, Gisela Labouvie-Vief, Sheldon J. Lachman, Sheldon G. Levy, Annette U. Rickel, Gerald Rosenbaum (Emeritus), Eli Saltz, Carolyn M. Shantz, Ross Stagner (Emeritus), Laurence J. Stettner, Rebecca A. Treiman, Francine Wehmer, R. Douglas Whitman, Alice M. Young

## Associate Professors

Winifred R. Fraser (Emeritus), Melissa G. Kaplan-Estrin, Brian Lakey, Cary M. Lichtman, Hilary Ratner, Michael M. Reece (Emeritus), Patricia Siple, Lois Tetrack, Kathryn Urberg, Glenn E. Weisfeld

## Assistant Professors

Sebastiano Fisicaro, Mark Lumley, John Mullenix, Deborah Salem, Felicia W. Seaton, Ellen A. Walker (Visiting)

## Research Associates

Jeremy Hall, Jerry Tolson

## Research Scientists

Sandra W. Jacobson, Ali Naqvi

## Adjunct Professors

Kenneth M. Adams, Naomi Breslau, Donald F. Caldwell, Mitchell Rosenthal

## Adjunct Associate Professors

Gregory Brown, Louis Chiodo, Shirley I. Dobie, Robert R. Freedman, John Hannigan, Ronald F. Lewis, Helene Lycaki, Timothy Roehrs, Barry A. Tanner, Walter Zetusk

## Adjunct Assistant Professors

Antonia Abbey, Linda S. Angell, Rebecca D. Baird, Jesse Wylie-Oliver Bell, Jr., David Benjamins, Michael Butkus, Michael Church, Charles Clark, Allan B. DeHorn, Jerel E. Del Dotto, Grenae D. Dudley, Lisa A. Fruchman, Melanie Hwalek, Joan Lessen-Firestone, Lynn V. Pantano, Edward C. Podany, Arthur Robin

## Graduate Degrees

**MASTER OF ARTS with a major in Psychology**

**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 14. Students may enter the program in either the Fall, Winter, or Spring/Summer semesters. The application deadline for the Fall semester is June 15; for the Winter semester, October 15; and for the Spring/Summer semester, March 15. To obtain a brochure or arrange for a pre-application consultation, contact the Graduate Secretary, 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.

## Master of Arts with a Major in Psychology

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14. 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 715 and two of the following: PSY 701, 708, 709, 712, 725, 740, and 762.

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.

## 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 February 1. 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 20–30 and 192–194, 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 600 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 701 and 709, plus two of the following: PSY 708, 712, 725, 740, 762. To supplement these and to emphasize the quantitative approach in psychology, two advanced courses in psychological statistics and measurement, PSY 715 and 716, are required. 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 basal ganglia function, developmental behavioral toxicology and teratology, and the psycho-physiology of facial expression and emotional development. 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, diagnostic methods, and therapeutic interventions. Requirements also include supervised experience in diagnosis and treatment of clients in practicum courses and during an internship. Special opportunities for training and research in neuropsychology, substance abuse, 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 organization theory and development, personnel selection, motivation, employee-management relations, and managerial training and development. Opportunities exist for field experience in major corporations.

**SOCIAL PSYCHOLOGY:** This program offers concentration in attitude theory and change, sociobiology, environmental psychology, small-group behavior, political psychology, applied social psychology, 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 32 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 (Lafayette Clinic, 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)

The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.

### 505 Physiological Psychology. Cr. 3

Prereq: PSY 101 or 102. No credit after PSY 405. 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)

**506 Laboratory In Physiological Psychology. Cr. 3**  
Prereq: PSY 405 or 505 or consent of instructor. Material fee as indicated in *Schedule of Classes*. Outline of gross neuroanatomy, basic experiments in physiological psychology utilizing brain lesions, chronic electrode implantations in small animals, and measurement of human autonomic responses. (Y)

**507 Bio-behavioral Bases of Drug Action. Cr. 3**  
Prereq: PSY 405 or 505 or equiv., or BIO 102 or equiv. Physiological and behavioral bases of drug action, with emphasis on brain neurotransmitters, psychopharmacology, and substance abuse disorders. (Y)

**528 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)

**546 Applied Issues In Adolescent Development. Cr. 3**  
Prereq: PSY 346 or consent of instructor. Problems encountered by adolescents during development, including: parents, peers, puberty, pregnancy, police, drugs, psychopathology, and schools. (I)

**547 Developmental Assessment of the Young Child. Cr. 4**  
Prereq: PSY 240 and either 243 or 244 or graduate standing; satisfactory health record, TB test within last six months. Material fee as indicated in *Schedule of Classes*. Examination of reliability, validity, test construction, selection of appropriate assessment measures, and use of assessment results to plan intervention. Supervised assessment experience of the young child, ages three to five, through systematic observation and testing within the Psychology Child Development Laboratories. (Y)

**548 Child Development Principles Applied to Preschool Programming. Cr. 3**  
Prereq: introductory course in child development or experience in preschool program; satisfactory health record; TB test within last six months. The individual child in a group setting, utilization of space and materials to foster growth. Case studies of children; one morning per week in preschool setting. (I)

**549 The Aging Individual In Society. Cr. 3**  
Prereq: PSY 101 or 102. 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)

**554 Motivation In the World of Work. Cr. 3**  
Prereq: PSY 101 or 102 and junior or senior standing or consent of instructor. Relationships among motivation, satisfaction, and organizational behavior. Motivational theory and research; organizational influences on motivation and satisfaction; motivational intervention; survey and evaluation. (Y)

**558 Consumer Psychology. Cr. 3**  
Prereq: PSY 101 or 102; junior, senior or graduate standing. 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)

**563 Group Dynamics. Cr. 3**  
Prereq: PSY 260 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)

**565 Psychological Aspects of Leadership. Cr. 3**  
Prereq: PSY 101 or 102. Problems of leadership; functions and duties of leaders, executives. Surveys and methods of study utilized to train and select leaders. (I)

**568 Social Psychology of Personality. Cr. 3**  
Prereq: PSY 101 or 102. 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)

**571 (PCS 500) Dispute Resolution. (CRJ 594)(P S 589). Cr. 3**

Overview of the processes and sectors in the field of dispute resolution including negotiation, mediation, arbitration, and conciliation. (Y)

**620 Development of Memory. (LIN 620). Cr. 3**

Prereq: PSY 209, 240, or consent of instructor. Major theoretical models of memory development will be discussed and used to explore various aspects of the memory process from infancy to adulthood. (I)

**642 Psychology of Infant Behavior and Development. Cr. 3**

Undergrad. prereq: PSY 240 and either 243 or 244. 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)

**644 Psychological Development In Childhood. Cr. 3**

Prereq: one course in developmental psychology. Not open to psychology graduate 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)

**647 Human Development Practicum: Infancy. Cr. 3**

Prereq: PSY 642 and consent of instructor; satisfactory health record, T B test within last six months. Orientation to infant research, assessment, and programming. Experience in infant observation and testing within the Psychology Infant Laboratory. (I)

**648 Psychology of Myth, Magic and Religious Experience. Cr. 3**

Prereq: PSY 101, 240, 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)

**649 Developmental Psychology of Death, Dying and Lethal Behavior. Cr. 3**

Prereq: PSY 101 or 102. 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)

**653 Organizational Psychology. Cr. 3**

Prereq: PSY 350 or 260, or graduate standing or written consent of instructor. 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)

**656 Psychology of Union-Management Relations. Cr. 3**

Prereq: PSY 350 or graduate standing or consent of instructor. Perceptual and motivational factors influencing behavior of workers, executives, union officers. Psychological factors in strikes: principles relevant to union-management cooperation. (Y)

**657 Applied Research Methods In Union-Management Relations. Cr. 3**

Prereq: one semester of statistics comparable to ECO 510, FBE 540, FBE 609, or PSY 410. 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)

**671 Psycholinguistics. (LIN 671). 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)

**695 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)

**701 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)

**708 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)

**709 Theories of Learning. Cr. 3**

Prereq: admission to graduate program in psychology. Systematic examination of learning theories. (Y)

**710 Conceptual Behavior. Cr. 3**

Prereq: admission to graduate program in psychology; PSY 609 or written consent of instructor. History, theory and recent research in the area of concept development and concept utilization. (I)

**711 Advanced Comparative Psychology. Cr. 3**

Prereq: admission to graduate program in psychology or consent of instructor. Specific problem; role of behavior in evolution, behavior genetics, sensory capacities, learning capacities, sexual behavior, parental and filial behavior, social behavior, the significance of primate social behavior for human evolution. (B)

**712 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)

**715 Quantitative Methods in Psychology I. Cr. 4**

Prereq: PSY 410 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)

**716 Quantitative Methods in Psychology II. Cr. 4**

Prereq: PSY 715. Advanced analysis of variance and selected statistical techniques; introduction to multivariate analyses for psychologists. Analysis of covariance, hierarchical designs and Latin Square designs used in psychological research. Multiple regression, partial correlation, factor analysis, psychometric theory, and psychological measurement. (W)

**718 Research Design and Methodology. Cr. 3**

Prereq: PSY 716 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)

**719 (ANA 719) Neuroscience Survey. (I M 719) (PHC 719)(BIO 719)(PSL 719). Cr. 3**

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)

**720 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)

**721 Psychological Assessment II. Cr. 4**

Prereq: PSY 720. 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)

**723 Practicum in Clinical Procedures. Cr. 1-6**

Prereq: consent of director of clinical psychology training program. 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)

**724 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)

**725 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)

**730 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)

**733 Clinical Neuropsychology. Cr. 3**

Prereq: PSY 712 and consent of instructor. History of the development of clinical neuropsychology. Current perspectives of theory and empirical foundations of neuropsychological assessment. (F,W)

**735 Experimental Psychodynamics I. Cr. 3**

Prereq: PSY 730 or consent of instructor. Experimental psychopathology: research on the mechanisms and genesis of psychological disorders. Implications for clinical practice. (Y)

**737 Therapeutic Interventions I: Introduction and Theories. Cr. 4**

Prereq: PSY 730 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)

**738 Therapeutic Interventions II: Advanced Applications and Innovations. Cr. 4**

Prereq: PSY 737. Introduction to child and family therapy techniques; therapeutic interventions with special emphasis on covert sensitization; systematic desensitization; implosion; cognitive restructuring. (W)

**740 Introduction to Life-Span Developmental Psychology. Cr. 3-4**

Prereq: admission to graduate program in psychology or written consent of instructor. Theory, methods and selected content areas; cognitive and social development as they relate to the entire life cycle. (T)

**741 M.A. Seminar: Contemporary Issues in Human Development. Cr. 3**

Prereq: twelve graduate credits. Required of all M.A. students in human development. Integrative seminar in current theoretical, empirical, and applied issues in developmental psychology. (I)

**743 Early Human Development. Cr. 3**

Prereq: PSY 740 or written consent of instructor. Seminar on infancy and early child development; achievement of self-regulatory processes; comparative studies. (I)

**744 Development of Intelligence. Cr. 3**

Prereq: PSY 740 or consent of instructor. Piaget's theory of intellectual development from infancy through adolescence and review of relevant research. (I)

**745 Psychology of Social Development. Cr. 3**

Prereq: PSY 740 or consent of instructor. Recent perspectives on the psychological and environmental factors influencing social development; attention to ethological and ecological factors. (I)

**746 Developmental Psychology of Adolescence. Cr. 3**

Prereq: PSY 740 or written consent of instructor. Functional interpretations of physiological, psychological and social changes of adolescence. Biological and anthropological perspectives on sex roles. (I)

**747 Research Strategies for Developmental Psychology. Cr. 3**

Prereq: PSY 716 and 740 or consent of instructor. Methodology in longitudinal, cross-sectional and sequential research on developmental processes, appropriate statistics and practical problems. (Y)

**748 Psychological Development in the Adult Years. Cr. 3**

Prereq: PSY 740 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)

**749 Developmental Psychology of Later Life. Cr. 3**

Prereq: PSY 740 or written 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)

**750 Research Methods in Industrial Psychology. Cr. 3**

Prereq: PSY 715, 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)

**751 Theory and Research on Criterion Development and Performance Evaluation. Cr. 3**

Prereq: admission to doctoral program in psychology or consent of instructor; prereq. or coreq: PSY 716 and 750. Criteria of job performance: nature and kinds of criteria, performance ratings. Problems of collecting reliable criterion data; need for multiple criteria on most jobs; techniques for improving criteria. (Y)

**752 Theory and Research in Selection and Placement. Cr. 3**

Prereq: PSY 750 and 751, admission to doctoral program in psychology or consent of instructor. Principles in development of selection procedures for industry, problems in matching of human characteristics and job requirements; methods of determining reliability and validity. (Y)

**755 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)

**756 Theory and Research on Leadership and Executive Development. Cr. 3**

Prereq: PSY 750; admission to doctoral program in psychology or consent of instructor. Selected leadership research studies; theories relating to leadership; principles of training and development. (Y)

**757 Theory and Research on Industrial Motivation and Morale. Cr. 3**

Prereq: PSY 750 and 762; 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)

**758 Theory and Research on Organizational Change and Development. Cr. 3**

Prereq: PSY 750, 755; or written 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)

**761 Research Seminar in Social Psychology. Cr. 3**

Prereq: PSY 715 and 762. Research problems and methodology in social psychology, touching on field research, laboratory research, and attitude measurement techniques. (I)

**762 Social Psychology: Research and Theory. Cr. 3**

Prereq: PSY 260 or equiv. Graduate-level introduction to the major theoretical and research areas of social psychology; current issues and research. (Y)

**763 Group Processes. Cr. 3**

Prereq: PSY 762 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)

**767 Attitude Theory and Attitude Change. Cr. 3**

Prereq: PSY 762 or equiv. or consent of instructor. Attitude theory and attitude change, interpersonal perception and interpersonal attraction, social motivation, and conformity processes. (I)

**768 Interpersonal Processes and the Environment. Cr. 3**

Prereq: PSY 762 or equiv. Study of environmental influences on interpersonal processes; for example, how the use of space affects interpersonal dynamics. (I)

**769 Personality Dynamics and Interpersonal Processes: Models and Research. Cr. 3**

Prereq: PSY 762 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)

**790 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)

**796 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)

**797 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)

**798 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)

**799 Master's Essay Direction. Cr. 1-3**

Prereq: consent of adviser. Not open to doctoral students. (T)

**806 Advanced Physiological Psychology. Cr. 4**

Prereq: PSY 405 or 505, written consent of instructor. Physiological correlates of behavior. Contemporary literature and techniques used in psycho-physiological research in areas of learning, motivation, perception. (Y)

**807 Psychopharmacology. Cr. 3**

Prereq: PSY 712 or equiv., or consent of instructor. Psychological and biological bases of psychopharmacology; emphasis on preclinical models and development of treatments for psychological disorders. (B)

**808 Seminar in Biochemistry and Behavior. Cr. 3**

Prereq: written consent of instructor. Influence of drugs, hormones, and endogenous chemical processes on behavior; current research in endocrinology, neuroendocrinology and neuropsychopharmacology. (Y)

**815 Multivariate Analysis in Psychology. Cr. 3**

Prereq: PSY 716 or consent of instructor. Factor analysis; centroid and principal axis methods of factoring; orthogonal and oblique factor solutions; factor models of Spearman, Thurstone and Guttman; design of factor experiments. Linear discriminant function. Latent structure analysis. Profile analysis. (Y)

**816 Advanced Experimental Design. Cr. 3**

Prereq: PSY 716 or consent of instructor. Block designs; Latin squares, designs and fractional replications; quasi- and semi-experimental designs; ANCOVA; ANOVA for unbalanced designs; generalizability theory; missing data and outliers; structural models; other current topics. (Y)

**830 Behavioral Medicine and Health Psychology I. Cr. 2**

Prereq: consent of instructor. Three major topics in behavioral approach to health and illness: physical disorders in which psychological and behavioral dysfunctions play a major etiological role; psychological impact of acute and chronic physical illness; health and health behavior. (Y)

**831 Behavioral Medicine and Health Psychology II. Cr. 2**

Prereq: consent of instructor. Continuation of PSY 830. (I)

**833 Advanced Clinical Neuropsychology. Cr. 3**

Prereq: PSY 721 and 733. History, research methodologies and current theories regarding brain-behavior relationships and neurological dysfunction. (Y)

**834 Clinical Neuropsychological Assessment. Cr. 3**

Prereq: PSY 721, 733, 833; 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)

**835 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)

**837 Psychology of Alcohol Abuse and Alcoholism I. Cr. 2-3**

Prereq: admission to psychology graduate program or consent of instructor. Course to be followed by PSY 838. First course in a two-course sequence on psychological approaches to alcoholism and alcohol abuse; includes core material on sociological, psychological and behavioral foundations of alcohol problems, and current research issues. (I)

**838 Psychology of Alcohol Abuse and Alcoholism II. Cr. 2-3**

Prereq: PSY 837. Continuation of PSY 837. Assessment, treatment and prevention of alcohol problems; practical applications and research issues. (I)

**839 Therapeutic Intervention Practicum. Cr. 1-6(Max. 12)**

Prereq: PSY 738. 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)

**840 Current Issues in Developmental Psychology. Cr. 3(Max. 9)**

Prereq: written consent of instructor. Integrative seminar in current theoretical and empirical issues. (Y)

**850 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)

**860 Seminar in Experimental Social Psychology. Cr. 3(Max. 9)**

Prereq: PSY 762 or equiv. or consent of instructor. Review and evaluation of the literature on some current topic of research or theoretical concern. (Y)

**868 Seminar in Physiological Psychology. Cr. 3(Max. 9)**

Prereq: written consent of instructor. Critical examination of contemporary research on selected topics concerned with relationships between physiological mechanisms and behavior. (Y)

**872 Seminar in Cognitive Processes. Cr. 3 (Max. 15)**

Prereq: written consent of instructor. Literature on concept formation, problem solving, thinking, aphasia, other language functions. Content varies. (Y)

**874 Seminar in Psychological Measurement and Statistics. Cr. 3(Max. 9)**

Prereq: PSY 716. Topics in measurement and statistical analysis; multidimensional scaling and clustering techniques; time series analysis; analysis of change scores; item response theory and tailored testing; Bayesian analyses; conjoint measurement; other current topics. (I)

**876 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)

**880 Special Topics in Psychology. Cr. 2-8 (Max. 18)**

Prereq: completion of master's level research; written consent of adviser and chairman of graduate committee. Review and evaluation of developments within a special area of psychology. (T)

**881 Theory and Methods of Evaluation in Psychology I. Cr. 3**

Prereq: PSY 715, 716 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)

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

Prereq: consent of adviser. (T)

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

Prereq: consent of doctoral adviser. Offered for S and U grades only. (T)

# ROMANCE LANGUAGES and LITERATURES

Office: 487 Manoogian Hall; 577-3002

Chairperson: Andrea di Tommaso

Academic Services Officer: Mary Hoffiz

## Professors

Vincent C. Almazan (Emeritus), Fernande Bassan (Emerita), Henry N. Bershas (Emeritus), Manuela M. Cirre (Emerita), Jesus Gutierrez, Jacques L. Salvan (Emeritus), E. Burrows Smith (Emeritus), Donald C. Spinelli, Richard Vernier

## Associate Professors

Jorgelina Corbatta, Andrea di Tommaso, Michael J. Giordano, Louise M. Jefferson, Louis Kibler, Charlotte Lemke (Emerita), Sol Rossman, Donald E. Schurknight, Charles Stivale, A. Monica Wagner (Emerita)

## Assistant Professor

Francisco J. Higuero

## Lecturers

Claude Astrachan, Fernanda Capraro, Connie Green, Benjamin Sanders, Julia Urla

## Director of Foreign Language Laboratories

Farouk Alameddine

## 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 14. In addition, the Graduate Record Examination is 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 700 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 192-194 and 20-30, respectively.

## — With a Major in French

**Under Plans A and B:** Candidates are required to take French 730. No more than four credits in course work on the 500 level may be counted toward the degree. Candidates may choose to concentrate in either French literature or French philology. 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 730. No more than four credits in course work on the 500 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 510, 520, 540, 640, and 645; 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 600 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 730. No more than four credits in work on the 500 level may be counted toward the degree. 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 covering all the areas listed, 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 555 and 556 and a minimum of nine credits from Spanish 520, 530, 640 and 751. In addition, a minimum of twelve credits in Hispanic literature at the 600 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 a comprehensive examination covering Spanish language and linguistics, Hispanic culture and Hispanic literature. No oral examination is required.

## Doctor of Philosophy with a Major in Modern Languages

Candidates may fulfill the requirements for the degree of Doctor of Philosophy with a major specialization in one modern language and a minor in another. Major programs are offered in French, and Spanish and minor programs in French, German, Italian, Russian, and Spanish.

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14. The Graduate Record Examination is required 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 700 level or above. 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 32 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

*The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.*

### 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. These courses may NOT count toward a major in the foreign language from which the translations were derived.*

### French in English Translation (FRE)

#### 691 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)

#### 515 Advanced Study of Italian Cinema. Cr. 3(Max. 9)

Material fee as indicated in *Schedule of Classes*. Concentrated study of specific trends or the development of individual directors. Topics to be announced in *Schedule of Classes*. (B)

#### 597 Dante's Divine Comedy. Cr. 3

The poem as a synthesis of medieval culture; its structure, poetic value, and relevance to Western literature. (B)

## Foreign Language Instruction

### FRENCH (FRE)

#### 510 (WI) Advanced Speaking and Writing. Cr. 4

Prereq: FRE 210 or 410 or consent of instructor. Spoken French in the context of French civilization. Readings and writing skills based on contemporary French texts, translations. (B)

#### 520 Phonetics and Diction. Cr. 3

Prereq: FRE 210 or 410 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)

#### 531 Advanced Composition "sur le Motif". Cr. 4

Prereq: FRE 210 or 410. Composition and *explication de textes* utilizing texts related to Provence. Taught only in Provence at the Wayne State University summer program in Gordes, France. (S)

#### 540 Advanced Grammar Review. Cr. 3

Prereq: FRE 210 or 410 or consent of instructor. Advanced French grammar. Translation exercises from English to French; study of appropriate grammar rules. (B)

#### 598 Honors Thesis in French. Cr. 3–6

Prereq: consent of French undergraduate adviser. Open only to Honors students in French. (T)



**640 The Structure of French. Cr. 3**

Prereq: FRE 520 or consent of instructor. Principles of linguistics and their application to French. (B)

**645 French Civilization. Cr. 4**

Prereq: FRE 361 or 362 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)

**646 Civilization "sur le Motif". Cr. 4**

Prereq: FRE 210 or 410. 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 Gordes, France. (S)

**647 The French Mind. Cr. 4**

Prereq: FRE 361, 362. The moral and intellectual values underlying French culture and civilization. Their historical development and their evolution as reflected in the institutions, literature and everyday life of modern France. (B)

**649 Medieval Literature in Modern French. Cr. 4**

Prereq: FRE 361. Study of medieval culture through masterpieces of French and Provençal literatures. Readings in modern French versions. (B)

**651 French Sixteenth Century Literature. Cr. 4**

Prereq: FRE 361. 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)

**663 French Seventeenth Century Literature. Cr. 4**

Prereq: FRE 361 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)

**665 French Eighteenth Century Literature. Cr. 4**

Prereq: FRE 361. 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)

**677 Studies in French Literature. Cr. 4**

Prereq: FRE 361 or 362. 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)

**681 French Nineteenth Century Literature. Cr. 4**

Prereq: FRE 362. 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 movement, school or period. Topics will be announced in the *Schedule of Classes*. (B)

**684 French Twentieth Century Literature. Cr. 4**

Prereq: FRE 362. 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)

**686 Francophone Literatures. Cr. 4 (Max. 8)**

Prereq: FRE 362 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)

**730 Introduction to Romance Philology. (SPA 730)(ITA 730). 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)

**777 Special Studies in French Literature. Cr. 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)

**870 Seminar in Medieval French Language and Literature. Cr. 4 (Max. 8)**

Prereq: FRE 751 or consent of instructor. Specified aspect, movement, author or group of authors, text criticism, edition of texts, philological themes. (I)

**871 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)

**872 Seminar in the French Baroque. 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)

**873 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)

**874 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)

**875 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

**500 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)

**590 Directed Study. Cr. 1-4(Max. 8)**

Prereq: undergrad., consent of adviser and chairperson; grad., consent of chairperson, adviser, and graduate officer. (T)

**796 Research Project. Cr. 1-4(Max. 12)**

Prereq: consent of graduate adviser. (T)

**799 Master's Essay Direction. Cr. 1-3(3 req.)**

Prereq: consent of adviser. (T)

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

Prereq: consent of adviser. (T)

**999 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)

### 661 Dante: Divine Comedy. Cr. 4

Prereq: ITA 360 or consent of instructor. A close reading of Dante's *Commedia*, with attention to sources, background, and interpretation. (B)

### 668 Studies in Renaissance Literature. Cr. 4(Max. 12)

Prereq: ITA 360 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)

### 679 Studies in the Italian Theatre. Cr. 4(Max. 12)

Prereq: ITA 360 and 361 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)

### 683 Studies in Modern Italian Poetry. Cr. 4(Max. 12)

Prereq: ITA 361 or consent of instructor. Selected studies of movements, themes, periods or poets. Topics to be announced in *Schedule of Classes*. (B)

### 687 Studies in Modern Italian Fiction. Cr. 4(Max. 12)

Prereq: ITA 361 or consent of instructor. Study of a genre, movement, theme, or period. Topics to be announced in *Schedule of Classes*. (Y)

### 730 (FRE 730) Introduction to Romance Philology. (SPA 730). 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

### 500 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)

### 590 Directed Study. Cr. 1-4(Max. 8)

Prereq: undergrad., consent of adviser and chairperson; grad., consent of adviser, chairperson, and graduate officer. (T)

### 796 Research Project. Cr. 1-4(Max. 12)

Prereq: consent of Italian adviser. (T)

### 799 Master's Essay Direction. Cr. 1-3(3 req.)

Prereq: consent of Italian adviser. (T)

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

Prereq: consent of adviser. (T)

## SPANISH (SPA)

### 510 (WI) Advanced Composition. Cr. 3

Prereq: SPA 310 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)

### 520 Spanish Phonetics. Cr. 3

Prereq: SPA 310 or consent of instructor. A systematic study of Spanish sounds; intensive drilling in accurate pronunciation. (B)

### 530 Advanced Grammar and Stylistics. Cr. 3

Prereq: SPA 510 or placement. Intensive study of grammar and syntax. Translation of literary texts into Spanish. Free composition and conversation. Conducted in Spanish. (B)

### 555 Spanish Culture and Its Tradition. Cr. 3

Prereq: SPA 361 or 362. Spain's cultural history: painting, sculpture, architecture and music, through films, records, newspapers, and the text. (B)

### 556 Spanish American Cultures and their Traditions. (CBS 556). Cr. 3

Prereq: SPA 361 or 362. 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)

### 640 The Structure of Spanish. Cr. 3

Prereq: SPA 520 or consent of instructor. Principles of linguistics and their application to Spanish. (B)

### 641 Spanish Medieval Literature: Origins to 1500. Cr. 4

Prereq: SPA 361 or 362 or consent of instructor. Main currents and masterworks of Spanish literature from its origins to 1500. (Formerly SPA 650.) (B)

### 644 Spanish Literature of the Eighteenth Century. Cr. 4

Prereq: SPA 361 or 362. Literature of the Spanish Enlightenment; major works and literary trends and movements in the Spanish eighteenth century up to Romanticism. (Formerly SPA 652.) (B)

### 645 Spanish Romanticism. Cr. 4

Prereq: SPA 361 or 362. Origins and development of Romanticism in Spain: theatre, poetry, costumbrismo, and novel. (Formerly SPA 652.) (B)

### 647 The Spanish Novel of the Twentieth Century. Cr. 4

Prereq: SPA 361 or 362. Novelists of the Generation of 1898, and representative authors before and after the Civil War; includes such trends as *Trematismo*, *Social Realism*, and the contemporary experimental novel. (Formerly SPA 693.) (B)

### 656 Cervantes. Cr. 4

Prereq: SPA 361 or 362. A detailed study of *Don Quijote*. Other short works of Cervantes. (B)

### 657 The Comedia. Cr. 4

Prereq: SPA 361 or 362. Analysis of representative plays of Lope de Vega, Ruiz de Alarcón, Tirso de Molina, Calderón, and other dramatists of the Golden Age. (B)

### 659 Genres and Topics in Peninsular Spanish Literature. Cr. 4

Prereq: SPA 361 or 362. Topics such as modern Spanish theatre, Generation of 1898, to be announced in *Schedule of Classes*. (B)

### 660 Spanish American Colonial Literature. Cr. 4

Prereq: SPA 361, 362 or 363. 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)

### 661 The Spanish American Novel I. Cr. 4

Prereq: SPA 361, 362 or 363. Origins and development of the novel in Spanish America, beginning with *El periquillo sarniento*, through the modernist period and up to the novel *Criollista*. (Formerly SPA 686.) (B)

### 663 Spanish American Poetry. Cr. 4

Prereq: SPA 361 or 362 or 363. Major poets and their texts from the period of Independence through the early stages of Modernism, Modernism and Vanguard, to contemporary poetry. (B)

### 669 Genres and Topics in Spanish American Literature. Cr. 4

Prereq: SPA 361, 362 or 363. Topics in the literature of Latin America, such as the short story or theatre, to be announced in *Schedule of Classes*. (B)

**730 (FRE 730) Introduction to Romance Philology.**  
(ITA 730). 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)

**751 History of the Spanish Language. Cr. 3**

Prereq: SPA 520 or consent of graduate adviser. Origins, development and linguistic status of the Spanish language in Spain and Spanish America. (B)

**777 Special Studies in Spanish Literature. Cr. 4 (Max. 12)**

Prereq: minimum of eight credits in 600-level Spanish Literature courses. Study of the works of an outstanding writer, a literary genre, or literary trends. (F,W)

**842 Seminar in Hispanic Linguistics. Cr. 4 (Max. 12)**

Seminar topics will vary according to the principal divisions of Spanish linguistics: phonology, morphology, lexicography, syntax, and dialectology. Topics to be announced in *Schedule of Classes*. (I)

**851 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)

**853 Seminar in Spanish Literature of the Eighteenth and Nineteenth Centuries. Cr. 4 (Max. 8)**

Prereq: graduate major or consent of instructor. Topics to be announced in *Schedule of Classes*. (I)

**855 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)

**861 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

**500 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)

**590 Directed Study. Cr. 1-4 (Max. 8)**

Prereq: undergrad., consent of adviser and chairperson; grad., consent of adviser, chairperson, and graduate officer. (T)

**796 Research Project. Cr. 1-4 (Max. 12)**

Prereq: consent of Spanish adviser. (T)

**799 Master's Essay Direction. Cr. 1-3 (3 req.)**

Prereq: consent of adviser. (T)

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

Prereq: consent of adviser. (T)

**999 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: David W. Britt

### Professors

Joseph L. Albin (Emeritus), David W. Britt, J. Ross Eshleman, Mel J. Ravitz (Emeritus), Mary C. Sengstock, Steven Stack, Leon H. Warshay

### Associate Professors

Clifford J. Clarke, Edmund G. Doherty, Thomas J. Duggan, Janet R. Hankin, Anne Rawls, Mary Jane Van Meter

### Assistant Professors

Augustine Kposowa (Visiting), Leon Wilson

### Lecturers

R. John Kinkel, David Maines

### Adjunct Professors

William Hoffman, Michael Martin

### Adjunct Assistant Professor

Barbara Hirshorn, Dorothy Kispert, Elizabeth Olson, Rosalie Young

### Joint Appointment, Institute of Gerontology

Elizabeth Chapleaki (Lecturer), Donald Gelfand (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 192-194 and 20-30, 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 14. In addition, applicants to the sociology program must satisfy the criteria below. Applications are considered throughout the year; all stages and materials in the application process must be completed at least eight weeks before the beginning of the term for which admission is sought. 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 for Graduate 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 for Graduate Admissions. (3) Letters of recommendation from three endorsers, at least two of whom are in academic occupations. The letters should be mailed to

the Director of Graduate Programs, Department of Sociology. (4) Both the aptitude and advanced (sociology) portions of the Graduate Record Examination are recommended for all applicants.

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. The following courses, or their equivalents, must have been taken before the student can be considered for admission: Sociology 200, 410, 420, 405 (or 605 or 606).

**Candidacy** must be established by the time fifteen credits have been earned.

**DEGREE REQUIREMENTS:** All students are required to complete Sociology 605 or 606, 628, 701 (Proseminar), 720, and to demonstrate computer competence.

The Master of Arts degree with a major in Sociology is offered under the following options:

*PLAN A requires thirty-two credits in course work including:*

— a thesis (SOC 899, eight credits); twenty-four credits in sociology and related fields. A final oral examination is required.

*PLAN B requires thirty-two credits in course work including:*

— an essay (SOC 799, three credits); twenty-nine credits in sociology and related fields. 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), in-depth training in specific urban issues, 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 and urban policy studies 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-six credits are required. Required master's courses include Sociology 658, 659 or 721, 701 (Proseminar), 700, 605 or 606, 628, 720, 799, and three specialization courses in one area. 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 14. In addition, applicants to this program must satisfy the following criteria. Applications are considered throughout the year. All stages and materials in the application process must be completed at least eight weeks before the start of the term for which admission is sought. 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 420, and 405 (or 605 or 606).

Additionally, both the aptitude and advanced (sociology) portions of the Graduate Record Examination are recommended.

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. 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. All doctoral students in sociology must complete the following prerequisite courses: Sociology 605 or 606, 628, 701 (Proseminar), 720, 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: the remaining course in the SOC 606-606 sequence, SOC 705 or 806, one advanced methods/statistics course. Qualifying examinations for doctoral applicants will cover three of the major areas in sociology: one of these must be in methodology and statistics; one must be in sociological and theory; the remaining examination is in an area of the student's specialization. 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 32 of this bulletin.*

A limited number of assistantships are available each year. Awards of assistantships are normally made on or about April 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)

The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.

### 501 Selected Sociological Topics. Cr. 1–3

Topics to be announced in *Schedule of Classes*. (I)

### 536 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)

### 540 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)

### 541 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)

### 542 Cross-Cultural and Ethnic Perspectives on the Family. Cr. 3

Prereq: SOC 340. 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)

### 545 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)

### 546 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)

### 550 Urban and Metropolitan Living. (U P 521). Cr. 3

Examination of the development and organization of urban living as it emerged from village to city to metropolitan regions. Consideration given to such topics as the causes of urbanization and its consequences for the ecological and social structure of the city, intergroup relations, crime and poverty in the city. (Y)

### 554 (ANT 506) Urban Anthropology. Cr. 3

Prereq: ANT 210 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)

### 555 Collective Behavior: Masses, Mobs, and Social Realities. Cr. 3

Analysis of the change process through efforts of organized groups, crowds, mobs, riots, social reform efforts, revolutions. Examination of forms of social contagion including fads, rumors, manias. Emphasis on contemporary social movements. (I)

### 557 Race Relations in Urban Society. (AFS 557). 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)

### 560 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)

### 570 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)

### 576 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)

### 581 Law in Human Society. (CRJ 581). 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)

### 587 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)

### 588 Family Violence: Intervention. (S W 588). Cr. 1

Prereq. or coreq: SOC 587. Open to PACT students; others by consent of instructor. Application of theory and intervention techniques in the family experience of maltreatment. (Y)

### 605 Sociological Theory Before 1920. Cr. 3

Prereq: SOC 200 or consent of instructor. Sociological theorists before 1920, their thought and the historical context in which such thought developed. (Y)

### 606 Sociological Theory Since 1920. Cr. 3

Prereq: SOC 200 or consent of instructor. Historical and Theoretical analysis of sociological thought in the present century. Current trends in sociological theory. (Y)

### 608 (PHI 523) Philosophy of Science. Cr. 4

Prereq: PHI 185 or PHI 186 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)

### 628 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)

### 629 Advanced Social Statistics. Cr. 4

Prereq: SOC 628. 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)

### 640 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)

**643 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)

**644 Urban Family Intervention. (S W 644). Cr. 1**

Prereq. or coreq: SOC 643. 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)

**646 Family-Based Intervention Techniques. (S W 646). 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)

**658 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)

**659 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)

**677 Sociology of Institutional Care. Cr. 3**

Converging issues of theory, research and practice in general hospitals, mental hospitals, and nursing homes. Ecology of institutions and the adaptation of individuals within them. (I)

**686 Organized Crime: Its History and Social Structure. (CRJ 686). Cr. 3**

Prereq: SOC 382. 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)

**694 (ANT 618) Theory and Problems of Emergent Countries. Cr. 3(Max. 6)**

Prereq: SOC 200 or ANT 210. Underdeveloped and developing countries. Emergent nationalism and socio-cultural factors affecting change. Cultural, demographic, institutional, technological aspects. (I)

**700 Internship In Applied Sociology. Cr. 3**

Prereq: SOC 658 and 720. Guided internship with Detroit metropolitan private and public organizations arranged and supervised through the Program in Applied Sociology and Urban Policy. (Y)

**701 Special Topics. Cr. 2-6**

Topics to be announced in *Schedule of Classes*. (Y)

**720 Advanced Survey of Approaches and Techniques of Social Research. Cr. 3**

Prereq: SOC 628. 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)

**721 Social Evaluation Research Methodology. Cr. 3**

Prereq: SOC 525, 720, or equiv., or consent of instructor. Approaches to the evaluation of social programs, reforms and policies. Topics

include: needs assessments, social impact analysis, problems of measurement, relationship of quantitative and qualitative evaluation techniques, and cost benefit analysis. (B)

**722 (U S 722) Seminar in Survey Research Methods. (P S 762). 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)

**732 (JDS 808) Law, Race and Racism in American History. (AFS 732). 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)

**750 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)

**785 Seminar In Applied Gerontology. (C M 785)(S W 885). 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 881. 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)

**790 Directed Study. Cr. 1-6(Max. 6)**

Prereq: written consent of adviser and graduate officer. Not open to doctoral students. (T)

**795 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)

**799 Master's Essay. Cr. 1-3**

Prereq: consent of adviser. (T)

**806 Seminar in Sociological Theory. Cr. 3**

(I)

**808 Language, Interaction, and Social Theory. Cr. 4**

Examination of the writing of several major modern social theorists and of the contrast between twentieth century American and European social theory. (B)

**840 Seminar in Sociology of the Family. Cr. 3**

Prereq: graduate standing in sociology or prior coursework in marriage/family area. (I)

**850 Seminar: Covariance Structure Models. Cr. 3**

Prereq: graduate standing. Theory and methods of testing models of covariance structure; mathematical model specification; model modification. (Y)

**899 Master's Thesis. Cr. 1-8(8 req.)**

Prereq: consent of adviser. (T)

**990 Directed Study. Cr. 2-6(Max. 6)**

Prereq: consent of adviser and graduate officer. Open only to doctoral students. (T)

**999 Doctoral Dissertation Research and Directed Study. Cr. 1-16**

Prereq: consent of doctoral adviser. Offered for S and U grades only. (T)

# **LIBRARY SCIENCE PROGRAM**

**DEAN: Peter Spyers-Duran**

# FOREWORD

## History

The Library 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. The Library Science Program also offers a certificate program in archival administration, in conjunction with the History Department of the College of Liberal Arts.

The Library Science Program is under the administrative jurisdiction of the Dean of University Libraries and Library Science, with degrees granted by the Graduate School of the University.

## The Information Profession

The field of library and information service is experiencing dramatic growth and change and for those entering the information field, the future holds challenging prospects. Today approximately 100,000 libraries in the United States employ 140,000 professionals. Additionally, some individuals use library and research skills in allied areas of information service outside the traditional library setting. In the 1990s, those with appropriate credentials will have a significantly wider choice of opportunities to apply their skills, within traditional and non-traditional libraries and information centers including business, law, medicine, publishing, government, archives and museums, communications and media, engineering and academic environments. Most important among such credentials is the Master of Science in Library Science (M.S.L.S.) degree, internationally recognized as the first professional degree in the field and accredited by the American Library Association (ALA).

The Library Science Program at Wayne State University offers a quality graduate curriculum that prepares students for professional positions in a variety of traditional and non-traditional settings in the United States and abroad.

## Accreditation

The Library Science Program first received accreditation for its master's degree by the American Library Association in 1967; the M.S.L.S. program's most recent accreditation was granted by the Committee on Accreditation of the ALA in 1988.

## Goals and Objectives

The mission of the Library Science Program is to educate qualified men and women to assume professional responsibilities as librarians/information specialists in an ever-changing society. The goals of the Library Science Program are:

- a. To provide students with an educational program based on a philosophical and conceptual framework that will furnish a basic level of skill required to meet the information needs of modern society;
- b. To educate students to become library and information professionals who upon graduation are prepared to assume positions of service and leadership in the field;
- c. To provide lifelong learning experiences and continuing education opportunities for library and information management professionals; and
- d. To engage in research and assume leadership in professional activities and organizations.

To achieve these goals, the Program sets the following general objectives for its students:

1. To evaluate the library and the information profession in their historical, social, economic, technological, educational, and political dimensions;
2. To identify the library's distinctive role among the communication agencies which share responsibility for the preservation and dissemination of the human record;
3. To identify the common properties of information that exist throughout disciplines as they relate to library and information service;
4. To identify and examine the concepts, structure, and organization of knowledge;
5. To select, acquire, organize, store, retrieve, analyze, and disseminate information and materials;
6. To apply the concept of information transfer to facilitate access to recorded knowledge;
7. To demonstrate an understanding of the distinctiveness of each library/information center as a component of a specific environment;
8. To develop sensitivity to the opportunity and responsibility of library/information service in an urban, multicultural setting.
9. To identify the needs of individuals and groups for library/information services, design plans, and implement programs that respond to identified needs;
10. To identify, evaluate and utilize current and emerging technologies in the organization and retrieval of information;
11. To apply principles of effective management to the operation of library/information centers and systems;
12. To examine, assess, and apply research in professional practice and to the solution of library/information problems;
13. To articulate a personal philosophy of ethics and professional responsibilities;
14. To recognize the necessity for continuing involvement in professional education, in professional organizations, and in self-evaluation.



## Facilities

**University Libraries:** Wayne State University has five libraries with a total of well over two million books and twenty-three 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 Science Program.

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 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 Science Program has its own 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 Purdy/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 science students also have access to the computing facilities located in the Media Center of the Purdy Library.

## Graduate Degrees and Certificates

*MASTER OF SCIENCE in Library Science*

*SPECIALIST CERTIFICATE in Librarianship*

*GRADUATE CERTIFICATE in Archival Administration*

## FACULTY

*Office:* 106 Kresge Library; (313) 577-1825; Fax: (313) 577-4172  
*Dean of University Libraries and Library Science:* Peter Spyers-Duran  
*Director of Library Science Program:* Joseph J. Mika

### *Professors*

Robert Booth (Emerita), Genevieve M. Casey (Emerita), Margaret Grazier (Emerita), Michael Keresztesi (Emeritus), Philip Mason, Joseph J. Mika, Edith Phillips (Emerita), Vern Pings (Emeritus), Peter Spyers-Duran, Phyllis J. Van Orden

### *Associate Professors*

Betty Maurstad (Emerita), Bruce Shuman

### *Assistant Professors*

Kenneth A. Cory, Carole McCollough, Bor-sheng Tsai

### *Lecturers*

Judith Field, Johan Koren, Thomas P. McGinn

### *Adjunct and Cooperating Faculty*

Roger Ashley, Director, Andover High School Media Center; Donald Bissett, Professor, College of Education; Shirley Black, Instructional Services Librarian, University of Detroit-Mercy; Francis Buckley, Associate Director for Public Services, Detroit Public Library; John Childs, Professor, College of Education; George Cunha, Adjunct Professor, College of Library and Information Sciences, University of Kentucky; Cullum Davis, Professor of Oral History, Sangamon State University; Anaclara Evans, Technical Services Librarian, University Libraries; Suzanne Frankie, Dean, University Library, Oakland University; George Grimes, Professor, Media and Professional Development Services, Eastern Michigan University; Paulette Groen, Manager, Library Services, Society of Manufacturing Engineers; Maxine Hillman, Adjunct Professor, College of Education; Marianne Hipp, Head of Technical Services/Cataloging, Lawrence Technological University; David A. Hopper, Manager I, College of Education; Stephen James, Director of Statewide Programs, Library of Michigan; Natalie S. King, Assistant Director, Shiffman Medical Library; Margery Long, Associate Professor, Archives; Sandra Martin, Director, Harper Hospital Library; James Matarazzo, Professor, Simmons College; Rush Miller, Dean, Libraries and Learning Resources, Bowling Green State University; Jane Morgan, Director (retired), Detroit Public Library; Charles Morrissey, Director, Oral History Projects, Baylor College of Medicine; Blaine Morrow, Coordinator, Automated Services, Grosse Pointe Public Library; James Moseley, Program Coordinator III, College of Medicine; Genevieve Oldani-Caruso, Librarian II, Detroit Public Library; Freda Richards, Librarian/Media Specialist, Groves High School; Rita Richey, Associate Professor, College of Education; R. Craig Roney, Associate Professor, College of Education; Faith Ross, Director, Shiffman Medical Library; Peter Sanders, Professor, College of Education; Kathleen Schmelling, Archivist I, Reuther Library and Archives; Ruth Schneider, Director, Department of Curriculum and Instruction, Bowling Green State University; Janice Selberg, Database Coordinator, Neef Law Library; Albert Stahl, Associate Professor, College of Education; Jacqueline Tilles, Associate Professor, College of Education

# DEGREE and CERTIFICATE PROGRAMS

## MASTER OF SCIENCE IN LIBRARY SCIENCE

The master's degree program in library science (MSLS) 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 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 14. In addition, Master of Science in Library 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 2.6 or better (C = 2.0). (Qualified admission may be authorized upon review if the applicant's h.p.a. is below 2.6);
3. Submit a typewritten statement reflecting relevant personal and academic background and experience.
4. Interview with a faculty adviser in the Library Science Program if the student's undergraduate h.p.a. is lower than 2.6.

**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: Graduate Admissions Office, 102 Administrative Services Building, Wayne State University, Detroit, Michigan 48202. Additionally, applicants should request that transcripts of all undergraduate work be sent to the Graduate Admissions Office. If the student has been previously admitted to the Graduate School, he/she should complete and file a Change of Major Form with the Library Science Program.

### Degree Requirements

The Master of Science in Library 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-four credits in the library science professional core (including L S 799), and twelve credits in elective professional courses. A maximum of six credits in courses outside of library science may be accepted as cognates.

### Professional Core (Twenty-four Credits)

credits

L S 601—Introduction to the Information Profession .....	3
L S 611—Reference & Bibliographic Database Services .....	3
L S 616—Electronic Access to Information .....	3
L S 621—Technical Services in Libraries .....	3
L S 781—Information Programming and Processing .....	3
L S 799—Master's Essay Direction and Research Methods .....	3

### Two of the following bibliography courses:

L S 711—Subject Reference and Bibliography: Humanities .....	3
L S 712—Subject Reference and Bibliography: Science and Technology .....	3
L S 713—Subject Reference and Bibliography: Social Sciences .....	3

### Professional Concentration (Twelve Credits)

A *Plan of Work* is a formal statement of the goals and prescribed courses of the student's academic program. The library 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 library in which the student intends to work: i.e., public libraries, academic libraries, archives, law libraries, school libraries, and medical libraries; or to special library 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 LIBRARIANSHIP

The Specialist Program in Librarianship is a graduate 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—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 services;
3. advance and extend competencies in areas of specialization begun during the first professional degree program (M.S.L.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 library (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 14. In addition, applicants to the Specialist Program in Librarianship must satisfy the following criteria:

1. Possess a master's degree in librarianship;
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 Science Program faculty member.

### Certificate Requirements

Candidates for the Specialist Certificate in Librarianship must complete thirty credits of 600-800 level course work providing the appropriate degree of concentration relevant to the student's career goals. Students in graduate 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.

### 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 Archival Certificate Program 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. Credits earned in this program can be applied toward completion of the Master of Library Science in Library Science (M.S.L.S.) degree; however, a student working on a concurrent M.S.L.S. degree and Archival Certificate will be required to complete thirty-nine credits.

**Admission:** See requirements for admission to the Master of Science in Library Science, page 282.

### 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
LS 678 — Records Management .....	3
LS 771 — (HIS 784) Introduction to Archival Methods I .....	3
LS 772 — (HIS 785) Introduction to Archival Methods II .....	3
LS 773 — (HIS 789) Conservation and Administration of Photograph Collections .....	3
LS 775 — Introduction to Archival and Library Conservation (HIS 781) .....	3
LS 777 — (HIS 786) Oral History: A Methodology for Research (ANT 636) .....	3
LS 781 — Information Programming and Processing .....	3

# FINANCIAL AID, AWARDS, and ACTIVITIES

### Financial Aid

*For a list of sources of graduate financial aid, including departmental and institutional awards, see the section on Graduate Financial Assistance, beginning on page 32. Information below pertains to the Library Science Program.*

Each year library 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, graduate teaching and research assistants, students holding other fellowships, internships, traineeships or scholarships, 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 Science Program, and/or the University Office of Scholarships and Financial Aids.

### Internships and Assistantships

The University Libraries support internships offering employment to library science students. The internship program provides students with an excellent opportunity to gain practical skills while supplementing their income. Students are encouraged to take advantage of this learning opportunity. 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 Shiffman Medical Library, the Neef Law Library, and the Technical Services Department of the University Libraries.

In addition to these placements, several area libraries offer paid and valuable pre-professional experiences. For a list of current opportunities, consult the Director of the Library Science Program.

*Library Science Program Research Assistantship:* award of \$3000 per year; required employment is twenty hours per week.

*Michigan Bell Telephone Graduate Research Assistantship:* award of \$9000 per year and tuition reimbursement; required employment is twenty hours per week.

*University Libraries Internships:* award of \$3000 per year; required employment is twenty hours per week.

*University Libraries Graduate Research Assistantship:* award of \$9400 per year plus tuition; required employment is twenty hours per week.

*W.S.U. Graduate School Research Assistantship in Library Science:* award of \$8000 per year plus tuition; required employment is twenty hours per week.

### Library Employment Opportunities

In order to broaden students' understanding of various aspects of library and archival professions, the University offers opportunities for students to work on an hourly basis (up to twenty hours per week during the regular academic year) and full time (forty hours per week during the summer) in the University Libraries and at the Archives of

Labor and Urban Affairs. Part-time employment is available also in other institutions in the metropolitan Detroit area.

Graduate Assistantships are also available for archival students in the University Archives. These assistantships range from \$4,300 to \$8,000 per year, with some offering partial tuition scholarships.

## 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 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 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 Aid, beginning on page 32 of this bulletin. The following awards pertain to the Library Science Program; information on these awards and other sources of financial aid is available from the Director of the Library Science Program:*

*Dean'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 library and information environments. A minimum 3.75 undergraduate h.p.a. is required.

*Distinguished Alumnus/Alumna Award:* presented to a Library Science Program graduate who has made outstanding contributions to the library and information science field.

*Gloria A. Francis Memorial Endowed Scholarship:* award of \$500, based on academic qualifications, character, and financial need; given in honor of the former Rare Books Librarian of the Detroit Public Library.

*Graduate Professional School Scholarship:* award of variable amount, offered to students admitted to or enrolled in the Library Science Program.

*Patricia B. Knapp Award:* award of \$100, given annually to the graduating M.S.L.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 \$500, 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.

*Charles Samarjian Memorial Scholarship:* partial scholarship which recognizes scholastic achievement, qualities of character and leadership, financial need, and which encourages continued academic progress.

*Library Science Alumni Scholarships:* award of \$350–\$400, available to library 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 Science Program office.

*H.W. Wilson Scholarships:* partial scholarships of variable amount; award based on academic qualifications, character, and financial need.

*Women of Wayne Alumni Scholarships:* award of variable amount, offered to part-time female students enrolled in the University.

*Writing Awards:* awards consisting of tuition scholarships and certificates of merit are conferred in three categories: best bibliographic paper, best narrative paper, and best multimedia (computer or audiovisual) submission.

## STUDENT ACTIVITIES

*Library Science Student Association:* is recognized by the University as an organization of students in the Library 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.

*Library Science Alumni Association:* Library Science graduates have established the Library 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 (L S)

The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.

**601 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)

**611 Reference and Bibliographic Database Services. 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 international communication skills to increase effectiveness in response to patrons' information needs. Core course. (T)

**616 Electronic Access to Information. Cr. 3**

Material fee as indicated in *Schedule of Classes*. 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. (T)

**621 Technical Services In Libraries. Cr. 3**

Material fee as indicated in *Schedule of Classes*. Survey of objectives and methods of acquisition, classification, cataloging, preparation of books and related materials in libraries. Core course. (T)

**636 (I T 511) Educational Technology. Cr. 2**

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)

**637 (I T 512) Instructional Materials Workshop.  
Cr. 1–3(Max. 3)**

Design and development of audiovisual materials for use in educational, industrial, and/or human services programs. Students produce an audiovisual presentation. (Y)

**638 (I T 510) Using Audiovisual Methods, Materials and  
Equipment. Cr. 2**

Survey of educational media, methods, and materials. Principles of systematic instructional design applied to the design of group-based and individualized instructional materials. Operation of common audiovisual equipment; review of innovative instructional practices; computer applications and learning games. (Y)

**651 (ELE 722) Survey and Analysis of Literature for  
Younger Children. Cr. 3**

Intensive examination of books appropriate for preprimary and primary children. Analysis of the literary and extraliterary factors that affect the young child's experiences with fiction and nonfiction. (F,S)

**652 (ELE 724) Survey and Analysis of Literature for Older  
Children. 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)

**653 (EED 631) 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)

**655 (ELE 728) Storytelling. Cr. 3**

Prereq: L S 651. 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)

**672 Foundations of African-American Bibliography and  
Resources. Cr. 3**

Study and investigation of the literature of African-Americans with special attention focused on problems of publishing, bibliographic access, collection development, research in the field, general and special reference materials, and research strategies. (W)

**678 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. (W)

**704 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)

**705 Public Libraries. Cr. 3**

Development of concepts introduced in L S 601; history, organization and function of public libraries; development of skills necessary to public librarianship. (Y)

**711 Subject Reference and Bibliography: Humanities. Cr. 3**

Prereq: L S 611, 616. Material fee as indicated in *Schedule of Classes*. 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. (T)

**712 Subject Reference and Bibliography: Science and  
Technology. Cr. 3**

Prereq: L S 611, 616. 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)

**713 Subject Reference and Bibliography: Social Sciences.  
Cr. 3**

Prereq: L S 611, 616. Material fee as indicated in *Schedule of Classes*. 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. (T)

**725 Programming and Services for Children and Young  
Adults. Cr. 3**

Prereq: nine credits in library science coursework. Principles and procedures for planning, managing and delivery of public library services to children and young adults. (F)

**731 School Library Media Programs. Cr. 3**

Prereq: L S 601, 611. 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)

**734 Collection Development and Selection of Materials.  
Cr. 3**

Prereq: L S 601. 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)

**735 (I T 711) Instructional Design. (H E 754). Cr. 4**

Prereq: I T 611. Principles of instructional design, task and job analysis, hierarchical sequencing, test item construction, and group instructional strategies. Emphasis on design of total courses and self-instructional packages. (Y)

**736 Multi-Media Materials and Services. Cr. 3**

Consideration of media use in various types of libraries by different groups of users; selection criteria for software and hardware and their acquisition and organization. (Y)

**756 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)

**761 Medical Bibliography and Medical Library Administration. Cr. 3**

Prereq: L S 621 and 712. Bibliographic control of the biomedical literature, the biomedical communication complex, the medical community, medical library networks, special problems relevant to medical library administration. (Y)

**765 Traineeship in Medical Librarianship. Cr. 2-4**

Prereq: consent of adviser. For M.S.L.S. candidates specializing in medical librarianship. A one-year full or half-time traineeship in medical librarianship in a cooperating hospital library coincident with the M.S.L.S. program. Includes both theory and competencies intrinsic to medical librarianship. (T)

**769 Professional Field Experience and Seminar. Cr. 2-3**

Prereq: 20 credits in appropriate graduate library science courses and consent of supervising faculty. Planned, on-site experience in a participating library under the direction of a skilled professional librarian and the supervision of a member of the Library Science faculty. Seminars to be arranged. Application for fall term by first day of winter term; for winter term by first day of fall term; for summer term by first day of winter term. Ninety hours required for two credits; 120 hours for three credits. (T)

**771 (HIS 784) Introduction to Archival Methods I. Cr. 3**

Basic training in archival methods. (F)

**772 (HIS 785) Introduction to Archival Methods II. Cr. 3**

Prereq: L S 771. Continuation of L S 771. (W)

**773 (HIS 789) 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)

**775 Introduction to Archival and Library Conservation. (HIS 781). Cr. 3**

Fundamentals of archival and library conservation problems and methods essential for effective preservation management of paper and associated materials. (S)

**777 (HIS 786) Oral History: A Methodology for Research. (ANT 636). Cr. 3**

Techniques of gathering data from individuals for use in research, classroom teaching; historical, cultural or other contexts. (I)

**781 Information Programming and Processing. Cr. 3**

Storage and retrieval problems as approached by conventional and nonconventional methods. Computer applications in libraries. Core course. (T)

**785 Issues in Librarianship. Cr. 1-3(Max. 12)**

Critical analysis of library research, socio-technological trends, implications for the profession. Topics to be announced in *Schedule of Classes*. (I)

**790 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. Material fee as indicated in *Schedule of Classes*. Directed study and individual research under faculty guidance. (T)

**798 Advanced Field Study. Cr. 2-3**

Prereq: written consent of adviser. Open only to Library Science Specialist Program students. Intensive internship in management or operation of a cooperating library or library-related project. (T)

**799 Master's Essay Direction and Research Methods. Cr. 3**

Prereq: L S 601, 611, 616, 621, and written consent of adviser. Role of research in development of the profession. Research methods; analysis and evaluation of research reports. Core course. (T)

**811 Government Information Policies and Resources. Cr. 3**

Prereq: L S 713 or consent of instructor. Material fee as indicated in *Schedule of Classes*. 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. (F)

**812 Legal Information Resources. Cr. 3**

Material fee as indicated in *Schedule of Classes*. 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. (S)

**813 Business and Industry Information Resources. Cr. 3**

Material fee as indicated in *Schedule of Classes*. 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. (W)

**821 Advanced Classification and Cataloging. Cr. 3**

Prereq: L S 621 or consent of instructor. Material fee as indicated in *Schedule of Classes*. 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. (I)

**823 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)

**841 Library Systems and Services. Cr. 1-3(Max. 12)**

Prereq: consent of adviser. Material fee as indicated in *Schedule of Classes*. Current administrative problems affecting library systems and services. Topics to be announced in *Schedule of Classes*. (T)

**853 Advanced Information Programming and Processing. Cr. 3**

Prereq: L S 781. Basic programming and systems analysis for libraries. Examination of data management systems used for the automation of library functions. (W)

**898 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), through its division of Metropolitan Programs and Summer Sessions (MPSS), is principally 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 Sessions.

To accommodate its non-campus-based students, the College operates numerous instructional extension centers throughout the Detroit metropolitan area, as well as 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 non-credit courses, workshops, and special institutes that further knowledge acquisition and skill development for the non-traditional student. A similar opportunity is provided by the Visitor's Program, through which individuals enroll in regular credit courses (on- or off-campus, undergraduate or graduate), dependent on space available, on a non-credit basis at a reduced rate

**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, 6001 Cass Avenue, Detroit, Michigan 48202; telephone: (313) 577-4597.

## DEGREE PROGRAMS

Coursework for the following degree programs offered by other colleges within the University is available through CLL extension services.

*Master of Business Administration (Partial)*

*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 Special Education with*

*Concentration in Gifted Child Education (Partial)*

*Master of Education with a Major in Special Education and*

*Education Specialist Certificate in Special Education*

*(Administration)*

*Master of Education with a Major in Educational Administration*

*(Partial)*

*Ph.D. and Ed.D. with a Major in Curriculum and Instruction*

*Chemical Engineering Graduate Certificate in Hazardous Waste Management*

*Master of Science in Library Science (Partial)*

*Library Science Graduate Certificate in Archival*

*Administration (Partial)*

*Library Science Post-Master's Specialist Certificate for Library/Media Specialists (Partial)*

*Master of Science in Nursing (Partial)*

*Interdisciplinary Graduate Certificate in Gerontology*  
*Interdisciplinary Graduate Certificate in Infant Mental Health*

## COLLEGE DIRECTORY

### OFFICE OF THE DEAN

Dean:  
Robert L. Carter ..... 577-4675  
Director of Academic Services:  
Mary Kay Urick ..... 577-6710

### DIVISION OF METROPOLITAN PROGRAMS AND SUMMER SESSIONS

Associate Dean:  
Ramona Lumpkin ..... 577-4595  
Director, Credit Programming and Summer Sessions  
Donna Sottile ..... 577-4682  
Director, Off-campus Centers:  
Kristopher Krzyzanski ..... 577-4596  
Programming Coordinators:  
Business Administration, Engineering, Fine, Performing and  
Communication Arts, Liberal Arts and Telecourses . . . 577-4682  
Education, Health/Physical Education, Nursing, Pharmacy and Allied  
Health, Social Work, Urban/Labor/Metropolitan Affairs . 577-4616  
Noncredit Programming:  
Registration/Information ..... 577-4665  
Visitor's Program:  
Registration/Information ..... 577-4665  
Personal Computing Centers:  
Southfield ..... 577-3595  
Sterling Heights ..... 577-4451

### DIVISION OF DEGREE PROGRAMS

Associate Dean: Roslyn Schindler ..... 577-4627

### DIVISION OF COMMUNITY EDUCATION

Associate Dean: Sandra E. Alford ..... 577-4590

### ADMINISTRATIVE SERVICES

Business Manager: Yvonne Doolittle ..... 577-6960

### CREDIT REGISTRATION/INFORMATION

Associate Dean: Sandra E. Alford ..... 577-4671

### ACADEMIC ADVISING

Frank Williams ..... 577-4671

### TELECOMMUNICATIONS

Coordinator: Paul Fiedler ..... 577-6966

### SPONSORED PROGRAMS

Director: David Bowen ..... 577-1498

DATA CENTER ..... 577-6851

### MARKETING

Coordinator: Derek Donnellon ..... 577-4597

### DEVELOPMENT

Director: Percy Moore ..... 577-0577

Mailing address for all offices: (Department Name), College of Lifelong Learning, Wayne State University, 6001 Cass Avenue, Detroit, MI. 48202



## Instructional Extension Centers

The College of Lifelong Learning maintains instructional centers at locations throughout the metropolitan area; counseling available by appointment.

Other instructional sites are located throughout southeast Michigan. For current information on center locations, call 577-4671 or consult the University Schedule of Classes.

**BIRMINGHAM CENTER**  
Groves High School  
20500 W. Thirteen Mile  
Birmingham, MI 48010  
Telephone: 642-2661, 577-3605

**SOUTHFIELD CENTER**  
27300 W. Eleven Mile Rd.  
Southfield MI 48034  
Telephone: 358-2104  
577-3592

**EASTSIDE DETROIT CENTER**  
3127 E. Canfield  
Detroit, MI 48207  
Telephone: 577-4701

**NORTHWEST DETROIT CENTER**  
18100 Meyers Road  
Detroit, MI 48235  
Telephone: 577-0613

**HARPER WOODS CENTER**  
Bishop Gallagher High School  
19360 Harper Avenue  
Harper Woods, MI 48225  
Telephone: 577-3590, 881-3590

**NORTHEAST CENTER**  
St. Basil School  
22860 Schroeder  
Eastpointe, MI 48021  
Telephone: 577-3590,  
771-3730

**STERLING HEIGHTS CENTER**  
Heritage Junior High School  
37400 Dodge Park  
Sterling Heights, MI 48077  
Telephone: 577-4470, 978-7881

Other major off-campus locations of Wayne State University programs:

**UNIVERSITY CENTER**  
Macomb Community College  
42450 Garfield  
Mt. Clemens MI 48044  
Telephone: (1) (313) 577-6261;  
(1) 313 263-6712

**UNIVERSITY CENTER**  
Mott Community College  
1401 East Court St.  
Flint, MI 48503  
Telephone: (1) 313 762-0390  
(1) 313 762-0298

**UNIVERSITY CENTER**  
Delta College  
Delta Road  
University Center, MI 48710  
Telephone: (1) (517) 686-9254  
(1) (517) 686-9000

# METROPOLITAN PROGRAMS and SUMMER SESSIONS

*Associate Dean:* Ramona Lumpkin  
*Director of Credit Programming and Summer Sessions:*  
Donna Sottile  
*Director of Off-campus Centers:*  
Kristopher Krzyzanski

## *Program Coordinators*

Robert Erickson, Paul Fiedler, Linda Robertson, Lorraine Serra, William Slater, Cynthia Ward, Keith White

## *Center Managers*

Susan English, W. Kathryn Flack, Jennifer Keas, Lynn Miller-Weitecha, Sharon O'Brien, Barbara Roseboro

## 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 non-credit 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 non-credit 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 14.

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, provided all formal admission procedures have been satisfied.

**Guest students** should complete the Guest Student Application Form and obtain approval for their registration plans from their home institution.

## Advising

Advising services for students in the Division of Metropolitan Programs and Summer Sessions are provided by a CLL academic adviser and the managers of the off-campus centers. Advisers are able to 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 are especially urged to confer with an adviser before registration. Skilled advisers offer assistance with educational problems or degree objectives. For further information or an appointment, contact the CLL Advising Office (577-4671) or the nearest off-campus center. Students who DO have matriculated status in another college of the University should consult with their appropriate college adviser.

## Registration Services and Fees

**Registration** for off-campus classes is held during regular early Mail Registration and Final Registration periods for each semester (see Academic Calendar, page 4). Forms for each registration period are available from: the CLL Registration Office (pick up in person at 6001 Cass Avenue, Detroit, Michigan); all Extension Centers; the main campus Registration Office (2W Joy Student Services Building); or by mail from the CLL Marketing Office (telephone (313) 577-4597).

**Early Registration:** The Mail Registration Schedule Request form is sent to all students who were registered the previous semester (see Mail Registration, page 22).

**Final Registration** takes place at: any of the Extension Centers (except Harper Woods); the CLL Registration Office; or on the main campus (see Final Registration, page 23).

For further information, telephone CLL Registration, 577-4671.

**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 16.)

**The CLL Schedule of Classes**, issued each semester, lists off-campus courses and programs. It may be picked up at the CLL Registration Office and at all Extension Centers; and is also available by mail from the CLL Marketing Office; telephone: (313) 577-4597.

## 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: 577-4682.

**School of Business Administration:** Master of Business Administration courses are offered in Oakland County at the Birmingham and Southfield Centers and in Macomb County at the Sterling Heights Center. School of Business Administration courses in the 600-609 series are open only to students holding matriculated status at Wayne State University. Graduate courses, numbered at the 700 level, are open only to students admitted to the M.B.A. program at Wayne State University

**College of Education:** Master's and doctoral programs are offered at most extension centers. Major emphasis is on graduate courses and degree programs which meet the in-service and specialized needs of professional educators. At the request of local schools or districts, in-service courses and programs are scheduled as needed.

**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 and in Brighton. 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: 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, history and psychology at selected off-campus centers. Liberal arts courses also form part of the interdisciplinary graduate Certificate Programs in Gerontology and Infant Mental Health.

**Library Science Program:** An active off-campus graduate program leads to the Master of Science in Library Science degree, accredited by the American Library Association. Graduate courses leading to the Graduate Specialist Certificate in Librarianship and the Graduate Certificate in Archival Administration are available at selected extension locations including Traverse City, Grand Rapids, and Saginaw.

**College of Nursing:** Courses leading to the Master of Science in Nursing are offered at several locations. Students who have not been admitted to a graduate degree program may register in non-matriculated status pending admission. The College of Nursing offers a Post-Master's Certificate in Nursing Administration. This program, designed for nurses in administrative positions, is offered in selected geographical areas. The College also participates in the interdisciplinary graduate Certificate Programs in Gerontology and Infant Mental Health.

**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 Infant Mental Health.

**College of Urban, Labor, and Metropolitan Affairs:** Introductory and advanced courses are scheduled at most extension centers.

**Television Courses:** Television courses provide a way to earn college credit from a variety of University colleges through courses broadcast on WTVS Channel 56, the College Cable Channel, or The Working 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 Session; times and locales vary each year. Recent programs have been scheduled in West Africa in anthropology, education, nursing, Africana studies, and urban studies. In addition, the Department of Romance Languages, College of Liberal Arts, sponsors an ongoing program in France of intensive immersion in the language and culture; a program in community education has been sponsored

by the College of Education in Spain; and the Department of Biological Sciences, College of Liberal Arts, sponsors a research study of marine life in Bermuda each year.

## Noncredit and Professional Development Programs

The Division of Metropolitan Programs and Summer Sessions offers 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

Under this program, individuals can attend a wide range of selected University courses both on and off campus, provided classroom space is available. No grade or academic credit is earned. Registration for courses may be completed by mail or telephone using MasterCard or Visa credit cards. For specific information and registration, telephone the Visitor's Program: 577-4665.

### PERSONAL COMPUTING COURSES

Personal Computing Centers are located in the CLL Southfield Center (Signature One Building) and in the Sterling Heights Center. These Centers offer noncredit instruction in the use of personal computers. In addition to the standard twelve clock-hour introductory course, and advanced series in Lotus 123, WordPerfect, and dBase, students also have the opportunity to learn specific features of many software packages in a one-day seminar format. New software courses developed by Personal Computing Center instructors include: desktop publishing; mail, merge and macros using WordPerfect; Lotus database; Lotus graphs; and dBase III Plus.

### PROFESSIONAL TRAINING and DEVELOPMENT COURSES

This program specializes in the design of noncredit, 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 services and information, telephone: 577-6693.

### NONCREDIT REGISTRATION SERVICES and FEES

Course fees and refund and transfer policies vary by program. Registration for *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: Room 213, 6001 Cass Avenue, Detroit; telephone: 577-4665. Registration for *Personal Computing courses* takes place at the extension center where the course is held (Southfield Center, 577-3595 or 356-1540; Sterling Heights Center, 577-4451 or 978-8456). For information on and registration for *Professional Training and Development courses*, telephone: 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.

## Center for Telecommunications

*Coordinator:* Paul Fiedler

The College of Lifelong Learning works with University Television and the Community Telecommunication Network in maintaining and operating the Telecommunications Center at 77 W. Canfield, Detroit, Michigan 48202. 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.

## Development and Sponsored Programs

*Director, Development Office:* Percy Moore

*Director, Sponsored Programs Office:* David Bowen

In order to maintain its growth and funding base, CLL has its own Sponsored Programs and Development offices. 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.

The responsibilities of Sponsored Programs include securing contracts with business and industry, and encouraging the writing of grant proposals by faculty and staff. While working to submit funding proposals to federal and state governments for special projects and programs, Sponsored Programs also seeks to build ties between CLL and other University schools and colleges, for co-sponsorship of noncredit instructional activities. The Data Center housed in this Office assists the College in research and statistical analysis needed to generate reports and support proposal-writing.

## Marketing

*Coordinator:* Derek Donnellon

The Marketing Office cooperates with other agencies 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.



# **SCHOOL OF MEDICINE**

**DEAN: Robert Sokol**

# Medical School Calendar 1992-94

(The following calendar is a tentative schedule for the M.D. curriculum)

## YEAR I STUDENTS—1992-93

Registration and Orientation .....	Mon., Aug. 17 - Fri., Aug. 21, 1992
Classes Begin .....	Mon., Aug. 24, 1992
Labor Day Recess .....	Mon., Sept. 7, 1992
Thanksgiving Recess .....	Thurs. and Fri., Nov. 26 - 27, 1992
Christmas Recess .....	Thurs., Dec. 24, 1992 - Fri., Jan. 1, 1993
Spring Recess .....	To be assigned
Classes End .....	Fri., May 28, 1993

## YEAR II STUDENTS—1992-93

Registration .....	Mon., Aug. 17 - Fri., Aug. 21, 1992
Classes Begin .....	Mon., Aug. 24, 1992
Labor Day Recess .....	Mon., Sept. 7, 1992
Thanksgiving Recess .....	Thurs. and Fri., Nov. 26 - 27, 1992
Christmas Recess .....	Thurs., Dec. 24, 1992 - Fri., Jan. 1, 1993
Spring Recess .....	To be assigned
Classes End .....	Fri., May 28, 1993

## YEAR III STUDENTS—1992-93

Registration .....	Thurs and Fri., July 8-9, 1992
Classes Begin .....	Mon., July 13, 1992
Rotation I .....	Mon., July 13 - Fri., Oct. 2, 1992
Rotation II .....	Mon., Oct. 5 - Fri., Dec. 24, 1992
Rotation III .....	Mon., Jan. 4 - Fri., March 26, 1993
Rotation IV .....	Mon., Mar. 29 - Fri., June 18, 1993
Ophthalmology Rotation .....	Mon. - Fri., June 21 - 25, 1993
Labor Day Recess .....	Mon., Sept. 7, 1992
Thanksgiving Recess .....	Thurs. and Fri., Nov. 26 - 27, 1992
Christmas Recess .....	Thurs., Dec. 24, 1992 - Fri., Jan. 1, 1993
Classes End .....	Fri., June 25, 1993

## YEAR IV STUDENTS—1992-93

Registration .....	Wed., June 24 - Fri., June 26, 1992
Classes Begin .....	Wed., July 1, 1992
Period 1 .....	July 1992
Period 2 .....	August 1992
Period 3 .....	September 1992
Period 4 .....	October 1992
Period 5 .....	November 1992
Period 6 .....	December 1992
Period 7 .....	January 1993
Period 8 .....	February 1993
Period 9 .....	March 1993
Period 10 .....	April 1993
Period 11 .....	May 1993
Residency Matching Day .....	To be assigned
Commencement .....	To be assigned

## YEAR I STUDENTS—1993-94

Registration and Orientation .....	Mon., Aug. 16 - Fri., Aug. 20, 1993
Classes Begin .....	Mon., Aug. 23, 1993
Labor Day Recess .....	Mon., Sept. 6, 1993
Thanksgiving Recess .....	Thurs. and Fri., Nov. 25 - 26, 1993
Christmas Recess .....	Fri., Dec. 24, 1993 - Sat., Jan. 1, 1994
Spring Recess .....	To be assigned
Classes End .....	Fri., May 20, 1994

## YEAR II STUDENTS—1993-94

Registration .....	Mon., Aug. 16 - Fri., Aug. 20, 1993
Classes Begin .....	Mon., Aug. 23, 1993
Labor Day Recess .....	Mon., Sept. 6, 1993
Thanksgiving Recess .....	Thurs. and Fri., Nov. 25 - 26, 1993
Christmas Recess .....	Fri., Dec. 24, 1993 - Sat., Jan. 1, 1994
Spring Recess .....	To be assigned
Classes End .....	Fri., May 20, 1994

## YEAR III STUDENTS—1993-94

Registration .....	Wed., July 7 - Fri., July 9, 1993
Classes Begin .....	Mon., July 12, 1993
Rotation I .....	Mon., July 12 - Fri., Oct. 1, 1993
Rotation II .....	Mon., Oct. 4 - Fri., Dec. 24, 1993
Rotation III .....	Mon., Jan. 3 - Fri., March 25, 1994
Rotation IV .....	Mon., March 28 - Fri., June 17, 1994
Ophthalmology Rotation .....	Mon. - Fri., June 20 - 24, 1994
Labor Day Recess .....	Mon., Sept. 6, 1993
Thanksgiving Recess .....	Thurs. and Fri., Nov. 25 - 26, 1993
Christmas Recess .....	Fri., Dec. 24, 1993 - Sat., Jan. 1, 1994
Classes End .....	Fri., June 24, 1994

## YEAR IV STUDENTS—1993-94

Registration .....	Mon., June 28 - Wed., June 30, 1993
Classes Begin .....	Thurs., July 1, 1993
Period 1 .....	July 1993
Period 2 .....	August 1993
Period 3 .....	September 1993
Period 4 .....	October 1993
Period 5 .....	November 1993
Period 6 .....	December 1993
Period 7 .....	January 1994
Period 8 .....	February 1994
Period 9 .....	March 1994
Period 10 .....	April 1994
Period 11 .....	May 1994
Residency Matching Day .....	To be assigned
Commencement .....	To be assigned

# FOREWORD

The primary mission of the School of Medicine is to improve the health of the community through its combined educational, research and service programs.

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 two hundred fifty students are enrolled in Ph.D. or Master's degree study in thirteen program areas, predominantly in the basic medical sciences. More than seven hundred fifty 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 thirty 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. It was originally called The Detroit Medical College and 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. The year 1933 saw 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, to whom the British surrendered this region in 1796. It was in 1956 that Wayne University became a State institution.

The School of Medicine has entered its second century with a period of unparalleled growth and the creation of a totally new campus in the Detroit Medical Center. With the opening of the Gordon H. Scott Hall of Basic Medical Sciences in 1971, the size of the entering class increased to 256 students, making the Wayne State University School of Medicine the largest single campus medical school in the country.

## 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.

The School of Medicine is closely affiliated with the Lafayette Clinic, a State-operated psychiatric hospital; a Veterans' Administration hospital, and seven other major urban and suburban hospitals in the metropolitan Detroit area. All offer programs for third- and fourth-year medical students.

The medical school participates in nationally-funded programs through the Meyer L. Prentis Comprehensive Cancer Center of Metropolitan Detroit, one of twenty-one centers comprising a network of cancer research and treatment; and the Wayne State University Comprehensive Sickle Cell Center, one of ten national centers for the study and treatment of sickle cell anemia.

## Detroit Medical Center Facilities

The Detroit Medical Center 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*, a division of Harper-Grace Hospitals, which specializes in oncology, cardiology, general surgery and a number of additional surgical specialties and subspecialties;

*Hutzel Hospital*, which includes among its areas of excellence: obstetrics, gynecology, gynecologic oncology, ophthalmology, neonatology, perinatology, urology and the treatment of infectious and renal diseases;

*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 all Medical Center Hospitals. A magnetic resonance imaging center and the world's first superconducting cyclotron are housed there.

## Shiffman Medical Library

*Director:* Faith VanToll Ross

*Librarians:* John Coffey, Natalie King, Lora Robbins, Ruth Taylor

### Hours

Monday – Thursday ..... 8:00 a.m. – 11:00 p.m.  
 Friday ..... 8:00 a.m. – 6:00 p.m.  
 Saturday ..... 9:00 a.m. – 5:00 p.m.  
 Sunday ..... 12:00 n. – 7:00 p.m.

Wayne State University's Shiffman Medical Library, located in the Detroit Medical Center adjacent to the School of Medicine's Scott Hall, houses a medical collection of over 200,000 volumes and 2,900 current journal subscriptions. Special features of the library include the Computer Resources Laboratory and a Medline Local Area Network (LAN). The Computer Resources Laboratory provides both hardware and software support for the School of Medicine's curriculum. The Medline LAN offers a local version of the National Library of Medicine's Medline database. Four computer stations are available at Shiffman Medical Library. Four dial access ports are also available. Twelve hard-wired computer stations will also be available at Scott Hall.

Library resources beyond the Detroit Medical Center are available through: (1) the Detroit Area Library Network (DALNET), a fully-computerized, multi-type library system; and (2) the National Network of Libraries of Medicine, composed of over 100 medical school libraries and more than 3400 hospital libraries. Shiffman Medical Library borrows materials from these resources for Wayne State's faculty, students and staff.

## Office of Student Affairs

*Assistant Dean for Student Affairs:* Robert Frank M.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

**Health Services:** Acute health care for medical students is available in the Primary Care Center of the University Health Center.

**Counseling:** Appointments for academic, personal and career counseling can be arranged through the Office of Student Affairs.

**Study Skills Counseling:** A study-skills specialist in techniques designed for the medical curriculum is available to students experiencing academic difficulty. Arrangements are made through the Counseling Office.

## External Affairs

*Office:* First Floor, Scott Hall, 540 E. Canfield

*Executive Director:* Stanley Jones

*Manager of Alumni Affairs:* Betty-Anne Leitch  
*Acting Manager of Development:* Stanley Jones  
*Manager of Public Affairs:* Kathleen Wedemire

The *External Affairs 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.

Each year the *W.S.U. Medical Alumni Association* conducts a Clinic Day and Alumni Reunion at which 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 7,000) 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 Board of Governors*.

The *Development Office's* fund-raising 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.

The *Public Affairs Office*, working with all elements of the School of Medicine, communicates to the School's constituencies its research, education, and health care objectives

## SCHOOL DIRECTORY

Dean ..... 1241 Scott Hall; 577-1335  
 Administration and Finance ..... 1241 Scott Hall; 577-1048  
 Continuing Medical Education . . . 4H Univ. Health Center; 577-1180  
 External Affairs ..... 1128 Scott Hall; 577-1495  
     Alumni Affairs ..... 1128 Scott Hall; 577-1495  
     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; 577-1286  
 Ph.D. and M.S. Programs ..... 1261 Scott Hall; 577-1455  
 Research ..... 1269 Scott Hall; 577-1455  
 Residency:  
     Graduate Medical Education . . . 9C Univ. Health Center; 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 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 major in:**

Anatomy and Cell Biology  
Basic Medical Sciences  
Biochemistry  
Community Health Services  
Immunology and Microbiology  
Medical Research  
Molecular Biology and Genetics  
Pharmacology  
Physiology  
Radiological Physics

#### **MASTER OF ARTS with major in Audiology\***

#### **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.

\* The Ph.D. program with specialization in audiology is offered by the College of Liberal Arts.

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 registered 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 .....	\$7,760.00	\$15,461.50
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:

Through the end of the sixth week of classes .....	100% less \$50.00*
Thereafter .....	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.

### M.D. DEGREE REQUIREMENTS

*Associate Dean for Curricular Affairs:* Robert Frank, M.D.

*Coordinator of Medical Education*

*Programs:* James L. Moseley, Ed.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.

\* \$50.00 is withheld ONLY if the student withdraws from all courses.

## 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 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, introduction to clinical medicine, and human values.

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, laboratory medicine, and health care issues.

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, family medicine, ophthalmology, and otolaryngology.

The fourth year is devoted entirely to elective study. 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.

Effective with the 1992 entering class, 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 take Parts I and 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.

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 I 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.

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 more than half of Michigan's 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, Harper-Grace, Hutzel, Detroit Receiving, 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.

## 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, combined pediatrics/internal medicine, 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, Master of Science, and Master of Arts 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 14.

**Application:** In addition to the requirements of the individual departments, applicants must submit: (i) University Graduate School application form; (ii) departmental application form; (iii) official transcripts of all undergraduate (and applicable graduate) academic work; (iv) Graduate Record Examination scores (verbal, quantitative and analytical components).

Please contact the Graduate Officer of the appropriate department or program (see list below) for application materials and additional information.

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.

The recommended procedure for application is:

1. Contact the Graduate Officer of the department for information and proper 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 March and April; late applicants may have very limited opportunities for financial assistance.

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):

Anatomy .....	Roberta Pourcho, Ph.D.
Audiology .....	William Rintleman, Ph.D.
Basic Medical Sciences .....	Lowell McCoy, Ph.D.
Biochemistry .....	David Evans, Ph.D.
Cancer Biology .....	Paul Hollenberg, Ph.D.
Cellular and Clinical Neurobiology .....	Arthur Freeman, Ph.D.

Community Health Services .....	Rosalie Young, Ph.D.
Immunology/Microbiology .....	Charles Jeffries, Ph.D.
Medical Physics .....	Colin Orton, Ph.D.
Medical Research .....	Lowell McCoy, Ph.D.
Molecular Biology and Genetics .....	Wayne Lancaster, Ph.D.
Pathology .....	Kenneth Palmer, Ph.D.
Pharmacology .....	Lawrence Lash, Ph.D.
Physiology .....	Lowell McCoy, Ph.D.
Radiological Physics .....	Colin Orton, Ph.D.

More detailed information concerning the graduate programs (M.S., Ph.D., combined M.D.-Ph.D.) listed above may be obtained from: Dr. George E. Dambach, Associate Dean for Research and Graduate Programs, Wayne State University School of Medicine, 540 East Canfield, Detroit, Michigan 48201.

### Graduate Fees

Students in the graduate programs offered by the School of Medicine pay the regular graduate fees of the University; see page 16.

### Master of Science

Programs leading to the Master of Science degree in the basic medical sciences and in several clinical fields are offered under the jurisdiction of the School of Medicine. Majors are available in the following areas: anatomy and cell biology, biochemistry, community medicine, immunology and microbiology, molecular biology and genetics, pharmacology, physiology, and radiological physics. Graduate courses available in these disciplines are listed by department in the following pages. More detailed descriptions of individual programs may be found in the departmental sections which follow. Two general 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. General requirements for the Master of Science degree may be found on page 27.

### Master of Arts

A program leading to the Master of Arts degree is offered by the Department of Audiology, described in the Department's section, below. General requirements for the Master of Arts degree may be found on page 27.

### 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, 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 cellular and clinical neurobiology is described in the Psychiatry Departmental section and the program in medical physics is described in the Radiation Oncology Departmental section of this bulletin. General requirements for the Doctor of Philosophy degree may be found beginning on page 27.

### Combined Doctor of Medicine— Doctor of Philosophy Degrees

The combined M.D.-Ph.D. program is designed to provide an opportunity for exceptionally talented students to acquire knowledge and expertise in both research and clinical medicine. The medical curriculum does not afford the medical student an opportunity to acquire the basic information and training necessary for a competent

research investigator. By combining and interrelating the Doctor of Medicine and Doctor of Philosophy programs, the objectives can be accomplished effectively and 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 to both 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. 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, cancer biology, cellular and clinical neurobiology, and medical research. 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 14. 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 Science 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 20–30 and 301, respectively. Specific requirements include:

*Required Core (A minimum of four courses, each reflecting a different subject area, must be chosen from the following)*

ANA 703 – Human Microscopic Anatomy .....	4
BCH 701 – General Biochemistry Lecture .....	4
C B 701 – Principles of Cancer Biology .....	3
IM 701 – Fundamental of Immunology .....	3
IM 702 – Fundamentals of Microbiology .....	2
IM 703 – Fundamentals of Virology .....	2
MBG 701 – Molecular Biology and Genetics .....	3
PHC 701 – Pharmacology Lecture .....	4
PSL 701 – Basic Graduate Physiology Lecture I .....	3
PSL 703 – Basic Graduate Physiology Lecture II .....	3
PTH 700 – General Pathology .....	5

#### *Elective Courses*

Elective credits sufficient to complete the degree requirements and approved by written consent of the Program Director.

#### *Essay Requirement*

BMS 799 – Essay in Basic Medical Sciences .....	3
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*Plan-of-Work* will be developed and filed in association of the Program Director or his/her designee. This should be completed by the end of the second semester in the Program.

*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.

*Essay Topic Selection and Outline* is to be filed with the Program Director.

*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)

The following courses are offered for graduate credit. For interpretation of numbering system, signs and abbreviations, see page 463.

### 799 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)

### 899 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)

## DOCTOR OF PHILOSOPHY IN CANCER BIOLOGY

Office: 6374 Scott Hall

Program Director: Paul F. Hollenberg

### Adjunct Professors

Samuel C. Brooks, Dharam Chopra, Judith Christman, Thomas H. Corbett, David R. Evans, Gloria Heppner, Paul F. Hollenberg, Kenneth Horn, David Kessel, Charles King, Wayne D. Lancaster, Orlando J. Miller, Raymond Novak, Avraham Raz, Robert Rownd, Bonnie F. Sloane, Frederick A. Valeriotte, Ching Y. Wang

### Adjunct Associate Professors

Ayad Al-Katib, Craig Giroux, Lance K. Heilbrun, Ronald N. Hines, Gyanendra Kumar, Stephen P. Lerman, Fred R. Miller, Robert Pauley, James H. Rigby, Louis Romano

### Adjunct Assistant Professors

Mohanathasan Chelladurai, Ben D.-M. Chen, Ruth L. Dusenbery, Jeffrey L. Evelhoch, Phyllis A. Gimotty, Larry H. Matherly, James M. Onoda, Stuart Ratner, Mahmoud Seyedasdr, David I. Smith, J. Christopher States, Wei-Zen Wei

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 man. 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 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 14) and the graduate programs in the School of Medicine (see page 301). 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. Foreign 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 20-30 and 301, respectively. Specific requirements include:

### Required Core Courses (fifteen credits)

BCH 701 — General Biochemistry Lecture (or CHM 762, 764)

IM 701 — Fundamentals of Immunology

MBG 701 — Molecular Biology and Genetics

PHC 701 — Pharmacology Lecture

PHC 721 — Principles of Cancer Biology

### Elective Courses (18 courses) (50-55 credits)

The Plan of Work will be developed in conjunction with the Graduate Officer. Twelve of the eighteen courses must be from Cancer Biology Courses; eight to ten credits must be in a minor; and fifty to fifty-five credits must be distributed between 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, metastasis, experimental therapeutics, carcinogenesis, molecular biology, cellular biology and genetics.

## Assistantships and Research

This program has graduate assistantships and research positions 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 twelve 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 the Program Director, Program in Cancer Biology, c/o Department of Pharmacology, Wayne State University School of Medicine, 540 E. Canfield, Detroit, Michigan 48201.

## GRADUATE COURSES (C B)

The following courses are offered for graduate credit. For interpretation of numbering system, signs and abbreviations, see page 463.

- 721 (PHC 721) Principles of Cancer Biology. Cr. 3**  
Prereq: BCH 701 or CHM 762 or equiv. 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)
- 722 (PHC 722) Cell and Molecular Biology of Cancer Development. (MBG 712). Cr. 3**  
Prereq: C B 721; BCH 701 or CHM 762 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)
- 723 (PHC 723) Breast Cancer. Cr. 2**  
Prereq: C B 721 or equiv. Detailed examination of the normal physiology of breast tissue and the pathological process leading to cancer development; description of means by which this tumor type is clinically treated. Integration of the various disciplines of cancer research by focusing on a particular organ system. (B)
- 724 (PHC 724) Principles of Cancer Chemotherapy. Cr. 2**  
Prereq: BCH 701 or CHM 762, 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)
- 771 Individual Studies in Cancer Biology. Cr. 1-5**  
Students pursue areas of interest with selected faculty members in the program. (T)
- 789 Seminar in Cancer Biology. Cr. 1-3**  
Students give presentations on selected topic areas or specific papers to other students and faculty in the program. (T)
- 899 Master's Thesis Research and Direction. Cr. 1-8(8 req.)**  
(T)
- 999 Doctoral Dissertation Research and Direction. Cr. 1-16(30 req.)**  
(T)

## DOCTOR OF PHILOSOPHY IN CELLULAR AND CLINICAL NEUROBIOLOGY

Office: 9B-21 University Health Center  
Interim Chairperson, Department of Psychiatry: Joseph Fischhoff

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 14 and 301, 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 20-30 and 301, respectively. Specific requirements include:

*Required Core Courses (twenty-nine credits, alternates to PSL 702 and 703 may be chosen with approval of the Graduate Committee)*

BCH 701 - General Biochemistry Lecture .....	4
PHC 750 - Pharmacology Lecture .....	4
PSL 702 - Basic Graduate Physiology Lecture I .....	3
PSL 702 - Basic Graduate Physiology Lecture II .....	3
PYC 701 - Neurobiology I .....	3
PYC 702 - Neurobiology II .....	3
PYC 751-756 - At least three courses chosen from this group .....	9

*Research Seminars (elected for each term of the program)*

PYC 789 - Research Seminar .....	1
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*Research Problems (minimum of nine credits)*

PYC 796 - 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)

The following courses are offered for graduate credit. For interpretation of numbering system, signs, and abbreviations see page 463.

- 701 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)
- 702 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)
- 751 Neurochemistry of Monoamine Containing Neurons. Cr. 3**  
Prereq: PYC 701, 702, 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)

**752 Molecular Biological Approaches in Neurobiology. Cr. 3**

Prereq: PYC 701, 702, 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)

**753 Neurological and Psychiatric Disorders in Man: Clinical and Basic Perspectives. Cr. 3**

Prereq: PYC 701, 702, or consent of instructor. Advanced presentation of the anatomical and biochemical basis of neurodegenerative (including Parkinson's and Alzheimer's) and psychiatric illnesses (including affective disorders and psychosis) with emphasis placed on diagnosis. (B)

**754 Current Topics in Neurophysiology. Cr. 3**

Prereq: PYC 701, 702, 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)

**755 Signal Transduction in Neuronal Tissues. Cr. 3**

Prereq: PYC 701, 702, or consent of instructor. Modern concepts of the biochemical and molecular biological bases of neuronal communication. (B)

**756 Advanced Topics in Behavioral Pharmacology. Cr. 3**

Prereq: PYC 701 and 702 or consent of instructor. Overview of behavioral studies of learning and memory, drug effects on behavior, and animal models of neuropsychiatric diseases. (B)

**789 Research Seminar. Cr. 1 (Max. 8)**

Presentations by clinical and basic research staff and by the program's graduate students. (T)

**790 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)

**796 Research Problems. Cr. 1-10(Max. 20)**

Directed laboratory rotation for graduate students in the Cellular and Clinical Neurobiology program. (T)

**999 Doctoral Dissertation Research. Cr. 1-10(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 14. 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 Basic Medical Science 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 20-30 and 301, respectively. Specific requirements include:

*Elective Courses*

Elective credits sufficient to complete the degree requirements and approved by written consent of the Program Director.

*Thesis Requirement*

BMS 899 - Master's Thesis Research and Direction. .... 8

A *Plan of Work* will be developed and filed in association of 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 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 899 (see page 303).

# ANATOMY and CELL BIOLOGY

Office: 8374 Scott Hall; 577-1061

Chairperson: Harry Maisel

## Professors

Jose R. Alcala, Maurice H. Bernstein (Emeritus), Morris Goodman, Harry Goshgarian, Linda D. Hazlett, Gabriel W. Lasker (Emeritus), Harry Maisel, David B. Meyer (Emeritus), Jerald A. Mitchell, Nicholas J. Mizeres (Emeritus), Roberta G. Pourcho, Jose A. Rafols, Alex Roher, Robert P. Skoff

## Associate Professors

Mihir Bagchi, William J. Crossland, James C. Hazlett, Mauricio A. Lande

## Assistant Professors

Joanne Fujii, Mark E. Ireland, Pamela Knapp, Michelle Kurpakus, Paul Walker

## Adjunct Associate Professors

David R. Armant, Arthur M. Hamparian, Jerry L. Slightom

## Adjunct Assistant Professors

Mark Lundy, Daniel Michael, Sheldon M. Mintz, Lacey Walke, Carol Zajac

## Associates

Barry A. Bogin (Anthropology), David S. Carlson (Center for Human Growth, University of Michigan), Edward Essner (Ophthalmology), Robert Frank (Ophthalmology), Eugene V. Perrin (Pathology), Gino G. Salciiccoli (Orthopedic Surgery), Mark L. Weiss (Anthropology)

## Master of Science and Doctor of Philosophy Degrees

The basic aims of the Department are to provide an understanding of the structural features of the human body with emphasis on functional correlates at all levels from gross anatomical relationships to details of fine structure. Pursuant to this study, the Department offers programs leading to the degrees of Master of Science and Doctor of Philosophy. These programs are intended to provide professional training for future members of the academic disciplines of the anatomical sciences. Research training is also offered to holders of first professional degrees (e.g., M.D., D.D.S., D.V.M.).

Courses offered in the Department include gross, microscopic, developmental, cell biology and neuro-anatomy. Active research programs are conducted in cell biology, molecular evolution, developmental and reproductive biology and neurosciences. Students in the graduate programs are expected to concentrate their studies in a particular area of interest, but they are also expected to acquire adequate training in all branches of the anatomical sciences.

Admission to these programs is contingent upon admission to the Graduate School and the School of Medicine; for requirements, see pages 14 and 301, 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 2.5 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 with the advanced test in biology 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 20-30 and 301, 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 complete ANA 701, 703, 708, 713, and 733, 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 to fifty-two credits distributed between the major and required cognate courses and electives. All doctoral degree students must complete ANA 701, 703, 708, 713, and 733.

## 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)

The following courses, numbered 500-999, are offered for graduate credit. Courses numbered 500-699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090-499). Courses in the following list numbered 500-699 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 463.

### 512 Principles of Neuroanatomy. Cr. 3

Open only to non-anatomy majors. Histology, physiology, development, gross anatomy and functional aspects of the nervous system of man; emphasis on the brain and spinal cord. (S)

### 701 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)

### 703 Human Microscopic Anatomy. Cr. 4

The microscopic structure of tissues and organs. Lectures and laboratory study. (W)

### 708 Human Embryology. Cr. 3

Prereq: ANA 701 or 703. Study of experimental and human embryology; developmental processes, with particular reference to human embryology. (W)

### 709 Developmental Neurobiology. Cr. 2

Prereq: ANA 708 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)

**713 Neuroanatomy. Cr. 4**

For anatomy graduate students. (S)

**714 Fine Structure of the Nervous System. Cr. 2**

Prereq: ANA 713. Comprehensive study of the fine structure of the nervous system with the aid of light and electron microscopic preparations. (B:F)

**719 Neuroscience Survey. (PHC 719)(I M 719)(PSY 719)(BIO 719)(PSL 719). Cr. 3**

Interdisciplinary overview of principles of neurosciences. (F)

**720 Neurophysiology. Cr. 3**

(F)

**721 Experimental Neurophysiology. Cr. 2-10 (Max. 20)**

Prereq: ANA 712 or 713; and 720 and 722 or equiv. Advanced studies on the nervous system with emphasis on technical methods. Experiments using various electrophysiological techniques. (W)

**722 Seminar in Neurophysiology. Cr. 2 (Max. 6)**

Prereq: ANA 712 or 713 and 720 or equiv. Electrical and chemical phenomena of neural membrane and synapses. (F)

**723 Molecular Biology and Primate Evolution. Cr. 1-3**

Principles of immunoembryology, immunogenetics, and biochemical systematics, and their application to the study of primate evolution. (F)

(F)

**726 Special Dissection. Cr. 2-10 (Max. 20)**

(T)

**727 Special Projects In Anatomy. Cr. 2-10**

(T)

**733 Cell Biology. Cr. 3**

Students present topics and lead discussions on assigned readings in current periodicals and journals. Weekly discussion (two to three hours) relating to seminar (one hour, two to four times per month). (W)

(W)

**789 Seminar. Cr. 1(Max. 4)**

(T)

**790 Directed Study In Physical Anthropology. (ANT 790). Cr. 1-8(Max. 8)**

(T)

**796 Research. Cr. 1-15 (Max. 30)**

(T)

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

(T)

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

Offered for S and U grades only.

(T)

# ANESTHESIOLOGY

Office: 2V.4 Detroit Receiving Hospital; (132)5-3618

Chairperson: Eli M. Brown

*Professor*

Eli M. Brown

*Associate Professor*

Gerhard C. Endler

*Adjunct Associate Professor*

Roy Aston

*Associate Professors, Full-Time Affiliate*

Gaylord Alexander, Morris Brown, Bernard G. Sivak

*Assistant Professors, Full-Time Affiliate*

Elie J. Chidiac, Samir F. Fuleihan, Halim Haber, Marvin R. Jewell, Calvin Johnson, Henry R. Kroll, Vimala Kunjappan, Lawrence Larson, Todd E. Linsinger, Myrtice E. Macon, Frances E. Noe, Samuel Perov, A. Michael Prus, Michael K. Rosenberg, Orlando S. Sison, Robert Tawil

*Clinical Assistant Professors*

Eugene Boyle, Jack A. Young

*Instructors, Full-Time Affiliate*

Carl Holsey, Renato S. Roxas, Selma Velilla

*Clinical Instructors*

Edward G. Bartholomew, Yale S. Falick, Ronald S. Schmier

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; and (8) management of acute drug intoxication.

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.

# AUDIOLOGY

Office: 5E University Health Center; 577-1393

Chairperson: William F. Rintelmann

## Professor

William F. Rintelmann

## Associate Professor

Dale O. Robinson

## Assistant Professors

James A. Kaltenbach, Thomas H. Simpson

## Adjunct Associate Professors

Gary P. Jacobson, Craig W. Newman

## Adjunct Assistant Professors

Kenneth R. Bouchard, Anthony A. Muraski

## Assistant Professors, Full-Time Affiliate

Frances E. Eldis, Ronald W. Ford, Gilmour M. Peters

## Adjunct Instructor

Sabina A. Schwan

## Associate

Michael W. Church

## Graduate Degrees

### MASTER OF ARTS with a major in audiology

Audiology is the study of the normal and impaired auditory system. This field is concerned with how individuals hear and how impaired hearing affects communication, development and social adjustment. Thus, the measurement of hearing, the interrelationships between the development of speech and language and hearing losses, the auditory symptoms of disease entities and the habilitation and rehabilitation of individuals with hearing losses are among the major interests of audiologists.

The Master of Arts program offers students intensive and diverse clinical experiences under the direct supervision of the faculty and staff in several clinical settings. The M.A. course of study is designed to meet both the requirements for the Master of Arts degree at Wayne State University and for the Certificate of Clinical Competence in Audiology awarded by the American Speech-Language-Hearing Association. The Master of Arts program prepares students for the professional responsibilities of an audiologist in various types of clinical settings.

In addition to its primary graduate-level education mission, the Audiology Department is involved in teaching programs which include contact with medical students and residents of other departments. The Department functions in close cooperation with the Departments of Otolaryngology, Head and Neck Surgery in the School of Medicine; and Communication Disorders and Sciences in the College of Liberal Arts. Hence, graduate students have an opportunity to participate in clinical and/or research activities of an interdisciplinary nature.

## Master of Arts Degree

Admission to this program is contingent upon admission to the Graduate School and the Graduate Programs of the School of Medicine; for requirements, see page 14 and page 301. Additionally, applicants are expected to meet the following requirements of the

Department: Students applying for the Master of Arts 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. 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.

**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 20-30 and 301, respectively.

**DEGREE REQUIREMENTS:** This master's degree usually is offered as a Plan C master's program requiring forty-five credits of course work; however, some students elect Plan A, which requires a thesis. Details of the program and application forms are available from the Department of Audiology.

## Assistantships and Research

The Department has assistantships and graduate research positions available for a number of qualified applicants. Students interested in obtaining financial aid should include a request for such assistance with their admissions application. 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 participate in clinical practicum activities as part of their educational experience. For more information on financial assistance, students should consult or write the Graduate Officer, Department of Audiology, Wayne State University School of Medicine, 4201 St. Antoine, Detroit, Michigan 48201.

## GRADUATE COURSES (AUD)

*The following courses, numbered 500-999, are offered for graduate credit. Courses numbered 500-699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090-499). Courses in the following list numbered 500-699 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 463.*

### 540 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)

### 542 Auditory Training and Speech Reading. Cr. 3

Prereq: AUD 540. Principles and methods of auditory training and speech reading for the hearing impaired. Observations required. (S)

### 548 Clinical Instruments. Cr. 3

Prereq: graduate standing in audiology or communication disorders and sciences. Design, calibration, and use of electro- and bioacoustic instruments in clinical audiology. (F)

### 600 Electrophysiological Procedures. Cr. 4

Prereq: AUD 540; graduate standing in audiology or communication disorders and sciences, or consent of instructor. Two distinct electrophysiological measures, auditory evoked potentials (AEPs) and acoustic immittance, are presented. Both procedures consist of several sub-tests used to assess the auditory system from the middle ear to the cortex, both in normal listeners and patients with auditory pathology. (W)

### 630 Practicum in Audiology. Cr. 2

Prereq: AUD 540, 542. Supervised training and practice in pure tone threshold measurement and aural rehabilitation. (T)

**640 Anatomy and Physiology of the Auditory and Vestibular Systems. Cr. 4**

Prereq: graduate standing in audiology or communication disorders and sciences. Functional anatomy, physiology, and central pathways of the auditory and vestibular system. (F)

**641 Pure-tone and Speech Audiometry. Cr. 3**

Prereq: graduate standing in audiology or communication disorders and sciences. Fundamental principles and clinical applications of pure-tone and speech audiometry. Laboratory assignments required. (F)

**642 Special Audiologic Procedures. Cr. 2**

Prereq: AUD 641. 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)

**643 Hearing Aids. Cr. 4**

Prereq: AUD 641. Electroacoustic and clinical aspects of acoustic amplifiers for the hearing handicapped. (W)

**645 Clinical Topics in Audiology. Cr. 1-2(Max. 8)**

In-depth study of special current topics in audiology. Topics to be announced in *Schedule of Classes*. (I)

**740 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. (Y)

**741 Psychoacoustics. Cr. 3**

The behavioral response of organisms to sound. In-depth study of classical and contemporary topics in psychological acoustics. Laboratory included. (W)

**742 Industrial and Community Problems in Audiology. Cr. 3**

Prereq: six graduate credits in audiology. 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. (S)

**743 Pediatric Audiology. Cr. 3**

Prereq: AUD 641. Introduction to embryology, tests, test procedures, and counseling of parents with hearing-handicapped children. (S)

**745 Statistical and Experimental Procedures in Audiology. Cr. 4**

Material fee as indicated in *Schedule of Classes*. Introduction to descriptive and inferential statistics and experimental designs as applied to auditory, psychophysical, and behavioral data. Non-parametric and correlational procedures. (S)

**749 Educational Management of Hearing Impaired Children. Cr. 3**

Prereq: AUD 643, 743. Preschool guidance and counseling, modern educational models and placement options, and the role of the audiologist in educational management. (F)

**790 Directed Study. Cr. 1-3(Max. 6)**

Prereq: written 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. (I)

**843 Electronystagmography. Cr. 2**

Instrumentation, procedures, and interpretation of ENG recordings. (S)

**848 Seminar in Audiology. Cr. 3(Max. 12)**

(W)

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

Prereq: written consent of adviser. (I)

# BIOCHEMISTRY

Office: 4374 Scott Hall; 577-1511

Chairperson: Barry P. Rosen

## Professors

Sam C. Brooks, Ray K. Brown, Brian F.P. Edwards, David R. Evans, C. P. Lee, Barry P. Rosen, Robert Rownd, Serge N. Vinogradov

## Associate Professors

William S. Brusilow, Danica Dabich, Marilyn S. Docher, Robert M. Johnson, James J. Lightbody, Leonard I. Malkin, Robert A. Mitchell, Richard B. Needleman, Charles J. Parker, Jr.

## Assistant Professors, Full-Time Affiliates

Sharon Ackerman, Robert A. Akins, Tapan K. Biswas, Frank C. Boschelli, Maureen Pupillo, Anita R. Lynn, Alexander J. Ninfa, William A. Zehring

## Associates

Joyce Benjamins (Neurology), Yoav Ben-Yoseph (Pediatrics), Vincent Chau (Pharmacology), Ta-Hsu Chou (Oncology), Balvin Chua (Pathology), Dennis Drescher (Ophthalmology), Craig Giroux (Molecular Biology), Craig Jackson (American Red Cross), T. H. Kuo (Pathology), Lana Lee (University of Windsor), Stephen Lemer (Infectious Disease), Vishwanath M. Sardesai (General Surgery), Edward Yurewicz (Gynecology/Obstetrics), Jiri Zemlicka (Oncology)

## Graduate Degrees

*MASTER OF SCIENCE with a major in biochemistry*

*DOCTOR OF PHILOSOPHY with a major in biochemistry*

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 for students planning teaching or research careers in this field. 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. A degree in Biochemistry with specialization in clinical chemistry and an M.D.-Ph.D. program with major in biochemistry are also available.

## Master of Science and Doctor of Philosophy Degrees

Admission to these programs is contingent upon admission to the Graduate School (see page 14) and the Graduate Programs of the School of Medicine (see page 301). 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 and 2.5 for the master's program is required; and an interview with the Graduate Officer or designated representative should be arranged. 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 20–30 and 301, respectively.

**MASTER OF SCIENCE REQUIREMENTS:** Applicants for the master's degree must complete thirty credits in course work including at least eight credits in master's research and thesis. All master's degree students must complete Biochemistry 701, 750, and 705.

**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 701, 702, 705, 732, 750 and four credits in 789.

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, Wayne State University School of Medicine, 540 East Canfield, Detroit Michigan 48201.

## GRADUATE COURSES (BCH)

*The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.*

**501 General Biochemistry Lectures. Cr. 2**  
Prereq: CHM 101 or equiv. Structural biochemistry, metabolism of carbohydrates; lipids, proteins and nucleic acids. (F,W)

**502 General Biochemistry Laboratory. Cr. 2**  
Prereq: quantitative analysis. Material fee as indicated in *Schedule of Classes*. Laboratory experience in quantitative techniques of biochemical importance. (F)

**503 General Biochemistry Lecture. Cr. 2**  
Prereq: BCH 501. Clinical enzymology; metabolism of steroids; hormones; biochemistry of tissues and body fluids. (W)

**701 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)

**702 Biochemistry Laboratory Rotation. Cr. 3**  
Research projects with various faculty. (T)

**705 Interpretation of Biochemical Data. Cr. 1**  
Prereq. or coreq: BCH 701. 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)

**732 Protein Structure and Function. Cr. 3**  
Prereq: BCH 701 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)

**733 Membrane and Cell Biology. Cr. 3**  
Prereq: BCH 701. Modern concepts of structure and function of cell membranes and eucaryotic cell biology. Topics include: membrane structure, membrane transport, cytoskeleton, motility, protein targeting, molecular biology of developmental biology. (Y)

**750 (BIO 750) Prokaryotic Gene Structure and Function. Cr. 4**  
Prereq: BIO 507, BIO 610 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)

**751 (BIO 751) Eukaryotic Gene Structure and Function. Cr. 4**  
Prereq: BCH 750. Detailed analysis of the structure, expression and replication of genes of eukaryotic cells and associated extrachromosomal elements. Critical discussion of studies establishing central concepts of eukaryotic gene regulation, repair and recombination. In-depth presentation of modern molecular genetic methodologies used in current investigations of eukaryotic systems. (Y)

**767 Advanced Biochemistry Laboratory. Cr. 2–10**  
Advanced laboratory techniques as applied to investigations of biological materials. (S,F)

**777 (PTH 777) Clinical Biochemistry I. Cr. 2**  
Prereq: BCH 701 or equiv. Biochemical theory and applications as related to the clinical laboratory. (F)

**778 Clinical Biochemistry II. (PTH 778). Cr. 2**  
Prereq: BCH 701 or equiv., 777. Continuation of BCH 777. (W)

**789 Journal Club. Cr. 1 (Max. 6)**  
Prereq: BCH 701 or equiv. Student presentations of papers from recent biochemistry literature; recommended for graduate students in biochemistry only. (F)

796 Research. Cr. 1-15(Max. 30)

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

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

Offered for S and U grades only.

(T)

(T)

(T)

# COMMUNITY MEDICINE

Office: 9D University Health Center; 577-1033

Chairperson: John B. Waller, Jr.

## Associate Professors

Allen H. Reed, Eugene P. Schoener, John B. Waller, Jr.

## Adjunct Associate Professors

Walter A. Markowicz, J. Douglas Peters, Norbert Reinstein

## Assistant Professors

Antonia D. Abbey, James L. Moseley, Rosalie F. Young

## Adjunct Assistant Professors

Terrence E. Carroll, Dorothy Eckert, J. Kay Felt, Elaine Hicks, Walter A. Markowicz, Elizabeth Olson, Roger Spry, Edward Thomas

## Clinical Assistant Professors

Stephen B. Blount, George R. Fleming, Virginia Y. Mesa, Silas Norman, Cynthia Shelby-Lane

## Adjunct Instructors

Gerald W. Aldridge, Sandra Brown, Adger Butler, Alma P. A. Chand, Catherine Pettinari

## Associates

Raymond Y. Demers, Paul T. Giblin, Denise Gray, Lori Hall, John R. F. Ingall, John R. Kinkel, Edward Manning, Rhonda Montgomery, Eugene Perrin, Marilyn L. Poland, James A. Sedensky, Mahmoud Seyedsadr, Michael Simon

## Graduate Degrees

*MASTER OF SCIENCE with a major in Community Health Services*

*GRADUATE CERTIFICATE in Community Health Services Research and Evaluation*

The Department of Community Medicine is concerned with the study of the distribution and determinants of disease within populations, as well as the study of how health services are organized, delivered, financed and evaluated. Particular attention is given to problems of disadvantaged and medically underserved populations. There is a strong community and public health focus, and 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- 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. Senior electives also include opportunities to work on epidemiological problems in collaboration with the Detroit Health Department and others, work in a variety of health care delivery settings including prisons, manage health after-effects of violent domestic and community incidents, study medico-legal problems, and the like.

## Master of Science

Admission to this program is contingent upon admission to the Graduate School and the School of Medicine; see pages 14 and 301, respectively. Candidates must also complete undergraduate work in



mathematics, natural science, and social science, and have experience in a health-related position. A personal interview is also required. Deadline for Fall admission is July 15. Admission in Winter term is subject to the approval of the Departmental Graduate Committee.

**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 601, 602, 710, 721, 724, 725, 732, and 740. 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 20-30 and 301, respectively.

## 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 14 and 301, respectively. In addition, a faculty interview and a background in health care are required, as is a background of course work or experience in areas such as 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 710, 724, 601, and 721) 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 Scholarships and University Fellowships available to students in community medicine programs. 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)

*The following courses, numbered 500-999, are offered for graduate credit. Courses numbered 500-699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090-499). Courses in the following list numbered 500-699 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 463.*

### 601 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)

### 602 Biostatistics II. Cr. 3

Prereq: C M 601 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)

### 703 Advanced Topics in Medical Statistics. Cr. 2

Prereq: C M 602 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)

### 710 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)

### 721 Research Methods for Health Professionals. Cr. 4

Prereq: C M 601 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)

### 724 Epidemiology. Cr. 3

Required of all M.S. students in Community Health Services. 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)

### 725 Applied Epidemiology. Cr. 3

Prereq: C M 724. 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)

### 732 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)

### 733 Disease Prevention Issues in Health. Cr. 3

Health promotion and disease and injury prevention in national, regional, and local context. Problem of the minority health gap addressed in formal study and independent field work. (B)

### 737 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)

### 738 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)

### 740 (ECO 755) Economics of Health Care I. Cr. 4

Prereq: ECO 600 or consent of instructor. No credit after ECO 555. 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)

### 776 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:S)

### 785 (SOC 785) Seminar in Applied Gerontology. (S W 885). 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 881. 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. (I)

**790 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)

**798 Internship In Geriatrics/Gerontology.** Cr. 1-3

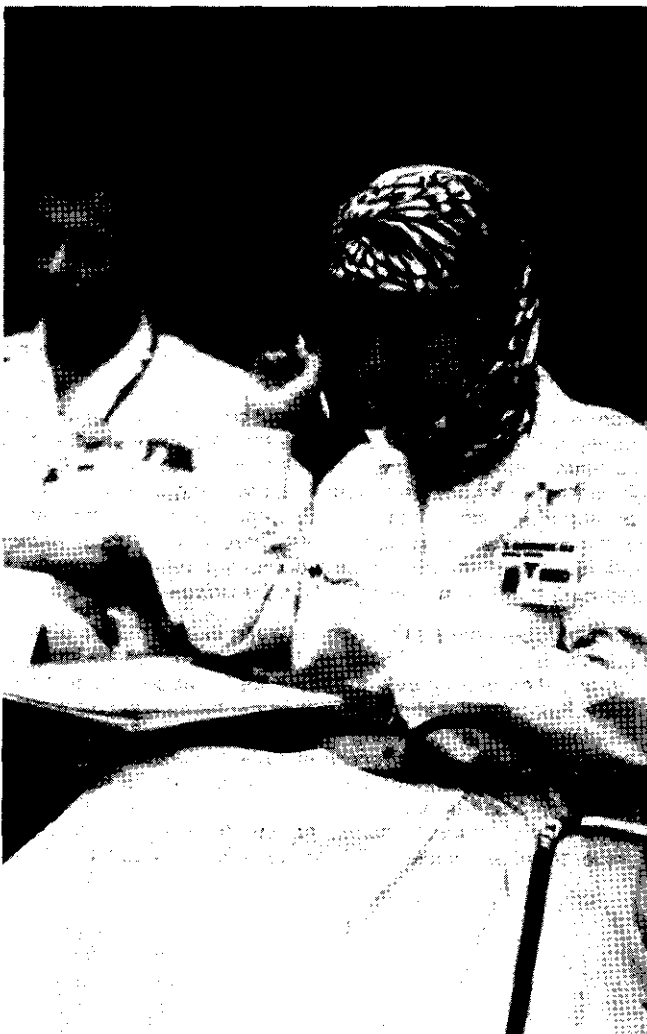
Prereq: completion of three gerontology courses or advanced standing in either program; written consent of adviser. Open only to community medicine graduate students or students in Institute of Gerontology certificate program. Practical experience in application of geriatric/gerontological concepts to elderly populations; service, administrative, research, or advocacy orientation. (T)

**890 Master's Project.** Cr. 1-3(3 req.)

(T)

**899 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 Alunan, Isadore Botvinick, Thomas A. Chapel, Ralph J. Coskey, John N. Grekin, Amir H. Mehregan, Coleman Mopper, Harold Plotnick

## *Clinical Associate Professors*

Thomas F. Downham II, Richard F. Elton, Richard J. Ferrara, Syed L. Husain Harnzavi, Homayoon Rahbari, Earl J. Rudner, Robert J. Schoenfeld, Oscar D. Schwartz, Benjamin Schwimmer, Andrew E. Segal, Julius Stone, James D. Stroud, Harold E. Usndek, Rudolf E. Wilhelm

## *Assistant Professors*

Peter J. Aronson, 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 Fligel, Mohammad Ghaemi, Stanley Greenberg, Joel J. Harris, Martin Hart, Robert P. Heidelberg, Lawrence Krugel, Edward S. Lerchin, Antonina Miller, Hossein Nabai, Constantin Predeteanu, Richard S. Schwartz, Marvin D. Siegel, Richard H. Smith, Daniel M. Stewart, Antoinette Tanay, Jay Victor, Harold R. Wagenberg

## *Clinical Instructors*

Stanley Alfred, Barry I. Auster, David Blum, Henry G. Bryan, Louis C. Chiara, Michael S. Frank, Davide Iacobelli, Nora Maya Kachaturoff, Joseph W. Kaufman, Sato Jean Kegler, Ronald D. Kerwin, Marvin E. Klein, Sanford Komwise, Bruce L. Krieger, Ann A. LaFond, Judith T. Lipinski, Jolanta E. Malinowski, Jeffrey M. Shuster, Everett B. Simmons, Jr., Richard A. Stone

## *Associate*

Charles D. Jeffries

The instructional and research activities of this department focus on the skin as a distinct organ of the body. The basic principles of medicine are utilized in the treatment of the skin and its diseases. Specific diagnostic procedures developed in recent years such as immunopathology, and new modalities of treatment such as PUVA, 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, ultrastructural analysis, photobiology and dermatopathology.

The department offers a three-year, fully-accredited residency training program to candidates at the second postgraduate year level.

# FAMILY MEDICINE

*Office:* 3 South, Grace Hospital, 6071 W. Outer Drive; 966-1919  
*Chairperson:* Paul T. Werner

## *Professors*

Richard E. Gallagher, Paul T. Werner

## *Associate Professor*

Raymond Y. Demers

## *Clinical Associate Professors*

John M. Battle, Archie W. Bedell, George A. Dean, George Mogill, Jack Ryan

## *Assistant Professors*

Hassan Amirikia, James E. Blessman, Jr., Ray A. Breitenbach, Janet M. Buhse, Bruce R. Deschere, Mark H. Ebell, Lawrence R. Fischetti, Yvonne Friday, Louis B. Jacques, Victoria Neale, Maryjean Schenk, Kendra L. Schwartz, Mark J. Upfal, Lourdes Velez, Richard J. Weinstein

## *Assistant Professors, Full-Time Affiliate*

John J. Escott, Robert J. Toteff

## *Clinical Assistant Professors*

Korkut Akan, Mohammad-Amin Badawi, Roy W. Boyer, Arthur M. Cooper, Bernard Dash, Cynthia L. Fisher, Thomas J. Ganos, Gary Gazella, Christopher D. Goldsby, Frederick Grose, Cecelia F. Hissong, Samson A. Inwald, Van O. Keeler, Paula J. Kim, Charles J. Lapp, William C. Larsen, John L. Lehtinen, Edward D. Manning, Joanne McKune, Christopher J. Pabian, Gary G. Otsuji, Kris Pamicky, Frank P. Raiford III, Gerald Rakotz, Duane E. Smith, Abraham B. Solomon, Anthony C. Southall, Amos Taylor III, Thomas A. Tenaglia, Larry C. Thompson, Robert J. Urban, Louis R. Zako

## *Adjunct Assistant Professor*

Jane R. Thomas

## *Instructor*

Sharon M. Popp

## *Clinical Instructors*

Donald O. Bignotti, Juliann Binienda, Melvyn Freidman, Kathleen M. Fulgenzi, John A. Geralt, Michael B. Karbal, Mitchell S. King, Nevena M. Mihailoff, Robert C. Orr, David J. Rogers, Stephen W. Robinson, Howard B. Schwartz, Peter Scuccimmarri, Thomas Selznick, Jean Sinkoff, Anthony N. Vetraino, Jr., Robert Wolfe, Gary A. Wozniak, Gayla N. Zoghlin, Kathleen Zoppi

## *Adjunct Instructors*

Patricia Armstrong, Gerald Terlep, Roger Wabeke

## Undergraduate Education

The Department of Family Medicine participates in the education of medical students through several mechanisms. In the first year of medical school students are provided the following educational opportunities:

1) a 'clinical track' pilot study funded through a federal grant is offered to up to twenty-five per cent of the freshman and sophomore classes. 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.

2) In conjunction with the Department of Internal Medicine, the Department of Family Medicine administers and participates in an Introduction to Clinical Medicine course required of all first-year medical students.

3) 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 Harper-Grace 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 Grace Family Practice Center in Royal Oak, Michigan, and uses Grace Hospital as its primary clinical base. Hospital rotations are arranged through the Detroit Medical Center Network. Residents gain experience in Children's, Harper, Hutzel, Detroit Receiving, and the Veterans Administration hospitals.

*Postgraduate Education:* The Department plays an active role in providing continuing education for family physicians in practice. Three- to five-day clinical update conferences are 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 Center 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.

*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.

# IMMUNOLOGY and MICROBIOLOGY

Office: 7374 Scott Hall; 577-1591  
Chairperson: Paul C. Montgomery  
Deputy Chairperson: Myron A. Leon

## Professors

Richard S. Berk, Dov L. Boros, Dominic L. DeGuisti (Emeritus), Charles D. Jeffries, Yi-chi M. Kong, Maurice G. Lefford, Myron A. Leon, Paul C. Montgomery, Sunil Palchaudhuri, Roy S. Sundick, Robert H. Swanborg, Lawrence M. Weiner

## Adjunct Professor

M. D. Poulík

## Associate Professors

William J. Brown, Stephen P. Lerman, Helene C. Rauch, V. Fay Righthand, Harley Y. Tee

## Adjunct Associate Professor

Heiner Frost

## Assistant Professors

Lee Carrick, Jr., Thomas C. Holland, Matthew Jackson, Lily A. Jones, Steven R. King

## Adjunct Assistant Professors

Jenn Chen, Alvaro Giraldo, Frank Gnabasik, Brenda W. McCurdy, Emmy Peck, Nicholas Radoiu, Mary P. Whitcomb

## Associates

Joyce Benjamins (Neurology), Chaim Brickman (Medicine), Flossie Cohen (Pediatrics), Gloria Heppner (Pathology), Joseph Kaplan (Pediatrics), Ward Peterson (Child Research Center), Jerry C. Rosenberg (Surgery), Anthony G. Sacco (Gynecology and Obstetrics)

## 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 sixty-two 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, the Michigan Cancer Foundation, and William Beaumont Hospital 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 replication, persistent viral infections, the analysis of genes coding for viral structural units, the role of viral proteins in pathogenesis and the potential use of viral antigens in eliciting immune responses. The bacteriologists are studying the influence of the genetic background of animals on the susceptibility to

infectious agents, their toxins and metabolic products, mechanisms for bacterial invasion of eukaryotic cells, as well as methods for detecting and quantifying bacteria in tissues. In mycology, the nutritional requirements for mating, and characterization of fungi by electrophoretic patterns of extracellular proteins are being studied. The molecular biologists are researching the loci for genetic control in the bacterial chromosome or in plasmids by development of physiologic, metabolic or antigenic alterations.

The department offers graduate programs leading to the Master of Science and Doctor of Philosophy degrees in immunology and microbiology in the areas of: medical bacteriology, virology, mycology, microbial physiology, microbial genetics, cellular immunology, tumor and transplantation immunology and immunogenetics. 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 14) and the Graduate Programs of the School of Medicine (see page 301). 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 20-30 and 301, 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 701; I M 701, 702, and 703.

## 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 701; I M 701, 702, and 703. 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)

The following courses, numbered 500-999, are offered for graduate credit. Courses numbered 500-699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090-499). Courses in the following list numbered 500-699 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 463.

### 550 Principles of Immunology. Cr. 2

Open only to medical technology program students. Material fee as indicated in *Schedule of Classes*. Lectures and laboratory exercises in basic immunology, including the relevance to human medicine. (F)

### 551 Bacteriology, Virology and Mycology. Cr. 5

Open only to juniors in Medical Technology program. Material fee as indicated in *Schedule of Classes*. 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. (W)

### 701 Fundamentals of Immunology. Cr. 3

Prereq: CHM 226 and BIO 187, or equivs. Basic concepts and current developments in immunology, including cellular and molecular aspects, regulation, and immunopathological mechanisms. (F)

### 702 Fundamentals of Microbiology. Cr. 2

Prereq: CHM 226 and BIO 220, or equivs. Basic aspects of bacteriology, genetics and mycology. (F)

### 703 Fundamentals of Virology. Cr. 2

Prereq: CHM 226 or equiv. Basic principles of virology including the nature of virus host interactions and the molecular biology of virus multiplication and genetics. (W)

### 719 (ANA 719) Neuroscience Survey. (PHC 719) (PSY 719)(BIO 719)(PSL 719). 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)

### 740 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)

### 744 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 745. Lectures and discussions on recent advances in research. (I)

### 745 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 744. Lectures and discussions on current literature and research problems. (I)

### 752 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)

### 754 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 755. Lectures and discussions on recent advances in microbiology research. (I)

### 755 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 754. Lectures and discussions on current literature and research problems. (I)

### 764 Recent Advances in Virology. Cr. 1-5

Prereq: consent of instructor. Offered for A-C grades only. May not be elected concurrently with I M 765. Lectures and discussions on recent advances in virology research. (I)

### 765 Current Trends in Virology. Cr. 1-5

Prereq: consent of instructor. Offered for S and U grades only. May not be elected concurrently with I M 764. Lectures and discussions on current literature and research problems in virology. (I)

### 775 Bacterial Metabolism. Cr. 2

Prereq: I M 702, BCH 701 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)

### 782 Molecular Genetics. Cr. 2

Prereq: I M 702 or equiv. Principles of gene transfer; physical and genetic aspects of recombination; plasmid DNA structure, genetics and regulation. (B:W)

### 784 Contemporary Topics in Immunology and Microbiology. Cr. 1-5

Lectures and discussions in selected areas. (T)

### 785 Research Conferences in Immunology and Microbiology. Cr. 1-5(Max. 20)

Offered for S and U grades only. Seminars and discussions in selected areas. (T)

### 789 Seminar. Cr. 1

Offered for S and U grades only. (T)

### 796 Research. Cr. 1-8(Max. 20)

Offered for S and U grades only. (T)

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

(T)

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

Offered for S and U grades only. (T)

# INTERNAL MEDICINE

Office: 1 Webber South—Harper—Grace Hospital; (132)5-8210  
Interim Chairperson: Liberio Tranchida

## Professors

Muhyi Al-Sarraf, Arnold R. Axelrod, Nandlal Bagchi, Laurence H. Baker, Carter R. Bishop, Michael J. Brennan, Richard W. Carlson, Stanislaw Chladek, I. Muir Clapper (Emeritus), Thomas H. Corbett, Felix Fernandez-Mardrid, Jerome P. Horwitz, Joseph Kaplan, David H. Kessel, Stephen A. Lerner, Benjamin M. Lewis, Gordon D. Luk, Lawrence G. Lum, Patricia Lynne-Davies, Robert E. Mack, Franklin D. McDonald, Alexander N. Nakeff, Ananda S. Prasad, Michael K. Samson, Lyle L. Sensenbrenner, Jack D. Sobel, James R. Sowers, Frederick N. Talmer, Liborio Tranchida, Vainutis K. Vaitkevicius, Manuel Valdivieso, Frederick A. Valeriotte, Joshua Wynne, Jiri Zemlicka

## Clinical Professors

A. Robert Arnstein, Arnold R. Axelrod, Abraham A. Becker, Nathan Brooks, Stanislaw Chladek, Jack Ferlinz, Sidney Friedlaender, Franklin E. Hull, A. Martin Lerner, Charles P. Lucas, Patricia Lynne-Davies, Hyman S. Mellen, Pritpal S. Puri, Melvyn Rubenfire, Jira Semlika, Clarence B. Vaughan, Francis M. Wilson, Sandra Wolman

## Associate Professors

Samir E. Alam, Judith C. Anderson, Joseph J. Bander, Kenneth L. Bergsman, Robert C. Burack, Pravit Cadnapaphornchai, Pranatharti H. Chandrasekar, Lawrence R. Crane, Ralph D. Cushing, Mariet M. DePlanque, John R. Ebright, Mark B. Edelstein, John F. Ensley, Brenda J. Foster, Robert R. Frank, Michael A. Geheb, Jose L. Granda, George Grunberger, Stephen J. Gunther, Lance Heilbrun, Chatchada Karanes, Riad Khatib, Joseph L. Kinzie, Julie A. Kish, Michael H. Lehmann, Donald P. Levine, Sudesh K. Mahajan, Adhip N. Majumdar, Silvana Martino, Stephen D. Migdal, Milton G. Matchnick, William G. Nengendank, Voravit Ratanatharathorn, Milagros P. Reyes, Bohumil A. Samal, Rick J. Schiebinger, James R. Spears, Zoltan G. Turi, Waldemar J. Wajszczuk, Paul H. Wooley

## Clinical Associate Professors

Ali A. Abbasi, Seymour S. Adelson, Leonard C. Alexander, Richard D. Anslow, Howard B. Appelman, Jeffrey D. Band, E. Martin Barbour, Thomas M. Batchelor, John G. Bielawski, Robert E. Birk, Robert W. Black, James C. Brown, Ralf D. Cushing, David A. Decker, Wolf F. C. Duvernoy, Mark B. Edelstein, Michael J. Federman, Sunilendu N. Ganguly, Eugene A. Gelzayd, Abraham H. Grant, Henry L. Green, Glenn I. Hiller, Samuel D. Indenbaum, Nicholas Z. Kerin, Prem V. Khilanani, Arthur Klass, Sander P. Klein, Krishna G. Kumar, Carl B. Lauter, Melvin A. Lester, Gerald N. Loomus, Luis C. Maas, James J. Maciejko, Adhip N. Majumdar, Richard S. McCaughey, William G. McDonald, Mark R. McQuiggan (Emeritus), William H. Morse, Lloyd J. Paul, Thomas J. Petz, Bohdan M. Picurko, Joseph A. Rinaldo, Arthur Rose, Everett N. Rottenberg, Saul Rosenzweig, Hershel Sandberg, John R. Schneider, Ila Shah-Reddy, Manuel Sklar, Rachel E. Turner, Ignatios J. Voudoukis, Freeman M. Wilner, Francis M. Wilson, Clyde Y. Wu, Eldred G. Zobl

## Adjunct Associate Professor

Michael J. Rybak

## Assistant Professors

Daoud K. Abu-Hamdan, Ayad M. Al-Katib, Joel L. Appel, Freda L. Ariow, Eugenio Armendariz, Mohammed N. Bazzi, Gregory E. Berger, Surjit S. Bhasin, Changiz Z. Bidari, Oscar Bigman, Alvin L. Bowles, Roderick J. Boyes, Richard M. Butler, Lavoisier J. Cardozo, Ben D.-M. Chen, Ta-Hsu Chou, Chris N. Contreas, Glenn D. Cummings, Sudhir G. Desai, Tusark Desai, Zora Djuric, Basim Dubaybo, Murray N. Ehrnpreis, Jeffrey L. Evelhoch, Mark A. Feldman, Brenda E. Field, Lawrence Flaherty, Mark S. Gesell, Robert H. Goo, Pamela R. Gordon, Bradford K. Grassmick, Hugh W. Greville, Mary C. Haller, Marilyn T. Haupt, Arthur C. Held, J. Harry Isaacson, Robert L. Iverson, Scott Jacober, David B. Jacobs,

Richard Jaszewski, Ibrahim A. Jawad, Glenn Kaatz, Sidika E. Kasim, Nathan J. Kerner, Sleman Khoury, Dana G. Kissner, Paul Z. Kissner, Pavel Kornanicky, Michael J. Kraut, Willane S. Krell, James A. Kruse, Steven J. Lavine, Joseph Levy, Chaun-Hao Lin, Warren E. Lockette, Elias K. Manavathu, Maureen D. Mayes, Nancy M. McGuire, Marc D. Meissner, Jeffery Moshier, Massoud Motamedi, Patricia Mucci-LoRusso, Bernhard F. Muller, Jesus Ortega, Rene R. Peleman, Jacob D. Peuler, Mehta M. Prabodh, Elizabeth A. Poplin, Beeravolu R. Reddy, Sushma Reddy, Bruce G. Redman, R. Stewart Robertson, Solomon I. Rosenblatt, Noreen F. Rossi, Linea L. Rydstedt, Subhash C. Sabharwal, Donald J. Salberg, Marlowe J. Schneidkraut, Howard H. Schubiner, Dale H. Sillix, Ann L. Silverman, Michael S. Simon, Mitchell R. Smith, In Young Soh, James H. Sondheimer, Joel D. Steinberg, Russell T. Steinman, Ronaldo B. Supena, Susan D. Thompson, Martin Tobi, Angela Tzelepis, Mary F. Walsh, Antoinette J. Wozniak, Ernest L. Yoder, Mark Zalupski, Paula Zemel

## Clinical Assistant Professors

Edward Adler, Chitra D. Amladi, Pierre C. Atallah, Patricia A. Ball, Lal G. Banerji, Robert L. Begle, Fernando Bermudez, Ratilal D. Bhakta, Changiz Z. Bidari, Oscar Bigman, Robert E. Bloom, Oswald Bostic, Horace F. Bradfield, John H. Burrows, Eulogio M. Caolli, Frank E. Check, Raymond C. Christensen, Eudoro Coelho, Leon A. Crumley, Robert M. Cutler, Sudhir G. Desai, Lingareddy Devireddy, Howard J. Dworkin, Kenneth J. Dziuba, Ann S. Edwards, Michael H. Eidelman, Yoram Elitsur, Reginald H. Ernst, Michael J. Federman, Richard S. Fine, John M. Formolo, Marcia Fowler, Roman Franklin, John E. Freitas, Emanuel Frisch, Howard I. Frumin, James P. Gallagher, Steven D. Gellman, Howard S. Goldberg, Mark J. Goldberg, Robert J. Griffin, Subhash C. Gulati, John R. Haapaniemi, Harcourt G. Harris, Hugh W. Henderson, Raymond Henkin, Maha H.A. Hussain, M. Colton Hutchins, David M. Jacobs, Richard Jaszewski, Sheldon M. Kantor, Bruce L. Kaplan, Gregory P. Karris, Rachel B. Keith, Vithal Kinhal, Herman Klein, Jay H. Kozlowski, Michael C. Kozonis, Vijay Kudesia, Olaf C. Kroneman, James E. Lawson, Cheng-Chong J. Lee, Hahn J. Lee, Lyla J. Leipzig, Nicholas J. Lekas, Gerald J. Levinson, Pavel L. Lomen, Berton L. London, Reuben Lopatin, Johnny T. Lu, Stephanie M. Lucas, Ivan J. Mader, Leslie Mandel, Nancy M. Mcquire, Leonard W. Melander, Ramesh K. Mohindra, Leon H. Morris, John W. Moynihian, Kurt H. Neumann, Kenneth K. Newton, Silas Norman, Jr., J. Scott Nystrom, Logan A. Oney, Harvey W. Organek, Jesus Ortega, Luis F. Ospina, Donald C. Overy, Butchi B. Paidipaty, Jeffery F. Parker, Leon Pedell, Claus P. Petermann, James K. Piper, Louis S. Pollens, Korembeth Ravikrishnan, George A. Ritter, Harold Rodner, Lewis H. Rosenbaum, Leonard J. Rosenthal, Steven B. Rubin, Vinod B. Sanghi, Leonard Schreier, Paul S. Seifert, Howard S. Shapiro, Janette D. Sherman, Richard D. Sills, Young Ho Sohn, John P. Speck, Laurence E. Stawick, Thomas B. Stock, Sheldon S. Stoffer, John M. Stone, Kornol Surakomol, Richard A. Wetzel, Craig A. Wheeler, Steven Widlansky, Steven C. Winokur, Theodore A. Wizenberg, Stanley B. Wolfe, Samir R. Yahia, Jeffrey M. Zaks, Saeed K. Zanjani

## Instructors

Elizabeth B. Arnold, Kathy L. Biersack, Ricardo Calzada, Douglas G. Campbell, Ravi Dhar, Barbara Fromm, Vijay Kudesia, Anita V. Moncrease, Carlos J. Mosca, Ramesh Padiyar, Randall L. Reher, Harald H. Reinhart, Vincent P. Reyes, Mohamed S. Siddique, Barbara Siewierski, Ann L. Silverman, Gerald Turlo, Joseph P. Uberti, Lawrence Warbasse, Nagi S. Zaki

## Clinical Instructors

Eugene J. Agnone, Fazal Ahmad, Naseer Ahmad, Syed Amouzegar, Sidney Baskin, Gary G. Bill, William L. Bristol, William R. Carion, Efrain R. Casas, Allan W. Chernick, Prabhjeet K. Chhatwal, Stephen P. D'Addario, Derek G. Desouza, Josephine P. Dhar, Michael J. Dionne, Allan E. Dobzyniak, Bruce M. Eisenberg, Juan A. Estigarribia, Elliott N. Fraiberg, Adrian T. Go, Charles G. Godoshian, Steven D. Grant, Michael A. Grishkoff, Arvind Gupta, Cheryl L. Harris, Kurt G. Hesse, Stephen D. Hoerler, Robert Hogikyan, Fikry F. Ibrahim, June Jones, Satish N. Kamath, Konstantinos Kapordelis, Edwin C. Kerr, Raphael J. Kiel, Mohan Lall, Barry A. Lesser, Murray B. Levin, Mary Martinen, Lawrence J. McNichol, Jeffery A. Meer, Rajeev Mehta, Madjid Mesgarzadeh, Boaz I. Milner, Edward Y. Mishal, Barry M. Moss, Gordon M. Moss, Thomas K. O'Brien, Ronald D. Pelavin, Michael H. Piper, Jyothi Reddy, Juan C. Rojas, Herbert

W. Rossin, Harry H. Rozenzweig, Paul E. Ruble, Cheryl Rudnick, Jagdish K. Sachdeva, Vijay Saigal, Mario D. Santiago, William C. Sharp, Alok Shukla, Oscar R. Signori, Sudarshan K. Singal, William Solomon, Freddy R. Sosa, Joseph P. Uberti, Rudy J. Vervaeke, Sudhir S. Walavalvar, Christopher D. Wilhelm, Russel H. York, Safraz J. Zaidi, Mark M. Zalupski, Syamasundera B. Zampani

#### Lecturer

A. Joyce Mooty

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 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. 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 the wards and outpatient service facilities of the 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 is offered a variety of elective courses for study in general internal medicine or in subspecialties and may 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.

# MOLECULAR BIOLOGY and GENETICS

Office: 3216 Scott Hall; 577-5323

Chairperson: Orlando J. Miller

#### Professors

Mark Evans, Morris Goodman, Lawrence I. Grossman, Peter A. Lalley, Wayne D. Lancaster, Dorothy A. Miller, Orlando J. Miller

#### Adjunct Professor

Judith Christman

#### Associate Professors

George Grunberger, Gyanendra Kumar, David I. Smith, R. Thomas Taggart

#### Adjunct Associate Professor

Leonard Lutter

#### Assistant Professors

Leon Carlock, Joan Dunbar, Craig N. Giroux, Mark P. Johnson, Stephen A. Krawetz

#### Adjunct Assistant Professors

Jeff Moshier, Ken Prenta, Katrina Trevor, J. Christopher States

## Graduate Degrees

*MASTER OF SCIENCE with a major in molecular biology and genetics*

*DOCTOR OF PHILOSOPHY with a major in molecular biology and genetics*

This department offers graduate programs in molecular biology and genetics. 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. Some emphasis is placed on human and mammalian model systems and on understanding human molecular genetic diseases.

The Department of Molecular Biology and Genetics offers programs leading to the Master of Science and Doctor of Philosophy degrees. The doctoral degree is standard in the Department; 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, Department of Molecular Biology and Genetics.

Admission to this program is contingent upon admission to the Graduate School (see page 14) and the Graduate Programs of the School of Medicine (see page 301). Applicants to the graduate program of the Department 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. Foreign 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, Department of Molecular Biology and Genetics. A personal statement is required, and an interview should be arranged with the Department, 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 20–30 and 301, respectively.

**DEGREE REQUIREMENTS:** Requirements for students enrolled in graduate degree programs are described in this bulletin on pages 20–30. Required departmental courses include MBG 701, 702, 703, and 760. Students will generally select a variety of other courses in the department, 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 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 on financial assistance, students should consult or write the Graduate Officer, Department of Molecular Biology and Genetics, Wayne State University School of Medicine, 540 East Canfield, Detroit, Michigan 48201.

## GRADUATE COURSES (MBG)

*The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.*

### 701 Molecular Biology and Genetics. Cr. 3

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

### 702 Advanced Molecular Biology and Genetics. Cr. 3

Prereq: MBG 701 or equiv. Advanced core concepts in molecular biology and genetics. (W)

### 703 Genetic Analysis. Cr. 3

Prereq: MBG 701 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)

### 709 Communication of Molecular Biology Data. Cr. 2

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

### 712 (PHC 722) Cell and Molecular Biology of Cancer Development. (C B 722). Cr. 3

Prereq: PHC 721; BCH 701 or CHM 762 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)

### 714 Nucleic Acids. Cr. 2

Prereq: MBG 701 and 702 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)

### 740 Molecular Biology of Cellular Signalling. Cr. 2

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

### 746 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)

### 751 Molecular Biology of Macromolecular Interactions. Cr. 2

Prereq: MBG 701; consent of instructor. Structure and interactions of proteins and nucleic acids. (B)

### 756 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)

### 758 Molecular Genetics of Somatic Cells. Cr. 2

Introduction to behavior, modification, and selection of somatic cells in culture; their use in studying mutation, gene expression and regulation; location of specific genes on chromosomes. (B)

### 760 Advanced Human Genetics. Cr. 3

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

### 765 Mammalian Molecular Cytogenetics. Cr. 2

Prereq: consent of instructor. Structure of mammalian chromosomes and methods for its study; chromosome functions. (B)

### 770 New Techniques in Molecular Biology. Cr. 3

Prereq: background in biochemistry, prokaryotic molecular biology, eukaryotic molecular genetics. New technologies and techniques: rapid sequencing, chromosome walking, construction of recombinatorial linkage maps, construction of physical maps for eukaryotic chromosomes. (B)

### 784 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)

### 785 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)

### 789 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)

**868 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)

**899 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)

**999 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)



# NEUROLOGY

*Office:* 6E University Health Center; 577-1242  
*Chairperson:* Robert P. Lisak

## *Professors*

Joyce A. Benjamins, Paula Dore-Duffy, Peter A. LeWitt, Robert P. Lisak, Michael A. Nigro

## *Clinical Professor*

John Gilroy

## *Associate Professors*

Joshua E. Adler, Sheldon Kapen, Patricia M. Moore, Patti L. Peterson, Narayan P. Verma, Danny Watson

## *Clinical Associate Professors*

Paul A. Cullis, John T. McHenry, Louis E. Rentz, Sheila Sheehan, Janusz J. Zielinski

## *Adjunct Associate Professor*

Ivan LuQui

## *Assistant Professors*

Geoffrey Barger, Clare Braun Hashemi, Omar Dabbagh, Charissa A. Dyer, A. Robert Spitzer, Charise Valentine

## *Clinical Assistant Professors*

Lourdes V. Andaya, David Benjamins, Chandrakant Desai, Jose U. DeSousa, Ljubisa Dragovic, Raina M. Ernstoff, Cesar D. Hidalgo, Demetrios Kikas, Bruce Kole, M. Zafar Mahmud, Jasper McLaurin, Leonard Sahn, Robert C. Schwyn, Norman Wechsler

## *Adjunct Assistant Professors*

Bradley N. Axelrod, Bernard A. Bast, Laurace E. Townsend

## *Clinical Instructors*

Jacob Danial, Jay Kaner, David Lustig, Ayman Rayes, Saleem Tahir, Bharat M. Tolia

## *Associates*

Ramon Berguer (General Surgery), Leon Carlock (Molecular Biology and Genetics), Robert F. Erlandson (Electrical and Computer Engineering), Morris Goodman (Anatomy), John R. Ingall (Surgery), Pamela A. Keenan (Psychiatry), William J. Kupsy (Pathology), Chuan-Pu Lee (Biochemistry), Elliot Luby (Psychiatry), Jeffrey L. Ram (Physiology), Helene Rauch (Immunology and Microbiology), 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 fourth 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, 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

### Professor

L. Murray Thomas

### Associate Professor

Alexa Canady, William R. Darnody, Robert E.M. Ho, Lucia Zamorano

### Assistant Professors

William F. Ganz, Steven D. Ham, Jonathan E. Hodes, Anthony Martino, Asad Mazhari

### Clinical Assistant Professors

Donald Austin, Blaise U. Audet, Gerald A. Moore, Antonio A. Quiroga

### Associates

James Hazlett (Neuroanatomy), Warren Lockett (Endocrinology), Gerald Mitchell (Neuroanatomy), Lutz Nolte (Biomechanical Engineering), Patty Peterson (Neurology) David Schneider (Neuropharmacology), Thomas Spoor (Neuro-ophthalmology), Harvey I. Wilner (Neuroradiology)

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 curricula 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 and Harper-Grace Hospital are the primary clinical facilities for undergraduate instruction by this department.

A five-year residency training program in neurosurgery is conducted by the Department and based at the following University-affiliated hospitals: Harper-Grace Hospital, Detroit Receiving Hospital and the Children's Hospital of Michigan. The research interests of the department are concentrated primarily in the neurological mechanisms involved in, and protection against, head and spine injury. 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; (132)5-7282  
Chairperson: David B. Cotton

## Professors

Ernest L. Abel, Joel Ager, S. Jan Behrman, Yves Brans, David B. Cotton, Gunter Deppe, Mark Evans, W. Lancaster, Eberhard Mammen, Federico Mariona, Orlando Miller, Kamran Moghissi, Marilyn Poland, Roberto Romero, Anthony Sacco, Alfred Sherman, Jack Sobel, Robert Sokol, Joan Stryker (Emeritus)

## Clinical Professor

Silvio Aladjem

## Associate Professors

D. Randall Amant, Yoav Ben-Yoseph, Sidney Bottoms, Michael Church, Milton Goldrath, Roger Hertz, Janet Hankin, John Hannigan, George Kazzi, Wesley Lee, Robert Lorenz, David Magyar, Vinay Malviya, Bernard Mandelbaum, E. Ralph Margulis, S. Gene McNeeley, David Schwartz, Yoram Sorokin, Marippa Subramanian, Edward Yurewicz, Robert Welch

## Clinical Associate Professors

William Floyd, Sami Guindi

## Assistant Professors

Charla Blacker, Stanley Berry, Richard Bronsteen, William Chavis, Carl Christensen, Christine Comstock, Mitchell Dombrowski, Arie Drugan, Kenneth Ginsburg, Gregory Goyert, Lori-Linell Hall, Mark Johnson, Theodore Jones, David Knak, Marie Hayes, Minuchehr Kashef, Randall Kelly, Don Krohn, Richard Leach, John Malone, Jr., Curtiz Meriwether, Ruth Moore, John Musich, Sai Park, Mary Helen Quigg, Richard Reid, David Richardson, Alan Sacks, Valiollah Salari, Dwight Saunders, Marjorie Treadwell, Paul von Oeyen, Honor Wolfe, Carol Zajac

## Clinical Assistant Professors

Anan Abdelrahman, Saleh Adel, Mohammed Ariani, Mohammed Aussie, Melvem Ayers, Firooz Banooni, Mehmet Baryam, Danny Benjamin, Murray Brickman, David Calver, S. Leonard Cohn, Julius Combs, Leonard Dorey, James Gell, Leon Hochman, Eli Isaacs, Stanislaw Jaszczak, William Jevons, Cecil Jonas, James Kommesser, Chitranjan Lall, Henry Maicki, Paul Nehra, Eugene Otlewski, Addison Prince, Michael Prysak, N.S. Rangarajan, Michael Roth, Saeed Saleh, George Shade, John Tulloch, James Wardell, Dottie Watson, Irvin Wilner, David Zalenski,

## Fellows

Janie Hirata, Mordechai Hallak, Nelson Isada, Russel Jelsema, Veronica Mallett, Lisa McIntosh, Valerie Montgomery-Rice, Peter Pryde, Yolanda Renfro, Abdelaziz Saleh, Aida Shanti, Ramada Smith

## Clinical Instructors

Allen Berlin, Jay Berman, Donald Blitz, Ronald Cheek, Chin-Chuh Chen, Harry Doerr, Jeannette Espy, James Labes, David Lipschutz, John Malone, Michael Salesin, Franklyn Seabrooks, Eugene Snider, Joseph Watts, Seymour Ziegelman

## Associates

Hassan Amirikia (Family Medicine), Samuel Brooks (Biochemistry), Danica Dabich (Biochemistry), Chirpriya Dhabuwala (Urology), Gerhard Endler (Anesthesiology), Albert Goldstein (Radiology), Charles Lucas (Internal Medicine), Kazutoshi Mayeda (Biology), Eugene Perrin (Pathology), Antal Solyom (Psychiatry)

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/fertility, 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 Harper-Grace—in addition to other affiliated hospitals: William Beaumont, Oakwood, Providence, St. John's and Sinai. 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)

The following courses, numbered 500-999, are offered for graduate credit. Courses numbered 500-699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090-499). Courses in the following list numbered 500-699 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 463.

### 710 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. (Y)

# OPHTHALMOLOGY

Office: 101 Kresge Eye Institute; 577-1320  
Chairperson: Robert S. Jampel

## *Professors*

Edward S. Essner, Robert N. Frank, Robert S. Jampel, James E. Puklin,  
Hitoshi Shichi, Dong H. Shin

## *Adjunct Professors*

Venkat N. Reddy, Nalin J. Unakar

## *Associate Professors*

John W. Cowden, Ignaz M. Rabinowicz, Thomas C. Spoor, Fred Zwas

## *Assistant Professors*

Deborah Iverson, Wen-Lang Lin, Mark L. McDermott, Dian X. Shi

## *Clinical Professor*

Conrad L. Giles

## *Clinical Associate Professors*

John D. Baker, David Barsky, Mark S. Blumenkranz, Jo D. Isaacson,  
Raymond R. Margherio, Michael T. Trese, George A. Williams

## *Clinical Assistant Professors*

Paul H. Ernest, Brian C. Joondeph, Howard C. Joondeph, Patrick L.  
Murphy, Frank A. Nesi, John M. Ramocki, Marc J. Siegel, Sidney L.  
Stone, Floyd S. Tujkel, William L. Willoughby

## *Clinical Instructors*

Michael Y. Greenley, Joel A. Miller, Alan M. Mindlin, Robert J. Netzel,  
Hanna Obertynski, Joel M. Pelavin, John M. Ramocki, Shirley T. Sherrod,  
Les I. Siegel, Norman Zucker

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 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. Research fellowships in corneal disease and transplantation, glaucoma and the plastic surgery of the eye 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, Hutzel Hospital; 745-8248  
Chairperson: Robert H. Fitzgerald, Jr.

## *Professor*

Robert H. Fitzgerald, Jr., Arthur Manoil II (Clinical), Carl L. Stanitski (Clinical)

## *Adjunct Professor*

Albert I. King

## *Associate Professors (Clinical)*

Deborah F. Bell, Richard L. LaMont, Jeffrey W. Mast, Lawrence G. Morawa, James R. Ryan, Gino G. Saliccioli, Robert A. Teitge

## *Clinical Associate Professors*

Maxwell B. Bardenstein, James J. Horvath, Robert S. Levine, Henry H. Sprague

## *Assistant Professors (Clinical)*

Stephen P. DeSilva, Gregory M. Georgiadis, Hansjurg J. Holdener, Steve A. Petersen, Peter J. Spohn

## *Clinical Assistant Professors*

Jerome V. Ciullo, Gary G. Gilyard, Milton M. Green, Eugene D. Horrell, G. Richard Jones, Shin-Young Kang, Peter R. Miller, David M. Montgomery, Peter Palmer, Steven Plomartis, L. James Roy, William H. Salot, L. Carl Samberg

## *Adjunct Assistant Professor*

King Hay Yang

## *Clinical Instructors*

Edward F. Burke, Walter L. Everett, James J. Faremouth, William R. Fulgenzi, Michael J. Geoghegan, Edward S. Jeffries, E. Michael Krieg, Christopher L. Lee, Ronald E. Little, Leo D. Ottoni, Jr., John C. Padgett, Carl E. 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: 5E University Health Center, 4201 St. Antoine; 577-0804  
Chairperson: Robert H. Mathog

## Professors

Arnold M. Cohn, Dennis G. Drescher, John R. Jacobs, Robert H. Mathog

## Clinical Professor

Ned I. Chalot

## Associate Professor

Sandra L. Hamlet

## Clinical Associate Professors

T. Manford McGee, Richard R. Royer, George Visconti

## Assistant Professors

Richard L. Arden, Brian W. Blakley, Marian J. Drescher, Steven C. Marks,  
Mark T. Marunick, Dimitri Pitovski, Wayne S. Quirk

## Clinical Assistant Professors

Dennis Bojrab, Pierre F. Giammanco, John W. Grigg, Roy Goodman,  
Edward B. Harrington, H. John Jacob, Francis Leveque, James McKenna,  
Daniel D. Megler, William J. Rice, Michael E. Rollins, Eugene Rontal,  
Michael Rontal, David A. Scapini

## Adjunct Professor

Darlene Mood

## Adjunct Associate Professor

Daniel Martin

## Adjunct Assistant Professors

Susan M. Fleming, Maria C. Jackson-Menaldi

## Clinical Instructors

Seth Cohen, Edward G. Jankowski, Edward D. Sarkisian, Douglas D.  
Strong

## Adjunct Instructors

William E. Loechel, Robert G. Rosen

## 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

Carlos Bedrossian, William J. Brown, John D. Crissman, Esther H. Dale (Emerita), Filiberto E. Giacomelli, George J. Kaldor, Eberhard F. Mammen, Dorothy A. Miller, Margarita Palutke, Eugene V. Perrin, Werner U. Spitz, Roger J. Thibert, Lawrence M. Weiner, Joseph Wiener, Sandra R. Wolman, Bennie Zak

## Clinical Professors

Jay Bernstein, James W. Lander, Rosser L. Mainwaring, Barbara F. Rosenberg, Julius Rutzky, Richard H. Walker

## Adjunct Professor

Gloria H. Heppner

## Associate Professors

Majid A. Alousi, Barbara J. Anderson, Joseph D. Artiss, Surath K. Banerjee, Dinyar B. Bhathena, A. Joseph Brough, Jan Cejka, Balvin H.L. Chua, Chung-Ho Chang, Clement A. Diglio, Merlin E. Ekstrom, Suzanne E.G. Fligiel, Karel Kithier, Tuan H. Kuo, William J. Kupsky, W. Dwayne Lawrence, Stanley S. Levinson, Kenneth C. Palmer, Faziul H. Sarkar

## Clinical Associate Professors

Jacob E. Briski, John F. Fennessey, Kenneth A. Greenawald, Khang-Loon Ho, Frederick L. Kiechele, Herbert I. Krickstein, Noel S. Lawson, Aaron Lupovitch, Gerald H. Mandell, John T. Piligian, Boris K. Silberberg, Richard J. Zarbo,

## Adjunct Associate Professor

Emanuel Epstein

## Assistant Professors

Teisa An, Raj D. Bhan, Harish Budev, Maria E. Dan, Alina M. Domanowska, Marilyn R. Fairfax, Lucie Gregoire, Patrick M. Long, Anwar N. Mohamed, Faisal Qureshi, Alistair S. Sundareson, Daniel W. Visscher

## Clinical Assistant Professors

Gary S. Assarian, Billy Ben Baumann, Edward G. Bernacki, Jr., Sajal P.L. Choudhury, Marilee H. Frazer, Barry R. Herschman, Mujtaba Husain, Allen J. Levine, John H. Libcke, Denis A. Luz, Lawrence E. Nathan, Jr., Anthony C. Noto, Joseph T. Powaser, Candace A. Rich, Thomas O. Robbins, Marie F. Tenazas-Raval, Alexander S. Ullmann, Frank B. Walker, John C. Watts, Richard K. Wesley, Richard M. Zirkin

## Adjunct Assistant Professors

Carolyn S. Feldkamp, George A. Fisher, Alvaro A. Giraldo

## Instructors

Ghada Khatib, Joseph R. Merline

## Clinical Instructors

Michael P. Abrash, Bader J. Cassin, Suresh K. Gehani, Gilbert E. Herman, Smita K. Joshi, Sawait Kanluen, Mark D. Kolins, Thomas F. McCormick, Donald R. Peven, John Schaldenbrand, Elizabeth Sykes

## Associates

Robert O. Bollinger, Edward S. Essner

## 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 pathology and clinical laboratory sciences 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 14 and 301, respectively. Applicants to this doctoral program should have 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, with an advanced test in either chemistry or biology. 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 20-30 and 301, respectively.

**DEGREE REQUIREMENTS:** Requirements for students enrolled in the doctoral degree programs are described on pages 27 and 301. Students are expected to demonstrate their understanding of a core curriculum, consisting of biochemistry, cell biology, clinical biochemistry, comparative pathology, general pathology, immunology and microbiology, medical statistics, microanatomy, molecular biology, molecular pathology, pharmacology, 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, comparative pathology, cytopathology, forensic pathology, gynecologic/obstetric pathology, molecular biology and genetics, nephropathology, neurobiology and neuropathology, perinatal pathology, pulmonary and environmental pathology, tumor biology and immunology, virology and tissue culture. In the field of clinical laboratory sciences the areas of study include: clinical pathology, clinical chemistry, clinical microbiology, hematopathology and clinical immunology, immunochemistry and immunopathology, immunogenetics and cytogenetics, immunohematology, thrombosis and hemostasis.

## 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.

## GRADUATE COURSES (PTH)

*The following courses, numbered 500-999, are offered for graduate credit. Courses numbered 500-699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090-499). Courses in the following list numbered 500-699 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 463.*

**500 Fundamentals of Pathology. Cr. 2**  
Coreq: ANA 0301. Open only to allied health students. Fundamentals of tissue injury and repair. (Y)

**700 General Pathology. Cr. 5**  
Prereq: BCH 701, BCH 703; PSL 752, PSL 753; ANA 703, ANA 704. 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)

**705 Introductory Hematology. Cr. 2**  
Prereq: enrollment in affiliated pathology program. (Y)

**706 Principles of Clinical Pathology. Cr. 3**  
Prereq: PTH 700. Topics include various pathological approaches to the study and diagnosis of human disease states. Emphasis on theoretical rationale prompting choice of laboratory investigations into particular diseases. (B:W)

**708 Special Topics In Pathology. Cr. 1-15**  
Prereq: PTH 700. 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)

**713 Neuropathology. Cr. 2**  
(I)

**715 Pathology of Respiratory Tract. Cr. 2**  
Prereq: M.D. degree or PTH 700. (Y)

**718 Cardiovascular Pathology. Cr. 2**  
Prereq: PTH 700, ANA 706. Gross, microscopic and submicroscopic anatomy and pathophysiology of cardiovascular disease, both human and experimental. (Y)

**725 Instrumentation in Clinical Biochemistry. Cr. 2**  
Prereq: BCH 701, BCH 703. (B:W)

**733 Pathology of the Kidney. Cr. 2**  
Prereq: M.D. degree or PTH 700. 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)

**734 Introduction to Electron Microscopy. Cr. 3**  
Prereq: ANA 703, ANA 704. 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)

**738 Medical Cytogenetics. Cr. 2**  
Prereq: PTH 700. (B:F)

**741 Medical Cytogenetics Laboratory. Cr. 2**

Prereq: PTH 738. Intensive exposure to current cytogenetic techniques, their performance and applicability to various pathological states. (B:W)

**745 Comparative Pathology. Cr. 3**

Prereq: PTH 700. 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. (B:W)

**746 Radioimmunoassay: Principles and Applications. Cr. 3**

Prereq: BCH 701, BCH 703. Principles of radioimmunoassay and competitive binding assay, related physics, instrumentation and radiation safety. Specific examples of tests available and interpretation of results. (I)

**760 Molecular Pathology Cr. 3**

Prereq: MBG 701 or equiv. Advanced graduate course on the molecular basis of several diseases and new developments in molecular biology research. (Y)

**777 Clinical Biochemistry I. (BCH 777). Cr. 2**

Prereq: BCH 701 or equiv. Practice of clinical biochemistry in a hospital or reference laboratory; background in direction of clinical chemistry laboratories. (B:F)

**778 (BCH 778) Clinical Biochemistry II. Cr. 2**

Prereq: BCH 701 or equiv., BCH 777. Continuation of PTH 777. Clinical biochemistry background in the direction of hospital or reference laboratories. (B:W)

**779 Clinical Chemistry Laboratory Methodology and Administration. Cr. 5**

Prereq: PTH 777, 778. 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)

**789 Seminar. Cr. 1**

Offered for S and U grades only. (Y)

**790 Directed Study in Clinical Pathology and Pathologic Anatomy. Cr. 2 (Max. 12)**

(Y)

**999 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: 3B51 Children's Hospital; (132)5-5870

Chairperson: Alan B. Gruskin

## Professors

Yoav Ben-Yoseph, Yves Brans, Ralph Cash, Flossie Cohen, Sanford Cohen, James W. Collins, Adnan Dajani, Zia Farooki, Larry Fleischmann, Alan B. Gruskin, James Gutai, Joseph Kaplan, Ralph Kauffman, Lawrence Kuhns, Lawrence Lum, Jeanne Lusher, Enrique Ostrea, William Pinsky, Yaddanapudi Ravindranath, Ashok Samaik, Lyle Sensenbrenner, Seetha Shankaran, Charles Whitten

## Clinical Professors

Ruben Kurnetz, Jeffrey Maisels, Natalia Tanner

## Associate Professors

Gary Amundson, Regine Aronow, Basim Amar, Erawati Bawle, Mary Bedard, Kanta Bhambhani, Sheldon Brenner, Sandra Clapp, Barbara Cushing, Shermine Dabbagh, Virginia Delaney-Black, Devendra Deshmukh, Paul Giblin, Nestor Ilagan, Peter Karpawich, Michael Nigro, Burton Perry, Daniel C. Postellon, Ward Peterson, Arthur Robin, Norman Rosenberg, Vasu Tolia, Indira Warriar

## Clinical Associate Professors

Bassem Bashour, Daniel Batton, George Blum, Bishara Freij, Nasir Haque, Ronald Holmes, Charles Inniss, Susumu Inoue, Thaddeus Joos, Gerald Katzman, James C.S. Perrin, Ali Rabhani, Thomas Riggs, Richard Ryszewski, Sharada Samaik, M.C. Thirumoothi, Arthur Thompson, Seetha Uthappa

## Assistant Professors

Ibrahim Abdulhamid, Steve Abella, Ellen Alano, Mary Lu Angelilli, Alesca Backos, Marquita Bedway, Michelle Berry, Nirmala Bhaya, Lisa Braun, Omar Dabbagh, Edward Dabrowski, Jay Eastman, Howard Fischer, Yvonne Friday, Marcia Gilroy, Sudershan Grover, Cheryl Hack, James Heinsimer, Man-Ching Hsu, Richard Humes, Bharati Hukku, James Jarvis, Nadya Kazzi, Susan Kessler, Stephen Knazik, Ganesh Konduri, Svetlana Leytes, Keh-Chyang Liang, Mary W. Lieb-Lai, Chuan-Hao Lin, Hernando Lyons, D. Gail May, Kathleen Meert, Anita Moncrease, Ellen Moore, Marva Morris, Francis Nwankwo, Helen Papaioanou, Stephen Paridon, Normis Polk, S. Bhimsen Rao, Robert Ross, Robert Rothermel, Howard Schubiner, Patricia Siegel, Kalavathy Srinivasan, Mark Stout, Stephen Sturman, Helen Tigchelaar, Mary Ann Timmis, Charise Valentine, Sophie Womack, Kathryn Wright, Hashim Yar

## Clinical Assistant Professors

David Aughton, David Benjamins, E. Dalton Black, Marshall Blondy, Frank Chaten, Avinash Chawla, Rajendra Desai, Michael A. Facktor, Seymour Gordon, Herman Gray, Ceres Guzman-Morales, John P. Harm, Sabrina Heidemann, Paul Holtrop, William Howard, Theresa Hsu, Karen Hufnagle, Ann-Mare Ice, Shahida Khan, Josef Kobiljak, Steven Kreshover, Michael Lang, Irving Miller, Wallace Nichols, David Obudzinski, Robert Rooney, William Rubinoff, Homer Ryan, Elliott Samet, Hadi Sawaf, Robert Scherer, Stanford Singer, Allen Sosin, Harvey Stein, Sharon Tice, Gerald Timmis, Nestor J. Truccone, Geetha John-Valamparampil, Allen Weiner, Joyce Wolf

## Adjunct Assistant Professors

Robert Bollinger, Thomas Koepke, Andrew Maltz, Steven Spector

## Clinical Instructors

Cristie Becker, Susan Bellefleur, Robert Cooper, Eugene Crawley, David Dinger, Daniel Eggleston, Filomena Farooki, Sisinio Ferandos, Nathan Firestone, James Fordyce, Gayatri Garg, Rao Guthikonda, Earl Hartwig, Mary Kokosky, Seymour Krevsky, Jay Mitchell, Robert Roman, Jorge

Rose, Mark Roth, Daniel Schnaar, Lynn Smitherman, Melisande Wornack, Petronio Yadao

### *Adjunct Instructor*

Barbara Cash

### *Associates*

A. Joseph Brough (Pathology), Jan Cejka (Pathology), Chung-Ho Chang (Pathology), Joseph Fischhoff (Psychiatry), Linda Hryhorczuk (Psychiatry), Michael Klein (Surgery), Christopher Lee (Orthopedic Surgery), Patrick Long (Pathology), Alan Perlmutter (Urology), Eugene Perrin (Pathology), Arvin Philippart (Surgery), M. David Poulik (Immunology and Microbiology), Joseph Reed (Radiology), Julius Rutzky (Pathology), Thomas Slovis (Radiology)

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 technique of pedagogy used is built around the association of students with a principal instructor who supervises his/her group both in the patient units and the clinics. 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: Paul F. Hollenberg

### *Professors*

Gordon F. Anderson, Dharam P. Chopra, Saradindu Dutta, Harold Goldman, Paul F. Hollenberg, David Kessel, Bernard H. Marks (Emeritus), Raymond F. Novak, Bonnie F. Sloane, Arun Wakade

### *Adjunct Professors*

Michael J. Bannon, Fusao Hirata

### *Associate Professors*

Vincent Chau, George E. Dambach, Ronald Hines, Mary Ann Marrazzi, Roy B. McCauley, John Reiners, David R. Schneider, Eugene P. Schoener, Akio Yamazaki, Russell K. Yamazaki

### *Adjunct Associate Professors*

Matthew P. Galloway, Francis J. White

### *Assistant Professors*

Zora Djuric, David B. Jacobs, Lawrence H. Lash, D. Gail May, Hai-Young Wu

### *Adjunct Assistant Professors*

Larry H. Matherly, Michael Olson

## 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 14) and the Graduate Program of the School of Medicine (see page 301). 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 20–30 and 301, 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)

*The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.*

### 503 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)

### 634 Chemical Basis of Pharmacology. (CHM 634)(BIO 684). Cr. 3

Prereq: CHM 226 and BIO 151 or equiv. Mechanisms of action and metabolism of commonly-used drugs and toxic substances from the cellular level to whole biological systems. (Y)

### 701 Pharmacology Lecture. Cr. 4

Prereq: PSL 752, PSL 753, BCH 701. Introductory presentation of drug actions on living tissue. (W)

### 719 (ANA 719) Neuroscience Survey. (1M 719) (PSY 719)(BIO 719)(PSL 719). 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)

### 721 Principles of Cancer Biology. (C B 721). Cr. 3

Prereq: BCH 701 or CHM 762 or equiv. 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. (Y)

### 722 Cell and Molecular Biology of Cancer Development. (C B 722)(MBG 712). Cr. 3

Prereq: PHC 721; BCH 701 or CHM 762 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)

### 723 Breast Cancer. (C B 723). Cr. 2

Prereq: PHC 721. Detailed examination of the normal physiology of breast tissue and the pathological process leading to cancer development; description of means by which this tumor type is clinically treated. Integration of the various disciplines of cancer research by focusing on a particular organ system. (B)

### 724 Principles of Cancer Chemotherapy. (C B 724). Cr. 2

Prereq: BCH 701 or CHM 762, 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)

### 752 Cellular Pharmacology. Cr. 2

Advanced presentation of basic drug actions as they affect cells, membranes and macromolecules. (B)

### 753 Neuropharmacology I. Cr. 3

Prereq: PHC 750. Synthesis and release of neurotransmitters, analysis of transmitter-receptor interaction and cellular response, emphasis on peripheral autonomic systems. Offered alternate years. (B)

### 754 Neuropharmacology II. Cr. 3

Prereq: PHC 753. Study of drug actions on control mechanisms in the central nervous system, with special emphasis on neuroendocrine and autonomic function. Offered alternate years. (B)

### 757 Cardiovascular Pharmacology. Cr. 2

Prereq: PHC 750. Modern concepts of the action of drugs on the heart and circulation with emphasis on molecular and biochemical mechanisms involved. Offered alternate years. (B)

### 758 Biochemical Pharmacology. Cr. 3

Prereq: introductory biochemistry. Current topics in biochemical pharmacology. Offered alternate years. (B)

### 770 Recent Developments in Pharmacology. Cr. 1–4(Max. 12)

Prereq: consent of instructor. Selected topics and readings in pharmacology. (T)

### 771 Individual Studies in Pharmacology. Cr. 1–8(Max. 8)

Prereq: consent of instructor. Offered for S and U grades only. (T)

### 789 Seminar. Cr. 1–3(Max. 12)

Offered for S and U grades only. Assigned readings and student presentation; faculty and outside speakers. (Y)



796 Research. Cr. 1-15(Max. 15)

Prereq: consent of instructor. Special research topics in specified areas arranged with individual faculty members. (T)

899 Master's Thesis Research and Direction. Cr. 1-8(8 req.) (T)

999 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, Joseph C. Honet, Mitchell Rosenthal

### *Clinical Professor*

Myron M. LaBan

### *Associate Professors*

Steven R. Geiringer, Harry O. Ingberg

### *Associate Professors, Full-Time Affiliate*

Frank Blumenthal, Marcel Dijkers

### *Clinical Associate Professors*

Gary Chodoroff, Jane C.S. Perrin, Kenneth Richter, Saul Weingarden

### *Assistant Professors*

Steven R. Hinderer, Nancy R. Mann

### *Assistant Professors, Full-Time Affiliate*

John Bemick, Edward Dabrowski, Nancy DeSantis, Maury Ellenberg, Ann Gibbons, Robert Guenther, Wook Kim, Fred Lamb, Peter Lichtenberg, Mildred Matlock, Scott Millis, William Restum, Mark Rottenberg, Louanne Stratton, Madan Telikicherla, Teresa Thompson, John Tonkovich, Edward Trachtman, Christine Wellman

### *Clinical Assistant Professors*

Jack Belen, M. David Jackson, Robert L. Joynt, Dong W. Lee, Sung Jin Lim, Joseph Meerschaert, David Portee, James Raikes, Ronald Taylor

### *Instructors, Full-Time Affiliate*

Adel El-Magrabi, Carla Morton, Asit Ray

### *Clinical Instructors*

Syed Iqbal, Michael G. Sperl

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.

# PHYSIOLOGY

Office: 5374 Scott Hall; 577-1520

Chairperson: John W. Phillis

## Professors

Robin A. Barraco, Paul C. Churchill, Joseph C. Dunbar, Jr., Piero P. Foa (Emeritus), Richard R. Gala, Raymond L. Henry, Felix T. Hong, Eberhard F. Manmen, Jan Nyboer (Emeritus), Lowell E. McCoy, David G. Penney, John W. Phillis, James A. Rillema, Walter H. Seegers (Emeritus), Daniel A. Walz

## Associate Professors

David M. Lawson, Jeffrey L. Ram, James A. Sedensky, Douglas R. Yingst

## Assistant Professors

Ricardo Brown, Donal O'Leary, Debra F. Skafar, Dixon Woodbury

## Assistant Professor—Research

Michael H. O'Regan

## Clinical Professor

Allen Silbergleit

## Adjunct Associate Professors

Anil K. Bidani, David R. Pieper

## Adjunct Assistant Professors

Steven J. Keteyian, Michael D. Wider

## Associate Professor, Full-Time Affiliate

Barry A. Franklin

## Assistant Professor, Full-Time Affiliate

Thomas R. Brown

## Associates

Khalid M. Ataya, Samuel C. Brooks (Biochemistry), Elizabeth J. Dawe (Surgery), George Granberger (Internal Medicine), Joseph Levy (Internal Medicine), William Lockette (Internal Medicine), Patricia Lynne-Davies (Internal Medicine), Franklin McDonald (Internal Medicine), Jerry A. Mitchell (Anatomy), Ruth T. Moore (Obstetrics/Gynecology), Alexander Nakeff (Internal Medicine), William G. Negendank (Internal Medicine), Howard Normile (Psychiatry), Jacob D. Peuler (Internal Medicine), Arthur C. Santora (Internal Medicine), Rick J. Schiebinger (Internal Medicine), James R. Sowers (Internal Medicine), Marappa G. Subramanian (Obstetrics and Gynecology)

## 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. The Master of Science program is recommended for students who already hold the degree of Doctor of Medicine. No duplication of work completed for the Doctor of Medicine degree may be included in the master's degree program. Students holding the Doctor of Medicine degree with intent to continue toward the Doctor of Philosophy degree are advised to select courses which lead to self-development and specialization in some field of science. The preferred areas are physics, chemistry, mathematics, bacteriology and anatomy.

Students planning a career in teaching or research in physiology who have not earned the degree of Doctor of Medicine are advised to complete the requirements for the Doctor of Philosophy degree. For these students the degree of Master of Science is of limited practical use in that it may not qualify them for a suitable professional position.

**Admission** to this program is contingent upon satisfying the requirements of the Graduate School (see page 14) and the Graduate Programs of the School of Medicine (see page 301). 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 20-30 and 301, 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 number of qualified students. All 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)

The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.

### 501 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)

### 555 Physiologic Anatomy. Cr. 3

Prereq: biology background preferred. Not open to graduate anatomy students. Material fee as indicated in *Schedule of Classes*. Basic concepts of anatomy as they relate to physiologic function. Intended to give an anatomy foundation for graduate level physiology courses. (S)

### 601 Physiology of Exercise. (P E 631). 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)

### 701 Basic Graduate Physiology Lecture I. Cr. 3

Prereq: organic chemistry, introductory biology and physics, graduate program enrollment. Introduction to basic human physiology. (F)

### 702 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)

### 703 Basic Graduate Physiology Lecture II. Cr. 3(Max. 6)

Prereq: organic chemistry, introductory physics, biology background; current enrollment in graduate degree program. Material fee as indicated in *Schedule of Classes*. Functional mechanisms of the human body. (F,W)

### 704 Basic Graduate Physiology Laboratory II. Cr. 3 (Max. 6)

Prereq: enrollment in graduate program in physiology; coreq: PSL 703. Material fee as indicated in *Schedule of Classes*. Experimental physiology of organ systems. Two semester course; two credits each semester. (F,W)

### 705 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)

### 709 Essays in Physiology. Cr. 1

Prereq: enrollment in physiology graduate program; coreq PSL 701 or 703. Students write topic-specific essays based on examination content in lecture courses PSL 701 or PSL 703. (F,W)

### 719 (ANA 719) Neuroscience Survey. (PHC 719) (I M 719)(PSY 719)(BIO 719). Cr. 3

Interdisciplinary overview of principles of neurosciences. (F)

### 740 Advanced Respiratory Physiology. Cr. 2

Prereq: PSL 752, 753. 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)

### 750 Developmental Physiology. Cr. 3

Prereq: general physiology, embryology. A study of organ physiology from the developmental viewpoint. (F)

### 755 Advanced Renal Physiology. Cr. 2

Prereq: PSL 752 or equiv. A detailed study of the physiological mechanisms promoting homeostasis of the body fluid volumes and ionic composition in the mammal. (F)

### 759 Blood. Cr. 3

Prereq: PSL 752, 753. Details of blood enzymology including hemostasis, blood coagulation, complement system, and fibrinolysis. (W)

### 760 Advanced Cardiovascular Physiology. Cr. 2

Prereq: PSL 752. Basic principles of heart dynamics and control techniques in measurement of cardiac function. (F)

### 764 Cell Physiology. Cr. 3

Correlations between ultrastructure, biochemistry and functions in normal and pathological cells. (W)

### 766 Neurophysiology. Cr. 3

Prereq: PSL 752. Anatomy and physiology of the neuron and the mammalian nervous system. Correlations of central nervous system functions and electrophysiology. (F)

### 768 Endocrinology. Cr. 4

Prereq: PSL 701 and 703. A detailed emphasis on current research. Student participation encouraged; each student required to present a one hour lecture. (W)

### 783 (M T 702) Pathophysiology of Hemostasis. Cr. 2

Prereq: graduate of medical technology program. (F)

### 788 Special Problems in Physiology. Cr. 1–8(Max.8)

Prereq: written plan of study. Topics individually arranged with faculty. (T)

### 789 Seminar. Cr. 1(Max. 6)

For graduate students in physiology. Participation in weekly departmental seminars. (F,W)

### 796 Arranged Research. Cr. 1–15(Max. 15)

Prereq: written plan of study. Graduate level experiences in research techniques. Special research topics in specified areas arranged with individual faculty member. (T)

### 899 Master's Thesis Research and Direction. Cr. 1–8(8 req.)

Open only to graduate students in physiology. (T)

### 999 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

Office: 9B-21 University Health Center; 577-1808  
Interim Chairperson: Joseph Fischhoff

## Professors

Michael Bannon, Louis Chiodo, Joseph Fischhoff, Robert Freedman, Gregory Kapatos, Donald Kuhn, Peter LeWitt, Elliot Luby, Helene Lycaki, Robert Pohl, Alan Rosenbaum (Clinical), Norman Rosenzweig, Gerald Sarwer-Foner, Calvin E. Schorer, Natraj Sitaram, Francis J. White

## Clinical Professors

Elissa Benedek, Alexander Grinstein, Thomas A. Petty, Nathan Segel, Emanuel Tanay

## Associate Professors

Larry D. Alphas, Harvey J. Altman, Richard Balon, Bernard Chodoroff, Arthur Freeman, Matthew Galloway, James Granneman, Marvin Hyman, Lawrence Jackson (Clinical), Robert A. Levine, Robert G. Niven (Clinical), Howard Normile, John M. Rainey, Thomas M. Sullivan, Ronald E. Trunsky, Atila Turgay, Vikram K. Yeragani

## Clinical Associate Professors

Benjamin Barenholtz, Ronald M. Benson, Victor Bloom, Dale Boesky, Melvin Bornstein, Beth Ann Brooks, Linn Campbell, Sol C. Grossman, Sidney B. Jenkins, Norma Josef, Surendra Kelwala, Joseph E. Lenzo, Channing T. Lipson, Pang L. Man, Marvin Margolis, Robert Niccolini, Aurelio Ortiz, Carol E. Pearson, Leonard Piggott, Kenneth Pius, Leonard Rosen, Richard Ruzumna, Douglas Sargent, Kenneth Schooff, Frederick Shevin, Philip Veenhuis, Max Warren, Morris Weiss

## Adjunct Associate Professors

Barnaby Barratt, Robert Berman, Tamara Ferguson, Jack Novick

## Assistant Professors

Karole S. Avila, Hanumaiah Bandla (Clinical), Jesse Bell, Richard Berchou, Leon E.A. Berman, Michael Butkus, Emmanuel Casenas (Clinical), William Clark (Clinical), John DeLuca, John Dooley, Stanislaw Goleck, Debra Glitz, John Grabowski, David Gurevich, Linda Hotchkiss, Lew M. Hryhorczuk, K.C. Joseph, Zahra Kashef, Pamela Keenan, Shanin Koegler (Clinical), Vijayalakshmi Kologi (Clinical), Leonard Lachover, Jimmie P. Lefeszi, Harold Lockett, Gregory Manov, Richard Marcolini, G. Robert Miller (Clinical), Linda Morros, Hiten Patel, Chilakamari Ramesh (Clinical), Abdul Riaz, Harvey Rosen, Donald G. Ross, Panna Roy, A. Mi Soh (Clinical), Barry Tanner, Rao Vallabhaneni, Marina Wolf, William Wolf (Research), Suzanne Woodward

## Clinical Assistant Professors

H. Jay Abel-Horowitz, Irwin P. Adelson, John Baugh, Seymour Baxter, Larry Berkower, Michael Burnstein, Sander Breiner, Raymond Buck, Elaine Carroll, Sung Ran Cho, Bernard E. Cole, Michael Colwin, Cassius A. DeFlon, Jack Dorman, Fulvio Ferrari, Lionel Finkelstein, Saul Forman, Michael Freedman, James Galligan, John Gilkey, Kemal Goknar, Rosalind Griffin, Raul Guerrero, Louis Hoffman, Linda Hryhorczuk, Kenneth Israel, Cassandra Klyman, Bernard Kole, Paul Lessem, Alvin B. Michaels, John S. Moran, Thomas Park, Philip J. Parker, Anthony Petrilli, Michelle Reid, Hyomyeong Rhiew, Leonard Rosen, Ralph Rubenstein, Ronald Selbst, Marvin Sherman, Gerald Shiener, Donald Silver, Edward Siriban, Evangeline Spindler, Marvin L. Starman, Mayer Subrin, Robert S. Underhill, Habib Vaziri, Elliot Wagerheim

## Adjunct Assistant Professors

Curtis Bagne, C. Theresa Cali, Kay B. Campbell, Louise Centers, Randall Commissaris, David Dietrich, Ira Glivinsky, Deanna Holtzman, Patrick

Kelley, Nancy Kulish, Frank P. Pearsall, Judith Ruzumna-Nelson, Aloise J. Uecht, Sylvia Voelker, Paul Walker, Thomas Watkins, Margaret Weiner

## Instructors

Abdul Hafeez, Srinivasa Kodali, Gregory Mahr, Ashok Shah, Nargis Singapore, Magnus Zethelius

## Clinical Instructors

Tariq Abbasi, Jean Alce, Raman Bhavsar, Suresh Bilolikar, Pu-Min Chen, Lawrence J. Hatzenbeler, Cyril D. Jones, Duncan Magoon, Miriam Medow, Hubert Miller, Richard Morin, Gabrielle Nations, Deolixto Pascual, Nydia Quiroga, Bruce Sack, Mohammad Saeed, Rahul Sangal, Harold Taylor, Kathiravelu Thabolingam, David Vincent

## Adjunct Instructors

James Bow, Karen Chapin, Joy Ensor, Kathryn Frerichs, Glenn Good, Barry Jay, Mary Mintelstadt, William Nixon, Elaine Rogan, Walter Sobota, Robert Wills

## Undergraduate Education

The teaching program in the Department of Psychiatry 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 remains 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 Psychiatric Institute, Detroit Receiving Hospital, Harper-Grace Hospital, the Lafayette Clinic, Sinai Hospital, 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, Wayne State University School of Medicine, 540 East Canfield, Detroit, Michigan 48201.

## GRADUATE COURSE (PYC)

The following course is offered for graduate credit. Other graduate-level PYC courses are listed under the Doctor of Philosophy Program in Cellular and Clinical Neurobiology (Interdisciplinary Degree Programs, above). For interpretation of numbering system, signs and abbreviations, see page 463.

### 899 Master's Thesis Research and Direction. Cr. 1-8(Max. 8)

Preparation in writing of a scholarly proposal and thesis. (T)

# RADIATION ONCOLOGY

Office: First Level, University Health Center; (132)5-9207  
Chairperson: Arthur T. Porter

## Professors

Arnold M. Herskovic, Kenneth V. Honn, Colin G. Orton, Arthur T. Porter,  
William E. Powers

## Adjunct Professors

Henry Blosser, Avraham Raz

## Associate Professors

Syamala Devi, Jeffrey Foreman, Richard L. Maughan, Don P. Ragan

## Clinical Associate Professor

Miljenko Pilepich

## Adjunct Associate Professor

Surendra Rustgi

## Assistant Professors

Ihn H. Han, Paul B. Lattin, James M. Onoda, Vaneerat Ratanatharathom,  
Mahmoud Seyedadr

## Clinical Assistant Professors

Sue J. Han, James Herman, Jwong H. Ling

## Adjunct Assistant Professor

M. Parrott

## Instructor

Mark Yudulev

## Clinical Instructors

Hang S. Chang, Jennifer Holt

## Adjunct Instructors

Janice Campbell, Gary Ezzell, Suzie Garzon, Farhad Kader, R. Lieto, C.  
Mesina, Renu Saxena, James Spicka, C. Warmelink

## Associates

Diane Chadwell (Allied Health), Jeff Evelhoch (Radiology), Michael Flynn  
(Medicine), Joe Mantel (Radiology), Walt Nikesch (Radiology), Barbara  
Orton (Allied Health), Bonnie Sloane (Pharmacology), John Taylor  
(Biological Sciences), F. Valeriotte (Medicine)

## 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 prepares 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 335.) Through courses, seminars, 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, neutron radiotherapy cyclotron, 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 14 and 301 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, although in some cases students will be able to remedy some of these deficiencies concurrently with their graduate training.

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 20-30 and 301, respectively.

**DEGREE REQUIREMENTS:** The Master of Science 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 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)

The following course is offered for graduate credit. Courses numbered 500-699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090-499). For interpretation of numbering system, signs and abbreviations, see page 463.

### 590 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

## Professors

George A. Kling, Renate L. Soulen, Gertraud Wollschlaeger

## Professors (Clinical), Full-Time Affiliate

Fred Lee, Lawrence R. Kuhns, Thomas L. Slovits

## Clinical Professors

Melvyn T. Korobkin, Ali Shirkhoda, John N. Wolfe

## Associate Professor

Albert Goldstein

## Associate Professors (Clinical), Full-Time Affiliate

Gary M. Amundson, Daniel R. Guyot, John K. Kelly, Jaroslaw Muz, Faysal A. Saksouk, Harvey I. Wilner, Alkis P. Zingas

## Clinical Associate Professors

Philip N. Cascade, David P. Corbett, Raymond A. Gagliardi, Frederick B. Watts, Jr.

## Adjunct Associate Professor

Joseph Mantel

## Assistant Professors (Clinical), Full-Time Affiliate

Ricardo Barboza, Cristie J. Becker, Lawrence P. Davis, Kent R. Donovan, Ralph Duman, Daniel Eggleston, Carmen Endress, Denise G.K. Gray, Martin L. Gross, Samuel C. Johnson, Lewis A. Jones, Marc L. Kahn, Rehana N. Kapadia, Peter J. Littrup, Kathleen A. McCarroll, Joseph Metes, Peter R. Miller, Cynthia A. Nepjuk, Tariq Rashid, Myer H. Roszler, Marc C. Segel, Ronald A. Sparschu, Kurt E. Tech, Burt T. Weyhing III, Mark Zwiren

## Clinical Assistant Professors

L. Joan Bronn, Frederick Cushing, Myron H. Joyrich, James J. Karo, Alfredo Lazo, Vjekoslav Mikelic, Yogeshkumar S. Mody, Elizabeth L. Schmitt, Michael L. Schwartz, James E. Sells, Francis P. Shea, Robert A. Songe

## Instructors (Clinical), Full-Time Affiliate

Rene Loreda, Jesus M. Ocampo

## Clinical Instructors

David J. Kastan, Bijaya Hans, James M. Kuhlman, Joyce A. Lemkin, Jerald B. Maltzman, Sanford Marks, Mohan Navarasala, Kenneth M. Nowicki, Navinchandra J. Parekh, Mark F. Pezda, Shakuntala B. Rao, Michael L. Ross, Rojanandham Samudrala, Arthur Shufro, Robert D. Steele, Tse-Wai Tong, Isaias Villarosa, Nuromeo O. Vinluan

## Adjunct Instructors

Michael G. Crowley, Cheryl Culver, Thomas M. Kumpuris

## Associates

Jai Y. Lee (Pathology), Colin G. Orton (Radiation Oncology), Donald P. Ragan (Radiation Oncology)

## Graduate Degrees

MASTER OF SCIENCE in Radiological Physics

DOCTOR OF PHILOSOPHY 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; 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 333) for program descriptions and an outline of admission and degree requirements.

**Assistantships and Research:** see Department of Radiation Oncology, page 333.

## GRADUATE COURSES (RAD)

*The following courses, numbered 500-999, are offered for graduate credit. Courses numbered 500-699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090-499). Courses in the following list numbered 500-699 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 463.*

**501 Introduction to Radiological Physics. Cr. 4**  
Prereq: PHY 218, PHY 330 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)

**700 Imaging Physics I: Diagnostic Radiology. Cr. 3**  
Prereq: RAD 501. Conventional diagnostic radiological procedures using ionizing radiation; radiography, fluoroscopy, computed tomography, digital radiography, and mammography. (F)

**701 Imaging Physics II: Nuclear Medicine. Cr. 2**  
Prereq: RAD 501. Physics of nuclear medicine, with emphasis on imaging. (W)

**702 Physics of Radiation Therapy. Cr. 3**  
Prereq: RAD 501. Lecture and demonstration in physics of radiation therapy. (W)

**703 Imaging Physics III: Diagnostic Ultrasound. Cr. 2**  
Prereq: PHY 218, PHY 330, or equiv. Diagnostic ultrasound; basic instrumentation, imaging concepts, quality assurance, biological effects. (S)

**704 Radiation Dosimetry. Cr. 2**  
Prereq: RAD 501. Lecture and demonstration on principles of radiation dosimetry. Dosimetry of photons, electrons, neutrons and dose from radioactive materials. (W)

**705 Diagnostic Imaging Laboratory. Cr. 2**  
Prereq: RAD 700. Practical laboratory exercises in ionometric and solid-state dosimetry techniques, quality assurance, and radiation safety for selected diagnostic imaging techniques. (W)

**706 Applied Radiobiology in Radiological Science. Cr. 2-4**  
Prereq: PHY 218. Fractionation, oxygen enhancement ratio, characterization of neutron beams and heavy particles for radiation therapy, radiosensitivity within cell division. (F)

**707 Radiation Safety. Cr. 2**  
Prereq: RAD 501. Lectures on radiation safety procedures and practices; governmental regulations on radiation safety. (S)

**708 Radiotherapy Physics Laboratory. Cr. 2**  
Prereq: RAD 702, 704. Practical laboratory exercises in ionometric and solid-state dosimetry techniques, quality assurance procedures for selected radiation therapy and diagnostic radiological equipment. (S)

**709 Biomedical Nuclear Magnetic Resonance. Cr. 2**  
Prereq: PHY 218, PHY 330 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)

**710 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. (F)

**789 Seminar. Cr. 1 (Max. 3)**  
Presentations by graduate students, staff, visitors with emphasis on topics relevant to radiation biophysics and radiological health. (T)

**790 Directed Study. Cr. 1-5**  
Independent study in the uses of new technologies in clinical radiology. (T)

**799 Essay Direction. Cr. 3**  
Preparation of an in-depth paper on a subject in radiological physics. (T)

**890 Special Problems in Radiation Biophysics. Cr. 1-3 (Max. 3)**  
Independent study in advanced topics to be selected by the student in consultation with instructor. (T)

**999 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 Fromm, Michael D. Klein, Anna M. Ledgerwood, Charles E. Lucas, Arvin I. Philippart, Jerry C. Rosenberg, Yvan J. Silva, Zwi Steiger, Larry W. Stephenson, Choichi Sugawa, Alexander J. Walt, Arthur W. Weaver, Robert F. Wilson

## Clinical Professors

Agustin Arbulu, Clifford D. Benson (Emeritus), Adrian Kantrowitz, Robert D. Larsen, Norman D. Nigro, Joseph L. Posch, Allen Silbergleit

## Associate Professors

Robert D. Allaben, Frank A. Baciewicz, David L. Bouwman, Nicholas C. Cavarocchi, Michael S. Dahn, Charles L. Huang, Michael P. Kaplan, Emanuel Reinitz, Vishwanath M. Sardesai, Walter G. Sullivan, Steven Tennenberg, Donald W. Weaver

## Clinical Associate Professors

Federico A. Arcari, Ingida Asfaw, Joseph S. Bassett, Conrad F. Bernys, J. Howard Binns, Waldo L. Cain, William S. Carpenter, Thomas M. Flake, C. Jackson France, Medhi Hakimi-Naini, John R.F. Ingall, Lloyd A. Jacobs, Frederick H. Levine, James R. Lloyd, Robert J. Lucas, John R. Pfeifer, Fredrick E. Rector, Andres RestoSoto, Steven O. Salley, Homer M. Smathers, Henry J. Vandenberg, Vollrad J. von Berg, Gerald S. Wilson, Michael H. Wood, Scott W. Woods

## Assistant Professors

Sharon H. Ackerman, Marc L. Cullen, Lawrence N. Diebel, George Dombi, Scott Dulchavsky, Ramanlal Golwala, Michelle Hardaway, Ronald Kline, Mary Ann Kosir, Robert Kozol, Robert E. Lee, Marc A. Levison, James E. Miller, Richard J.L. Phillips, Maureen Pupillo, Walter A. Salwen, Jonathan M. Saxe, Steven Tennenberg, Norman Weinzweig, Paul Zidel

## Clinical Assistant Professors

Susan E. Adelman, Zacarias G. Asuncion, Jr., Pamela Benitez, Jason H. Bodzin, William O. Brown, Michael Busuito, Ruth Campbell, Chairat Chomchai, Henry Coleman, Elizabeth Dawc, Walter O. Evans, Vincent J. Gallant, Eti Gursel, Khatchadour Hamamdjian, Eric C. Hanson, William A. Hamity, John M. Hartzell, David B. Hawtof, Keith Hinshaw, Robert J. Holmes, John A. Ingold, Franklin R. Jackson, Arnold Jones, Raymond Jungwirth, Ali Kafi, Sourav Kundu, Hayward C. Maben, W. Peter McCabe, Steven E. Olchowski, Eduardo Phillips, Robert M. Reynolds, Paul Rizzo, Marc P. Sakwa, Saul Sakwa, Krishna K. Sawhney, Michael J. Schenden, Sheldon Schwartz, Kenneth Shaheen, Thomas S. Siegel, Andrew E. Stefani, Joe G. Talbert, Allen Telmos, You-Wen Tsai, Oscar C. Tumacder, Satish C. Vyas, John F. Weiksnar, Daniel T. Wheatley, James Whitten, A. Neal Wilson, Steven M. Wolf, Burton Zack

## Clinical Instructors

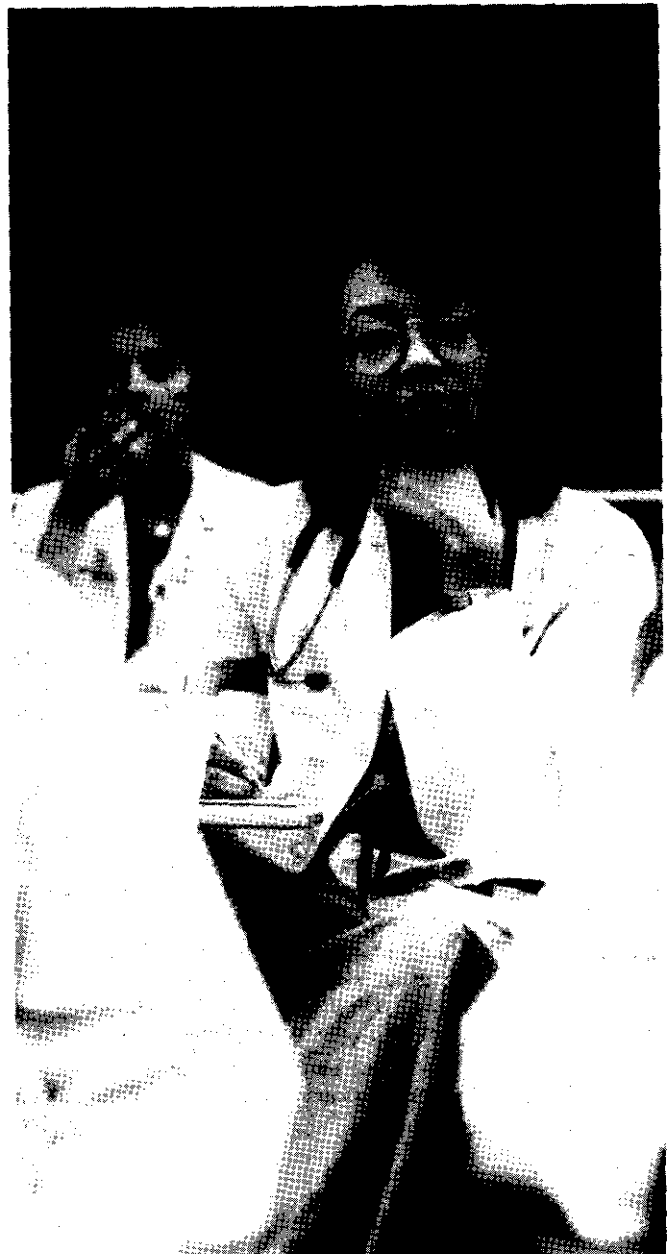
Paul E. Clancy, Harold Gallick, Mune Gowda, Michael T. Heuton, Murray Kling, JoAnne Levitan, Ronald A. Rusko, Carl Sacks, Bruce Washington

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 the light of modern physiological and pharmacological knowledge. Each student has exposure to general, cardiothoracic, plastic and pediatric surgery. 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 also gain exposure to pediatric surgery at Children's Hospital of Michigan and wide clinical experience at Detroit Receiving, Veterans' Administration in Allen Park, and Harper-Grace Hospitals. A unique experience is provided to each student by a two week rotation on the emergency facility at Detroit Receiving Hospital. This rotation enables the student to participate in the multi-disciplinary management of acutely ill and injured patients in the emergency room.

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; (313)5-7381

Chairperson: J. Edson Pontes

## *Professors*

Donald J. Jaffar (Emeritus), James E. Montie, Alan D. Perlmutter, J. Edson Pontes

## *Associate Professors*

C. B. Dhabuwala, R. Bruce Filmer

## *Clinical Associate Professor*

Edward J. Shurnaker

## *Assistant Professors*

Rene Frontera, Gabriel Haas, Isaac L. Powell, Claude Reitelman, James B. Smith, Jr.

## *Clinical Assistant Professors*

Melvin L. Hollowell, Arthur J. Johnson, Charles Kessler, Joseph R. Oldford, William H. Rattner, 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 over-all 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. Several senior electives are offered varying from four to eight weeks. There is a urology elective at Harper-Grace Hospital in the area of adult urinary tract disease, consisting of either four or eight weeks. There is a similar elective in pediatric urology at the Children's Hospital of Michigan.



# **COLLEGE OF NURSING**

**INTERIM DEAN: Jeannette O. Poindexter**

# Foreword

Nursing is a profession and an academic discipline. As a profession, nursing uses knowledge creatively in response to the health care needs of society. Experience in a variety of clinical settings is the primary mode for the development of practical competencies, and the faculty affirms the necessity and value of clinical practice as part of the nursing program.

As a discipline, nursing develops a body of knowledge, and the College of Nursing, functioning within the context of Wayne State University, supports liberal arts education, in the belief that knowledge acquisition and the capacity for critical inquiry, reflection and decision making prepare learners to respond to issues that will confront them as professionals. Accordingly, the faculty believes that nursing programs must be composed of the intellectual, social and technical components of both a liberal and a professional education.

Learners from diverse backgrounds enter the College to begin or continue their nursing education. The diverse characteristics of students add to the richness of the learning experience. As self-directed participants in the learning process, students develop personal goals and values significant to the nursing profession. Consequently, the programs of the College seek to accommodate these goals, special needs, and abilities, and the faculty supports the right of students to question, challenge and debate within the context of inquiry as an essential ingredient to their development.

The handbooks of the College of Nursing, available from the College, provide more specific information regarding the history, philosophy, goals and objectives of the undergraduate and graduate programs.

## 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.

## Graduate Degrees

### *MASTER OF SCIENCE in Nursing with a clinical focus in:*

Advanced Medical–Surgical Nursing  
Adult Primary Care Nursing  
Adult Psychiatric–Mental Health Nursing  
Child and Adolescent Psychiatric Mental Health Nursing  
Community Health Nursing  
Nursing, Parenting, and Families  
Transcultural Nursing

### *POST-MASTER'S SPECIALIST CERTIFICATE in Nursing Administration*

### *GRADUATE CERTIFICATE in Nursing Education*

### *DOCTOR OF PHILOSOPHY in Nursing*

# MASTER OF SCIENCE IN NURSING

## Admission Requirements

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 14. 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. Registered nurses who have earned bachelor's degrees, other than the B.S.N., or with a B.S.N. from a non-accredited program, are evaluated for admission on an individual basis. Since transcripts are evaluated individually to determine whether additional examinations or prerequisite courses will be necessary before admission, it is advisable for applicants to seek early counseling from the Office of Student Affairs.
2. Completion of Graduate Record Examinations, with a composite score (verbal and quantitative) of 800 or above.
3. Professional competence as documented by 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 an adviser in the clinical area (a telephone interview may be possible if the applicant resides more than 200 miles from Detroit).

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 Graduate Program*. Both applications are available in the Office of Student Affairs, College of Nursing.

Applications for part-time study may be submitted at any time, though clinical and many cognate courses are offered only in the fall. Deadline dates for filing applications are the same as for the Graduate School of the University (see page 14), but early filing by prospective full-time students is encouraged since some of the clinical courses may be filled by the fall deadline. Unless otherwise advised, anyone planning to attend full-time should begin in the fall semester.

**Pre-Master's Admission:** In some instances, an applicant for the master's program 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, two semesters prior to the semester for which re-enrollment is desired. Following a review by the Office of Student Affairs, the student will be informed of the steps needed to qualify for readmission.

The student who has been asked to withdraw may apply for readmission to the master's program through the Graduate Admissions and Scholastic Policy and Review Committee.

**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-six to forty 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 347 and 20-30 respectively. Credits must be distributed as follows:

	<i>Credits</i>
Clinical Nursing Sequence .....	18-24
Cognate/Related Science .....	6
Research Sequence .....	10

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 343. 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* upon completion of eight to twelve graduate credits at Wayne State University. All prerequisites must be completed before filing the *Plan*. A student must have a minimum 3.0 honor point average in order to have a *Plan of Work* accepted by the Graduate Officer. Once the *Plan of Work* has been approved by the Graduate Officer the student may sign his/her own program authorization for registration. Each *Plan* must include the course requirements for the clinical nursing sequence and intended degree. It is the responsibility of the student and his/her faculty adviser to file any changes in the *Plan of Work*.

**Time Limitations:** The student may complete degree requirements in a minimum of three semesters of full-time study. Students have six years to complete requirements. The six-year limit begins from the end of the semester during which the student has taken coursework applicable toward meeting the requirements of the degree; this may occur before the student is regularly admitted to the program.

## COMMUNITY HEALTH NURSING

This clinical area is designed to prepare the nurse for advanced level practice in community health nursing through the assessment of health needs, implementation of health planning, and the provision of theory based interventions. The students have an opportunity to develop their own goals, expand their study and clinical experience in areas of individual interest.

There are three curricular options available: Community Nursing, Gerontological Nursing, and Home Health Nursing Administration. Requirements for each of these options is as follows:

### — COMMUNITY HEALTH NURSING

The community nursing curriculum is based on a multi-dimensional approach to health promotion, disease prevention, control of health problems and home health care. The primary focus is on the promotion, preservation, and restoration of the health of families, groups, and communities. Students are prepared to assume responsibilities for the assessment of health status, determination of health needs, implementation of health planning, and the provision of health care services.

*Clinical Nursing Sequence: Twenty-one credits required*

	<i>Credits</i>
NUR 651 — Nursing and the Health Care Environment .....	3
NUR 710 — Theoretical Foundations of Nursing Practice .....	3
NUR 711 — Responses and Experiences in Health/Illness .....	3
NUR 719 — Nursing Care of Groups and Families .....	3
NUR 751 — Advanced Community Health Nursing and Home Care .....	3
NUR 754 — Nursing Care of Communities .....	3
NUR 756 — Change Strategies in Community Health Nursing .....	3

*Cognates: Six credits required*

C M 724 — Epidemiology .....	3
Cognate (adviser approved) .....	3

### — GERONTOLOGICAL NURSING

The gerontological curriculum focuses on the special needs of an aging population as they relate to health promotion, disease prevention, control of health problems and home health care. The program is designed to prepare students to assume responsibilities for the assessment of health status, determination of health needs, implementation of health planning, case management and provision of health care services for elderly clients. This curriculum can be easily adapted for students to obtain an Institute of Gerontology Specialist Certificate in Aging.

*Clinical Nursing Sequence: Twenty-one credits required*

	<i>Credits</i>
NUR 651 — Nursing and the Health Care Environment .....	3
NUR 710 — Theoretical Foundations of Nursing Practice .....	3
NUR 711 — Responses and Experiences in Health/Illness .....	3
NUR 719 — Nursing Care of Groups and Families .....	3
NUR 740 — Gerontological Nursing .....	3
NUR 741 — Psychosocial Aspects of the Aged .....	3
NUR 751 — Advanced Community Health Nursing and Home Health Care .....	3

*Cognates: Six credits required*

Gerontology Related Electives (adviser approved) .....	6
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### — HOME HEALTH NURSING ADMINISTRATION

This curriculum focuses on health promotion, home health care, and the administration of home health care in the community. The program is designed to prepare students to assume administrative responsibilities within a home health care organization or other community health agencies.

**Clinical Nursing Sequence: Twenty-three credits required** Credits

NUR 651 — Nursing and the Health Care Environment	3
NUR 710 — Theoretical Foundations of Nursing Practice	3
NUR 711 — Responses and Experiences in Health/Illness	3
NUR 719 — Nursing Care of Groups and Families	3
NUR 751 — Advanced Community Health Nursing and Home Health Care	3
NUR 775 — Administrative Processes in Nursing	3
NUR 776 — Human Resource Management	3
NUR 777 — Field Practice in Nursing Administration	2

**Cognates: Six credits required**

Business Administration Cognates (Adviser approved)	6
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**NURSING, PARENTING, and FAMILIES**

This clinical focus offers an opportunity to develop knowledge and expertise in the nursing care of childbearing and childrearing individuals, parents, and family members. The curriculum combines and expands the traditional childbearing and childrearing concepts within the larger context of family involvement and extended parenting. The goal of the program is to prepare clinical nurse specialists who focus on the healthy development of individuals within the family, and on the family unit itself. Graduates will be prepared to provide nursing care based on a synthesis of relevant theory and scientific knowledge of health promotion, health maintenance, and human responses to actual and potential health problems of individuals, parents and family members. This innovative approach prepares graduates to function effectively in changing health care systems.

**Clinical Nursing Sequence: Twenty-one credits required** Credits

NUR 651 — Nursing and the Health Care Environment	3
NUR 710 — Theoretical Foundations of Nursing Practice	3
NUR 711 — Responses and Experiences in Health/Illness	3
NUR 719 — Nursing Care of Groups and Families	3
NUR 727 — Nursing, Parenting and Families: Synthesis of Scientific Foundations	3
NUR 728 — Nursing, Parenting and Families: Evaluation of Advanced Practice	3
NUR 729 — Nursing, Parenting and Families: Validation of Advanced Practice	3

**Cognates: Six credits required**

PSY 740 — Intro. to Life-Span Developmental Psychology	3
PSL 750 — Developmental Physiology	3

**ADVANCED MEDICAL-SURGICAL NURSING**

This clinical area is designed to prepare the nurse for advanced level practice in the care of the physically ill adult. The focus is on the adult 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 emphasizes the clinical nurse-specialist roles of practitioner, educator, researcher and change agent. Emphasis is placed on rigorous and consistent diagnostic reasoning and theory-based practice, as well as on the analysis, critique, and utilization of nursing and biopsychosocial theory/constructs.

**Clinical Nursing Sequence: Twenty credits required** Credits

NUR 651 — Nursing and the Health Care Environment	3
NUR 710 — Theoretical Foundations of Nursing Practice	3
NUR 711 — Responses and Experiences in Health/Illness	3
NUR 712 — Adult Clinical Nursing I	4
NUR 714 — Adult Clinical Nursing III	4
NUR 719 — Nursing Care of Groups and Families	3

**Cognate: Six credits required**

PSL 701 — Basic Graduate Physiology Lecture I	3
PSL 703 — Basic Graduate Physiology Lecture II	3

**— CRITICAL CARE NURSING**

This clinical area is designed to prepare advanced nurse practitioners in the care of the critically ill adult. The focus of the clinical sequence is a conceptual, theoretical and experiential basis for advanced nursing practice in the care of adults with life-threatening health problems. Clinical nurse specialist roles of practitioner, educator, consultant, manager, and change agent in critical care are developed in this area, with emphasis on diagnostic reasoning, analysis and critique of nursing, and biophysical theories and constructs and their application to nursing practice.

**Clinical Nursing Sequence: Twenty-six credits required** Credits

NUR 651 — Nursing and the Health Care Environment	3
NUR 710 — Theoretical Foundations of Nursing Practice	3
NUR 711 — Responses and Experiences in Health/Illness	3
NUR 712 — Adult Clinical Nursing I	4
NUR 714 — Adult Clinical Nursing III	4
NUR 719 — Nursing Care of Groups and Families	3
NUR 735 — Clinical Nursing IV: Critical Care	3
NUR 736 — Adult Clinical Nursing V: Critical Care	3

**Cognate: Six credits required**

PSL 701 — Basic Graduate Physiology Lecture I	3
PSL 703 — Basic Graduate Physiology Lecture II	3

**ADULT PRIMARY CARE NURSING**

This clinical area prepares the clinical nurse specialist 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 clinical nurse specialist in the roles of practitioner, educator, researcher and change agent.

**Clinical Nursing Sequence:**

*Twenty-six credits required*

**Credits**

NUR 651 — Nursing and the Health Care Environment .....	3
NUR 710 —Theoretical Foundations of Nursing Practice .....	3
NUR 711 — Responses and Experiences in Health/Illness .....	3
NUR 715 —Clinical Judgment in Nursing I .....	3
NUR 716 —Clinical Judgment in Nursing II .....	3
NUR 717 —Adult Primary Care I .....	4
NUR 718 —Adult Primary Care II .....	4
NUR 719 — Nursing Care of Groups and Families .....	3

**Cognate: Six credits required**

PSL 701 — Basic Graduate Physiology Lecture I .....	3
PSL 703 — Basic Graduate Physiology Lecture II .....	3

**— OCCUPATIONAL HEALTH NURSING**

This area of study is designed to prepare advanced nurse practitioners to provide primary care services in the workplace, develop health-promotion programs, conduct environmental surveillance, and manage occupational health services; emphasis is on the development and application of standards and research to enhance the quality of health care to workers and their families. The clinical practicum focuses on health promotion, disease prevention, and program development and evaluation. The program provides students with opportunities to develop critical thinking capability and to apply theory and research findings in this area, in the roles of practitioner, educator, researcher, and change agent.

**Clinical Nursing Sequence: Twenty-six credits required**

**Credits**

NUR 651 — Nursing and the Health Care Environment .....	3
NUR 710 —Theoretical Foundations of Nursing Practice .....	3
NUR 711 — Responses and Experiences in Health/Illness .....	3
NUR 715 —Clinical Judgment in Nursing I .....	3
NUR 716 —Clinical Judgment in Nursing II .....	3
NUR 719 — Nursing Care of Groups and Families .....	3
NUR 738 — Occupational Health Nursing Management I .....	4
NUR 739 — Occupational Health Nursing Management II .....	4

**Cognate: Six credits required**

C M 724 — Epidemiology .....	3
OEH 601 — Survey of Occupational and Environmental Health .....	3

**ADULT PSYCHIATRIC MENTAL HEALTH NURSING**

This clinical area is designed to prepare advanced practitioners of psychiatric mental health nursing with adults and their families in a variety of settings. Students gain experience in formulating a model of advanced nursing practice which addresses various conceptualizations of person, health, environment and nursing. Opportunities are available to: explore and use theories; incorporate research findings into clinical practice; apply and evaluate a model for advanced psychiatric mental health nursing; and initiate strategies to improve the health care delivery system.

**Clinical Nursing Sequence: Twenty-one credits required**

**Credits**

NUR 710 —Theoretical Foundations of Nursing Practice .....	3
NUR 760 —Adult Psychiatric-Mental Health Nursing with Individuals .....	6
NUR 762 —Psychiatric-Mental Health Nursing with Groups .....	4
NUR 763 —Psychiatric-Mental Health Nursing with Families .....	5
NUR 764 —Community Mental Health Nursing .....	3

**Cognates: Six credits required**

Cognates (Adviser approved) .....	6
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**CHILD and ADOLESCENT PSYCHIATRIC MENTAL HEALTH NURSING**

This clinical area is designed to prepare advanced practitioners of psychiatric mental health nursing with infants, children, adolescents and their families in a variety of settings. Students gain experience in formulating a model of advanced nursing practice which addresses various conceptualizations of person, health, environment and nursing. Opportunities are available to: explore and use theories; incorporate research findings into clinical practice; apply and evaluate a model for advanced psychiatric mental health nursing; and initiate strategies to improve the health care delivery system.

**Clinical Nursing Sequence: Twenty-one credits required**

**Credits**

NUR 710 —Theoretical Foundations of Nursing Practice .....	3
NUR 761 —Child and Adolescent Psychiatric-Mental Health Nursing .....	6
NUR 762 —Psychiatric-Mental Health Nursing with Groups .....	4
NUR 763 —Psychiatric-Mental Health Nursing with Families .....	5
NUR 764 —Community Mental Health Nursing .....	3

**Cognates: Six credits required**

Cognates (Adviser approved) .....	6
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**TRANSCULTURAL NURSING**

This clinical major is designed to provide students with in-depth knowledge and skills for working with individuals, families and groups of various cultures, and with cultural institutions exhibiting diverse values, beliefs and lifeways. Classroom and field experiences enable students to become competent practitioners, area specialists, consultants, cultural care facilitators, and teachers in transcultural nursing.

**Clinical Nursing Sequence: Eighteen credits required**

**Credits**

NUR 600 — Transcultural Health and the Life Cycle .....	3
NUR 651 — Nursing and the Health Care Environment .....	3
NUR 707 — Transcultural Nursing: Theory, Research and Practice .....	3
NUR 708 — Field Practice in Transcultural Nursing .....	3
NUR 710 —Theoretical Foundations of Nursing Practice .....	3
NUR 711 — Responses and Experiences in Health/Illness .....	3

**Cognates: Six credits required**

Selected TWO of the following (approved by adviser):	
ANT 506 — Urban Anthropology .....	3
ANT 524 — Cross-Cultural Study of Gender .....	3
ANT 531 — Language and Culture .....	3
ANT 639 — Contemporary Theory in Anthropology .....	3
ANT 668 — Studies in Cultural Anthropology .....	3

**Research Sequence**

Each student 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 700 —Statistical Methods in Nursing Research (or equiv.)	4
NUR 701 —Research in Nursing	3
NUR 702 — Qualitative Research in Nursing and Health Care	3

plus one of the following:

NUR 796 —Research Practicum	3-4
NUR 798 —Field Study	3-4
NUR 899 —Master's Thesis Research and Direction	8

**Accelerated Baccalaureate and Master's Degree Program (ADN/MSN)**

This program is a combined accelerated undergraduate and graduate option for academically-talented registered nurse students who choose advanced nursing practice as their career goal. The RN/ADN accelerated baccalaureate and master's degree program enables participants to apply a maximum of fifteen graduate credits toward both an undergraduate and a graduate degree in nursing.

Students admitted to the accelerated program must complete their baccalaureate work prior to admission to the master's program. After admission to the master's program and satisfactory completion of one term in the graduate program, the student may petition for transfer to the graduate program of up to fifteen graduate credits taken at the undergraduate level.

**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 Wayne State University Undergraduate Application.
2. Completion of College of Nursing Undergraduate Application.
3. Completion of an associate degree in nursing or a diploma and thirty Liberal Arts credits with an honor point average (h.p.a.) of 3.3 or above.
4. A current registered nurse licensure.
5. A minimum of one year's experience as a registered nurse.
6. Completion of College of Nursing Graduate Application.
7. Professional competence as documented by references.
8. An interview with an adviser in the graduate program clinical area of interest.
9. Submission of Graduate Record Examination scores.
10. Admission to the Graduate School after completion of baccalaureate program.

**DEGREE REQUIREMENTS (Baccalaureate Program)**

The Bachelor of Science in Nursing is awarded after completion of the General Education Requirements, NLN Mobility Profile II Examinations, and the select B.S.N. (graduate level) courses, as follows.

*General Education Requirements (R.N.s transfer credit into the College of Nursing for most of the freshman and sophomore liberal arts and science courses.)*

Credits

BIO 105 or BIO 151	
— (LS) Introduction to Life	4
— (LS) Basic Biology I	4
BIO 220 — Introductory Microbiology	4
BIO 287 — Anatomy and Physiology	5
ENG 102 — (BC) Introductory College Writing	4
CHM 102 — (PS) General Chemistry I	4
CHM 103 — General Chemistry II	4
ENG 301 or ENG 303	
— (IC) Intermediate Writing	3
— (IC) Writing the Research Paper	3
PSY 101 — (LS) Introductory Psychology	4
PSY 240 — Developmental Psychology	4
P S 101 — (A) American Government	4
SOC 200 or ANT 210	
— (SS) Understanding Human Society	3
— (SS) Introduction to Anthropology	3
English or American Literature Elective	3
Humanities Elective	3
Upper Level Social Science course	3
General Education electives	13

**NLN Mobility Profile II Examinations**  
(33 Nursing credits granted for advanced placement)

**Required Undergraduate Nursing Courses:**

NUR 300 — Assessment: History Taking & Physical Examination	3
NUR 200 — Conceptual Basis of Professional Nursing Practice	2
NUR 412 — (W) Community Health Nursing Practice	6
NUR 422 — Leadership & Management in Nursing Practice	4

**Graduate Courses Taken Within B.S.N. Program (15 credit max.):**

**Clinical Area Sequence:**

NUR 710 — Theoretical Foundations of Nursing Practice	3
NUR 719 — Nursing Care of Groups & Families: Theory & Research	3
First clinical course in graduate nursing sequence (different for each clinical area)	3

**Cognate (different for each major): 3 credits**

**Research Sequence:**

NUR 701 — Research in Nursing	3
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**DEGREE REQUIREMENTS (Master's Degree)**

Additional Graduate Nursing Courses to Complete M.S.N. Program (M.S.N. awarded following completion of master's program requirements):

**Clinical Area Sequence:**

NUR 711 — Responses & Experiences in Health & Illness	3
NUR 651 — Nursing and the Health Care Environment	3
Remaining clinical courses in clinical	6

**Cognate Sequence: one course — 3 credits**

**Research Sequence:**

NUR 700 — Statistical Methods in Nursing Research	4
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Plus ONE of the following:

NUR 796 — Research Practicum	3
NUR 798 — Field Study	3
NUR 899 — Master's Thesis Research and Direction	8



# 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 14. Additional requirements include: the M.S.N. degree, or enrollment in the College master's degree program in nursing, or satisfaction of the admission requirements for the master's program (see page 340).

**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 347 and 20-30 respectively.

<i>Required Courses (Twelve credits)</i>	<i>Credits</i>
NUR 710 — Theoretical Foundations of Nursing Practice .....	3
NUR 771 — Theoretical Perspectives of Teaching in Nursing .....	3
NUR 772 — Educational Program Planning and Evaluation in Nursing .....	3
NUR 773 — Field Practice in Clinical Teaching .....	3
Total:	12

# SPECIALIST CERTIFICATE IN NURSING ADMINISTRATION

This twenty-three credit program leading to a Specialist Certificate in Nursing Administration is designed to prepare nurses for administrative positions with nursing service organizations involved in acute care, long term care, ambulatory or home health care agencies; schools of nursing and professional membership organizations. The program includes courses pertaining to administrative processes, personnel development, labor relations, organizational analysis and design, health care policy, financial and managerial accounting, health economics, and legislative processes.

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14. Additional requirements include: the M.S.N. degree or equivalent; two years experience in nursing; three letters of reference; graduate record examination results; an interview; and NUR 775 and 776 as prerequisite or corequisite courses. Since a maximum of nine credits, taken as a post-master's student, may be transferred to the doctoral plan of work, students who are interested in the Ph.D. program should explore this option before or soon after beginning a certificate program. Admission to a Specialist Certificate Program in no way guarantees admission to the doctoral program.

**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 347 and 20-30 respectively.

<i>Required Courses (Twenty-three credits)</i>	<i>Credits</i>
<i>Planning and Evaluation (3 credits)</i>	
NUR 651 — Nursing and the Health Care Environment .....	3
NUR 781 — Computer-Based Nursing Information Systems .....	3
<i>Economic and Financial Management Theory (6 credits)</i>	
ACC 602 — Managerial Accounting .....	3
One adviser approved elective course in this area .....	3
<i>Human Resource Management (6 credits)</i>	
MGT 775 — Labor Relations and Collective Bargaining .....	3
MGT 777 — Union Contract Administration .....	3
MGT 764 — Management of Human Resources .....	3
<i>Management (3 credits)</i>	
MGT 762 — Complex Organizations .....	3
MGT 766 — Entrepreneurial Management .....	3
MGT 768 — Executive Decision Making .....	3
<i>Nursing (5 credits—may include Planning and Evaluation credit)</i>	
NUR 810 — Issues, Methods, and Policies .....	2
NUR 820 — Topical Seminar in Nursing .....	2-12
Total:	23

# DOCTOR OF PHILOSOPHY

## Admission Requirements

- 1. Admission** to the Wayne State University Graduate School (for requirements, see page 14).
- 2. Nursing Degree:** a bachelor's or master's degree in nursing or the equivalent (summer option applicants must have a master's degree in nursing).
- 3. Honor Point Average:** applicants must have a 3.3 (out of 4.0) graduate h.p.a., based on at least twelve credits of graduate level course work, and a 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. Foreign students may substitute the TOEFL scores (a minimum of 550) in place of the verbal GRE (consistent with University policy), but would still be required to have a minimum of 400 quantitative score. 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, preferably from nurse faculty, nurse research personnel, and/or other professional colleagues (preferably at the doctorally-prepared level) who can evaluate the applicants clinical competence, scholarship and aptitude for research.
- 7. Statement Of Professional Goals** including research interests, ideas, beliefs and concerns about clinical practice. This will be reviewed by the graduate faculty for consistency with the College's doctoral program; applicants would be advised if their interests and goals cannot be fulfilled in this program.
- 8. Scholarship:** applicants must submit two or three 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.

Applicants are admitted twice a year, in the summer and in the fall. The application deadline date for both admission times is February 15. Admission decisions reflect careful consideration of the applicant's completed application, goals, interests, and the resources of the College of Nursing.

Although an applicant meets all minimal 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.

**Pre-Master's Study:** In some instances, applicants may wish to apply to the doctoral program as a pre-master's student. If accepted in this classification, a student may register for a maximum of nine graduate credits, but may not register for clinical nursing courses or doctoral nursing courses (numbered 800 and above). Enrollment as a pre-master's student does not guarantee admission to the doctoral program.

**Post-Master's Study:** Some applicants may wish to apply to the doctoral program as a post-master student. If accepted in this classification, the student should register for a maximum of nine graduate credits, but may not register for doctoral nursing courses (NUR 800 and above). Enrollment as a post-master's student does not guarantee admission to the doctoral program.

**Readmission:** Students who withdraw from the program in good standing for one or more years should contact the office for Academic Affairs, College of Nursing, one semester prior to the term in which they wish to register. Preference for enrollment in doctoral nursing courses is given to currently-registered students.

## 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 347 and 20-30 respectively. Credits must be distributed as follows:

Areas of Study	Minimum Graduate Credits
Clinical Nursing .....	18
Advanced Nursing and Philosophy .....	16
Cognate/Related Discipline .....	12
Nursing Research and Statistics .....	14
Dissertation (NUR 999) .....	30
	Total: 90

Students who do not possess the master's degree in nursing upon admission are expected to complete clinical nursing sequence requirements. The areas of advanced clinical practice include advanced medical-surgical nursing; adult and child/adolescent psychiatric-mental health nursing; community health nursing; nursing, parenting, and families; adult primary care nursing; or transcultural nursing. The disciplines from which a sequence of cognate courses might be chosen include: anthropology, communications, economics, gerontology, history, management, measurement/statistics, nutrition, physiology, and psychology. The students will be encouraged to select statistics and methodological courses appropriate to the study of nursing phenomena.

**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 toward meeting requirements for the Ph.D. degree.

**Plan of Work:** Early in his/her program the doctoral applicant, with the assistance of the 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 and Memorandum of Approval and Agreement of Cognate Area Adviser should be attached to *Plan of Work*. It is the responsibility of student and his/her faculty adviser to file changes in *Plan of Work*.

## Post-Doctoral Study

Opportunities are available for post-doctoral study on an individual basis, in a special area of interest, which should be planned in advance with faculty advice. Interested students should contact the College Office of Student Affairs for information, as well as confer with faculty with whom they wish to pursue individually-planned post-doctoral study.

# 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 \$200,000/\$600,000. Each student is to present a copy of his/her professional liability and malpractice insurance policy to the Office of Student Affairs (or elsewhere as designated by the College) no later than the last day of final registration in order to begin the course(s).

## Health Requirements

Each student is required to have an admission physical examination on file in the Office of Student Affairs. The student is to have a yearly tuberculin skin test and/or chest X-ray. Students may not attend clinical courses unless clearance is on file.

## Course Material Fee Cards (CMFC)

The student must purchase course material fee cards for certain courses identified in the *Schedule of Classes*. The cards must be presented to the Office of Student Affairs (or elsewhere as designated by the College) by no later than the last day of final registration each semester in order to begin the course(s). Holds will be placed on degree approvals and/or subsequent registrations if fee cards are missing.

## Master's Degree Scholarship

The graduate grading system is intended to reflect high standards of critical and creative scholarship. The policies for academic progression for graduate students are listed below.

1. For a student to be awarded a M.S.N. degree a minimum 3.0 h.p.a. is required.
2. For a student to advance from master's applicant to master's candidate a minimum 3.0 h.p.a. is required
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 achieved, the student may not progress.

4. A student is allowed to petition to repeat a graduate course one time in which a grade lower than 'B' is received. No more than two courses may be repeated.

5. Six credits in 'C' grades, although unsatisfactory in graduate study, may be applied toward the graduate degree provided they are offset by six credits in 'A' grades.

6. A student may not progress in the program if six credits in 'C' or lower grades have been earned.

7. A student may not progress in the program if a grade of 'C' or below is earned in two nursing courses.

8. A student may not progress in the program if a failing grade (below 'C') is earned in a *clinical* nursing course.

9. A student with qualified admission status must complete twelve graduate credits with a minimum of 3.0 h.p.a. in order to change to regular status. Failure to meet this requirement will result in non-progression in or exclusion from the program.

10. A student may be excluded from the College of Nursing for unsafe and/or unethical conduct in the program without having been previously warned.

11. 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 of 3.0 h.p.a. is required for a student to be awarded a Ph.D. degree.

2. Students who earn more than two 'C' grades in 800 level course work cannot continue in the doctoral program.

3. If more than ten credits of 'C' grades have been earned in cognate, statistics, methods, and 800 level nursing courses, the student may not continue in the doctoral program.

4. A student is allowed to petition to repeat a graduate course one time in which a grade lower than a 'B' has been earned. No more than two courses may be repeated.

5. If the Qualifying Examination Committee determines that the student has not passed all parts of the written and oral examinations, the committee must make specific recommendations for admitting the applicant to a second examination, and specify any additional work that should be completed prior to the 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 second examination shall be considered final.

## 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.

*Master's Student Forum*: addresses the progress, needs, and concerns of master's nursing students.

*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.

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.

## College of Lifelong Learning Affiliation

The College of Nursing, through the College of Lifelong Learning (CLL), offers courses and other educational programs, credit and non-credit, in various locations throughout the Detroit metropolitan area and the state. Students who are regularly admitted or who have not yet been admitted to the College of Nursing may register for selected courses through CLL. *When students are admitted to a degree program in the College of Nursing, they may petition for acceptance of these course credits as part of their degree requirement.* Information concerning off-campus courses or programs may be obtained from: Office of Student Affairs, College of Nursing.

# FINANCIAL AIDS

The University Office of Scholarships and Financial Aid, 3 West, Joy Student Services Building (see page 32), administers scholarships, grants, loans and emergency funds available to all University students as well as funds provided especially for College of Nursing students. Early application is encouraged.

## Financial Assistance

Among some of the private funds available to nursing students are the Helen Newberry Joy Fund, the College of Nursing Alumni Fund, the Golda Krolik Fund, and the John Helfman Fund. These funds provide limited assistance for financially and academically qualified students. Most awards are in the form of non-interest loans and are usually for no more than one semester's tuition. For information about these and other resources, the student should consult the Office of Student Affairs, College of Nursing. Opportunities for financial assistance in the College of Nursing include:

*Gloria Ann Colquhoun Memorial Scholarship:* Funds of variable amount open to any full-time master's student enrolled in the College of Nursing, demonstrating financial need, outstanding scholastic achievement, and leadership abilities. The student is required to submit a personal statement and two letters of recommendation in order to be eligible. Application deadline is March 1 for the fall semester and December 7 for the winter semester.

*Helen Newberry Joy Scholarship:* Funds of variable amount open to any minority student admitted to the College of Nursing. Application deadline is March 1 for the fall semester and November 28 for the winter semester.

*Golda G. Krolik Fund:* \$500 open to any black minority student admitted to the College of Nursing who also demonstrates financial need. Application deadline is March 1 for the fall semester and November 28 for the winter semester.

*Outer Drive Hospital Auxiliary Scholarship:* award of \$1000, open to any nursing or allied health student who has completed one year of health care courses of twelve credits or more, and who also resides in a Downriver Community. Application deadline is April 28. For information, contact the Outer Drive Hospital Auxiliary, 26400 Outer Drive, Lincoln Park, MI 48146.

*Steiger Memorial Scholarship:* Funds of variable amount open to any nursing student, either full- or part-time, who has demonstrated financial need. Application deadline is April 8 for the fall semester and November 28 for the winter semester.

*Veterans Administration Health Profession Scholarship Program:* An award of tuition, fees, other reasonable educational expenses, and a monthly stipend, open to any full-time student working toward a baccalaureate or master's degree in nursing or physical therapy. Applicants must be U.S. citizens. Application deadline is May 29.

## Professional Nurse Traineeships

Funds may be available for full-time or part-time study under federal traineeships. The deadline date for filing applications is April 1. If available, awards are made in July or August. Applications are available in the Office of Student Affairs, College of Nursing.

## Graduate-Professional Scholarships

Each year the University awards a number of part-time and full-time tuition scholarships for students in graduate or professional degree programs. Application forms and deadline dates are available from the Graduate School, 4300 Faculty/Administration Building. Awards are

contingent upon acceptance for part-time graduate study or full-time enrollment.

### 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. Deadline dates are January 10, May 10, and September 10. Contact the College Office of Student Affairs 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.



# FACULTY

Offices: 5557 Cass Avenue

### Professors

Madeline Leininger, Barbara McArthur, Darlene Mood

### Associate Professors

Arnold Bellinger, Jacquelyn Campbell, Mary Denyes, Judith Floyd, Marie L. Friedmann, Effie Hanchett, Ingvarda Hanson, Marjorie Isenberg, Mary Jirovec, June Kuczynski, Kathlene Monahan, Laurel Northouse, Marilyn Oermann, Barbara Pieper, Jeannette Poindexter, Virginia Rice, Fredericka Shea, Dawn Zagornik

### Assistant Professors

Nancy Trygar Artinian, Frances Board, Joette Clark, Marsha Cohen, Chandice Covington, Mary Delaney, Marie Draper Dykes, Margaret England, Geraldine Flaherty, Judith Fouladbakhsh, Hertha Gast, Lois Hunt, Carolyn Lindgren, Olivia Washington, Ruby Wesley

### Lecturers

Christine Belisle, Patricia Carney, Margaret Cassey, Charmell Cromer, Margaret Falahee, Debra Fifield, Susan Forest, Rosalie Greenwood, Diane Hischke, Faithy Justin, Lynn Latham, Kim Madison, Virginia McBride (Senior Lecturer), June Miller, Linda Miller, Margie Miller, Barbara Moore, Daphne Nedd, Karen Olsen, Sukhta Pradatsundarasar, Sondra Raubacher, Suzanne Savoy, Linda Sikora, Evelyn Sims, Linda Weglicki, Paulette Williams, Feleta Wilson (Senior Lecturer)

## COLLEGE DIRECTORY

Dean .....	112 Cohn; 577-4070
Administrative Officer .....	101 Cohn; 577-4086
Associate Dean .....	230 Cohn; 577-4138
	and: 1-800-544-3890
Coordinator: Graduate Programs .....	150 Cohn; 577-4092
Coordinator: Undergraduate Programs .....	252 Cohn; 577-4230
Office of Academic Affairs .....	230 Cohn; 577-4138
	and 1-800-544-3890
Undergraduate Studies Office .....	252 Cohn; 577-4188
Center for Health Research .....	315 Cohn; 577-4134
Learning Resource Center .....	15 Cohn; 577-4097
Office of Student Affairs .....	10 Cohn; 577-4082
Physical Assessment	
Learning Laboratory .....	30 Cohn; 577-4197

Mailing address for all offices:

College of Nursing,  
Wayne State University, 5557 Cass Avenue  
Detroit, Michigan 48202

# Graduate Courses (NUR)

The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.

## 525 Introduction to Developmental Disabilities. (S W 555)(SED 505)(P T 505). Cr. 3–4

Prereq: junior standing; senior standing for nursing students. Nursing students must elect for four credits. Cross-disciplinary overview of developmental disabilities, e.g., mental impairment, epilepsy, cerebral palsy, autism, through presentation of contrasting theoretical schools of thought and intervention schema. (F)

## 600 Transcultural Health and Life Cycle. (ANT 641). Cr. 3–5

Comparative theoretical and research focus on cognitive and symbolic health care beliefs and practices of selected Western and non-Western cultures, related to the life cycle: infancy, childhood, adolescence and adulthood. (W)

## 651 Nursing and the Health Care Environment. Cr. 3

Exploration of the health care system in the United States in terms of: interaction and impact of the health care environment, technology, health policy, economics, and ethics on the role of the clinical nurse specialist in the health care delivery system. (F,W)

## 700 Statistical Methods in Nursing Research. Cr. 4

Prereq: NUR 340 or equiv. Student computer account required. No credit after graduate course in statistics. Material fee as indicated in *Schedule of Classes*. Introductory statistics course combining lecture, tutorial, and laboratory; includes descriptive correlational and basic inferential statistics, data processing, and relationships to research. (F,W)

## 701 Research in Nursing. Cr. 3

Prereq: NUR 340 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)

## 702 Qualitative Research in Nursing and Health Care. Cr. 3

Nature, characteristics, and use of selected (4–6) qualitative research methods to investigate nursing and health (well-being) phenomena in order to advance nursing knowledge and improve nursing care. (Y)

## 707 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)

## 708 Field Practice in Transcultural Nursing. Cr. 2–5

Prereq: NUR 707. Study and provision of the cultural nursing needs of people from diverse cultures using transcultural nursing principles and care practices under faculty mentorship. (F)

## 710 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)

## 711 Responses and Experiences in Health and Illness. Cr. 3

Prereq: NUR 710. 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)

## 712 Adult Clinical Nursing I. Cr. 3–4

Prereq: NUR 300 or equiv., regular admission; prereq. or coreq: 710, 711, PSL 701. Material fee as indicated in *Schedule of Classes*. Conceptual and experiential base for the development of clinical nurse specialist roles of practitioner, teacher, and manager of physically ill adult. Emphasis on diagnostic reasoning and analysis and utilization of nursing and biopsychosocial theory and constructs. Includes clinical practicum, six to eight hours per week. (W)

## 713 Adult Clinical Nursing II. Cr. 2–5(4 req.)

Prereq: NUR 712. Analysis of selected health and illness concepts, theories and models which help describe, predict or explain human responses in health and illness. Application to nursing care of the physically ill adult with physiological dysfunction, and concomitant developmental and psychosocial needs. Emphasis on practitioner and educator roles of the advanced practitioner. Includes clinical practicum. (F)

## 714 Adult Clinical Nursing III. Cr. 2–6

Prereq: NUR 712; prereq. or coreq: PSL 703. Analysis of selected health and illness models that describe, predict, or explain human responses to significant life span stressors. Development of advanced practitioner roles is continued. Includes clinical practicum, six to eight hours per week. (F)

## 715 Clinical Judgment in Nursing I. Cr. 2–4

Prereq: NUR 300 or equiv.; prereq. or coreq: 710, PSL 701, admission to adult primary care nursing. Analysis of nursing explanatory decisions in primary care of adults; concepts of health and illness. Development of conceptual framework for practice. Includes clinical practicum in management of episodic illness, six hours per week. (F)

## 716 Clinical Judgment in Nursing II. Cr. 2–4

Prereq: NUR 715, PSL 701. 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, six hours per week. (W)

## 717 Adult Primary Care I. Cr. 2–4

Prereq: NUR 716, PSL 703. 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)

## 718 Adult Primary Care II. Cr. 2–4

Prereq: NUR 717. 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)

## 719 Nursing Care of Groups and Families. Cr. 3

Prereq: NUR 710. 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)

## 727 Nursing, Parenting, and Families: Synthesis of Scientific Foundations for Practice. Cr. 3

Prereq: NUR 300, 340, 710, 719, PSY 740, PSL 750, or consent of instructor. Material fee as indicated in *Schedule of Classes*. Development of a conceptual framework for one's own nursing practice. Nursing care which reflects the conceptual framework, nursing process, and a scientific knowledge base developed and tested with families in parenting phase of development. Ill and well children, adolescents, parents, and families are cared for in a variety of settings. Includes eight hours of clinical practicum per week. (F)

**728 Nursing, Parenting, and Families: Evaluation of Advanced Practice. Cr. 3**  
 Prereq: NUR 727. Seminars on evaluation of nursing care situations and theoretical/scientific basis for practice with families in parenting phase of development. In practice with ill and well children, adolescents, parents, and families, students evaluate their theoretical/scientific models of nursing care. Includes clinical practicum, eight hours per week. (W)

**729 Nursing, Parenting, and Families: Validation of Advanced Practice. Cr. 3**  
 Prereq: NUR 728. Advanced nursing practice with ill and well children, adolescents, parents, and/or families. In seminars and practice, students validate their theoretical/scientific models of care and their abilities to assume the role of clinical nurse specialist with families in the parenting phase of development. Includes clinical practicum, eight hours per week. (F)

**735 Adult Clinical Nursing IV: Critical Care. Cr. 3**  
 Prereq. or coreq: NUR 714. Development and analysis of role of advanced nurse practitioner in care of adults with life-threatening health problems. Theoretical and experimental basis for advanced nursing practice in critical care. Clinical practicum, eight hours per week. (Y)

**736 Adult Clinical Nursing V: Critical Care. Cr. 3**  
 Prereq: NUR 735. Continuation of development of knowledge, skills and values essential for care of adults with life-threatening health problems. Emphasis on analysis of theories and research applicable to care of the client and family. Practitioner, consultant, change agent, and educator roles of the Clinical Nurse Specialist in critical care. Clinical practicum, eight hours per week. (Y)

**738 Occupational Health Nursing Management I. Cr. 4**  
 Prereq: NUR 716. Integration of theoretical and clinical approaches to nursing management of occupational health problems. Role components of nurse practitioner in occupational health. (Y)

**739 Occupational Health Nursing Management II. Cr. 4**  
 Prereq: NUR 738. Study of occupational health nursing within the context of occupational health program development, implementation and evaluation. (Y)

**740 Gerontological Nursing. Cr. 3**  
 Prereq: one graduate clinical course in nursing. Analysis of theories and concepts which provide a base for specialization in gerontological nursing practice. Related clinical experience implementing preventive rehabilitative approaches, four hours per week. (B:W)

**741 Psychosocial Aspects of the Aged. Cr. 3**  
 Identification of psychosocial needs of older adults, adaptive or psychopathological responses to age-related changes, and interdisciplinary approaches for promoting adaptive responses to aging. Analysis of legislation, community provisions, and social attitudes influencing the health and health care of older adults. Includes four hours of clinical practice for nursing students. (B:W)

**742 Seminar: Research in Gerontological Nursing. Cr. 2**  
 Prereq: graduate standing. Evaluation of gerontological research and formulation of nursing research questions related to aging. (B:F)

**744 (S W 744) Policy and Research for Community Integration of Persons with Disabilities. Cr. 4**  
 Prereq: NUR 700, 701; or consent of instructor. Application of research methods to improve policies and services that enhance community integration and quality of life of persons with disabilities. (I)

**749 Human Sexuality: Implications for Health Care. Cr. 2**  
 Prereq: graduate standing in nursing or bachelor's degree. Review of literature in human sexuality; sexual health component of health care in student's clinical specialty. (Y)

**751 Advanced Community Health Nursing and Home Health Care. Cr. 3**  
 Prereq. or coreq: NUR 710; admission to community health nursing major. Historical and current issues and nursing roles in community

health and home health care. Four hours clinical practice included. (F)

**752 Nursing Care of Families. Cr. 2-3**  
 Application of theory and research appropriate to nursing assessment and intervention with families who have difficulty coping with potential or actual stress. (W)

**753 Nursing Care of Groups. Cr. 2-3**  
 Exploration of theory and practice of group process as a nursing intervention modality. (F)

**754 Nursing Care of Communities. Cr. 2-3**  
 Prereq: NUR 751. Analysis and application of nursing intervention strategies for health problems of population groups using the epidemiological approach. When taken for three credits, includes clinical practice for community health nursing majors only. (F)

**756 Change Strategies in Community Health Nursing. Cr. 3**  
 Prereq: NUR 751, 754. Syntheses of theories, modalities of practice, legislation, and health research as they affect community health nursing implementation. (W)

**760 Adult Psychiatric-Mental Health Nursing with Individuals. Cr. 6-8**  
 Prereq. or coreq: NUR 710. Material fee as indicated in *Schedule of Classes*. Theoretical foundations of psychiatric mental health nursing with individuals. Students formulate, implement and evaluate a framework for practice with adults experiencing mental health problems. (F)

**761 Psychiatric Mental Health Nursing with Children and Adolescents. Cr. 6-8**  
 Prereq. or coreq: NUR 710. Material fee as indicated in *Schedule of Classes*. Theoretical foundations of psychiatric/mental health nursing of infants, children and adolescents. Students formulate, implement and evaluate a framework for psychiatric mental health nursing practice with children and their families. (F)

**762 Psychiatric-Mental Health Nursing with Groups. Cr. 4-6**  
 Prereq: NUR 760 or 761. Development, implementation and evaluation of nursing practice models for group therapy. (F)

**763 Psychiatric-Mental Health Nursing with Families. Cr. 5-6**  
 Prereq: NUR 760 or 761. Material fee as indicated in *Schedule of Classes*. Theories of family functioning and family therapy from a systems perspective. Students formulate, implement and evaluate a model for psychiatric mental health nursing with families. (W)

**764 Community Mental Health Nursing. Cr. 3-6**  
 Prereq: NUR 760 or 761. Functions of the community mental health system. Role of nurse as program evaluator, program planner, advocate, consultant and political activist. (W)

**771 Theoretical Perspectives of Teaching in Nursing. Cr. 3**  
 Exploration of theories of nursing, teaching, learning and curriculum development as a basis for development of a conceptual framework for teaching in nursing. (F)

**772 Educational Program Development and Evaluation in Nursing. Cr. 3**  
 Formulation of plan of instruction for a nursing program including writing of behavioral objectives, development of content, selection of teaching and learning activities and development of evaluation strategies. (W)

**773 Field Practice in Clinical Teaching. Cr. 3-4**  
 Prereq: written consent of graduate officer, completion of clinical courses, NUR 771, 772. Application experience in educational setting appropriate to student's needs and goals. (Y)

**775 Administrative Process in Nursing. Cr. 3**

Theories of administration and application to nursing service. Philosophy, organization and functions of the modern nursing service. (F)

**776 Human Resource Management. Cr. 3**

Personnel function in nursing service. Emphasis on supervisor-employee relations. (W)

**777 Field Practice In Nursing Administration. Cr. 2-6**

Prereq: NUR 775; prereq. or coreq: 776, completion of first clinical year; written consent of graduate dean. Application experience in organizational setting appropriate to student's needs and goals. (Y)

**785 Seminar in Clinical Nursing. Cr. 2**

Prereq: completion of two clinical semesters. Issues affecting the role and function of the clinical nurse specialist; development of practice models; nursing and concepts of person, health, environment. (F,W)

**789 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)

**790 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)

**796 Research Practicum. Cr. 1-4**

Prereq: NUR 701, consent of adviser and instructor, written consent of graduate officer. Study of one aspect of existing research project. Includes written report. (T)

**798 Field Study. Cr. 1-4**

Prereq: NUR 701, consent of adviser and instructor, written consent of graduate officer. Study of a nursing situation or problem illustrating the application of research methods. Includes written report. (T)

**801 Nursing Theory I. Cr. 3**

Prereq: NUR 710 or equiv.; doctoral student. Analysis of conceptual frameworks and theory construction by nursing theorists. Evaluation of theoretical constructs and model building in nursing; assessment of relevance to research and professional practice. (W,S)

**802 Nursing Theory II. Cr. 3**

Prereq: NUR 801 with grade of A or B. Elaboration on theoretical and empirical approaches to knowledge in nursing. Concept development and model construction in explaining and predicting varieties of empirical phenomena. (F,S)

**805 Quantitative Research Methods In Nursing. Cr. 3**

Prereq: NUR 701; 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)

**806 Qualitative Research Methods In Nursing. Cr. 3**

Prereq: NUR 701 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)

**810 Issues, Methods and Policies In Nursing. Cr. 2**

Prereq: doctoral student; or consent of instructor. Topics include: issues and policies influencing development of nursing theories and nursing practice. Current research analyzed as basis for further research and study. (T)

**820 Topical Seminar In Nursing. Cr. 3**

Prereq: NUR 801; doctoral student. Selected topics with relevance for theory, practice and research in nursing. (T)

**899 Master's Thesis Research and Direction. Cr. 1-8**

Prereq: NUR 701, consent of instructor, written consent of graduate officer. (T)

**999 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 355.

**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 Hospital Pharmacy,*

*Occupational and Environmental Health*

*with specialization in*

*Industrial Hygiene*

*Industrial Toxicology*

*Pharmaceutical Sciences with specialization in*

*Medicinal Chemistry*

*Pharmaceutics*

*Pharmacology/Toxicology*

*MASTER OF SCIENCE in Anesthesia*

*MASTER OF SCIENCE in Medical Technology*

*with Specialization in*

*Clinical Laboratory Instrumentation*

*Education/Management*

*Hematology*

*MASTER OF SCIENCE in Occupational Therapy*

*DOCTOR OF PHILOSOPHY with a major in*

*Pharmaceutical Sciences with specialization in*

*Medicinal Chemistry*

*Pharmaceutics*

*Pharmacology/Toxicology*

*GRADUATE CERTIFICATE in Experimental Techniques  
in the Pharmaceutical Sciences*

## COLLEGE DIRECTORY

Dean:

George C. Fuller ..... 105 Shapero Hall; 577-1574

Deputy Dean of Allied Health Professions:

Dorothy M. Skinner ..... 428 Shapero Hall; 577-1368

Associate Dean:

W. Dale Walls ..... 103 Shapero Hall; 577-1708

Assistant Dean:

Gary D. Fenn ..... 121 Shapero Hall; 577-0820

Wynfred H. Schumann ..... 143 Shapero Hall; 577-1719

Assistant to the Dean:

Billie L. Brown ..... 127 Shapero Hall; 577-1574

Business Manager:

Mary Mistaleski ..... 101 Shapero Hall; 577-1576

Graduate Officer:

Gary D. Fenn ..... 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:

Wynfred H. Schumann ..... 143 Shapero Hall; 577-1719

### *Faculty of Pharmacy*

Pharmaceutical Sciences:

Hanley N. Abramson ..... 528 Shapero Hall; 577-1737

Pharmacy Practice:

Richard L. Slaughter ..... 328 Shapero Hall; 577-0824

### *Faculty of Allied Health Professions*

Anesthesia:

Prudentia A. Worth .. 2V-4, Detroit Receiving Hosp.; 745-3610

Medical Technology:

Dorothy M. Skinner ..... 233 Shapero Hall; 577-1384

Mortuary Science:

Marylouise Fritts-Williams .. 102 Mortuary Science; 577-2050

Occupational and Environmental Health:

David J.P. Bassett ..... 628 Shapero Hall; 577-1551

Occupational Therapy:

Suesetta McCree ..... 309 Shapero Hall; 577-1435

Physical Therapy:

Heather M. Hamilton ..... 435 Shapero Hall; 577-1432

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

# 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 32 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.

# PHARMACEUTICAL SCIENCES

*Office:* 528 Shapero Hall; 577-1737

*Chairperson:* Hanley N. Abramson

## *Professors*

Hanley N. Abramson, Harold E. Bailey (Emeritus), Martin Barr (Emeritus), Raymond J. Dauphinais (Emeritus), Melvin F.W. Dunker (Emeritus), George C. Fuller, Fusao Hirata, Robert T. Louis-Ferdinand, Willis E. Moore (Emeritus), Janardan B. Nagwekar, Henry C. Wormser

## *Adjunct Professor*

David J.P. Bassett

## *Associate Professors*

Randall L. Commissaris, William J. Lindblad, Richard K. Mulvey (Emeritus), Craig K. Svensson

## *Adjunct Associate Professors*

Merlin E. Ekstrom, Eun Woo Lee, Joel G. Pounds, Alice M. Young

## *Assistant Professors*

Richard A. Gibbs, David K. Pitts, Manik S. Sardesai, Patrick M. Woster

## *Adjunct Assistant Professors*

John J. Nagelhout, Francis R. Gerbasi, Steven E. Rose

## Graduate Degrees and Certificates

*GRADUATE CERTIFICATE in Experimental Techniques in the Pharmaceutical Sciences*

*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 complimentary 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.

## Graduate Certificate in Experimental Techniques in the Pharmaceutical Sciences

Continued growth in the chemical and pharmaceutical industry, coupled with rapid expansion in the field of analytical toxicology (that area concerned with the analysis of drugs in biological fluids), has created a need for individuals with training in modern techniques of quantitative and qualitative drug analysis. In addition to chemical and pharmaceutical firms, many industries and university research facilities, as well as hospitals and other health care providers, maintain analytical toxicology laboratories which require skilled technical personnel.

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14. Students entering this program must have an undergraduate degree in the physical or life sciences.

**CERTIFICATE REQUIREMENTS:** Students may earn a Graduate Certificate in Experimental Techniques in the Pharmaceutical Sciences by completing a minimum of thirteen credits as outlined below. Provision has been made for students to concentrate in Pharmacology or Medicinal Chemistry, depending on career objectives. Students completing the Certificate Program who decide to apply for admission to a Wayne State University graduate degree program may transfer up to nine credits from the Certificate Program to the graduate degree. All course work must be completed in accordance with the academic procedures of the Graduate School governing graduate scholarship and degrees; see pages 20–30.

A minimum honor point average of 3.0 must be achieved to earn a Graduate Certificate. The program must be completed within three years.

The minimum thirteen semester credits required for the Certificate should be chosen from the following courses:

<i>Required Courses:</i>	<i>credits</i>
PSC 673—Quantitative Drug Analysis .....	3
PSC 672—Techniques in Animal Experimentation .....	1
PSC 820—Physical Methods for Structure Elucidation of Medicinals .....	2

### *Electives:*

PSC 610 and PSC 620	
—Survey of Pharmacology I .....	3
—Survey of Pharmacology II .....	3
or PSC 770 and PSC 771	
—Advanced Medicinal Chemistry .....	3
—Chemistry of Chemotherapeutic Agents .....	3

### *And ONE of the following:*

PSC 780—Research Techniques in Medicinal Chemistry .....	1
PSC 781—Research Techniques in Pharmaceutics .....	1
PSC 782—Research Techniques in Pharmacology .....	1

## 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 14. 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 16).

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 Graduate Officer, 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-two 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 pages 20–30.

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 or 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, must be in courses open only to graduate students (courses numbered 700 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 department chairperson 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 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:** At the conclusion of the Fall and Winter semesters, progress of every student in the program will be reviewed by a departmental 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 or dissertation

outline, etc., and overall professional development. This evaluation 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 chairperson 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 14), 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 16).

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 Graduate Officer, 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 as stated on pages 20–30. 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.

## Financial Aid

General sources of financial aid for graduate students are listed in the section on Graduate Financial Aid, beginning on page 32 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, 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)

*The following courses, numbered 600–999, are offered for graduate credit. Courses numbered 000–599, which are offered for undergraduate credit only, may be found in the undergraduate bulletin. For interpretation of numbering system, signs and abbreviations, see page 463.*

### 600 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)

### 610 Survey of Pharmacology I. Cr. 3

Prereq: BIO 340, CHM 226, MAT 201; graduate standing or consent of instructor. Survey of pharmacology for entering graduate students in the pharmaceutical sciences. Emphasis on new drug development. (F)

### 620 Survey of Pharmacology II. Cr. 3

Prereq: PSC 610. Continuation of PSC 610. (W)

### 630 Computer Applications in the Pharmaceutical Sciences. Cr. 2

Prereq: last professional year, graduate, or graduate professional standing; consent of instructor. Specialized computer topics in the pharmaceutical sciences, including data manipulation, molecular modeling, and pharmacokinetic analysis. (Y)

### 660 (PPR 660) 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)

### 672 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)

### 680 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)

### 689 Toxicology and Adverse Drug Reactions. Cr. 3

Prereq: last professional year, graduate, or graduate professional standing. Material fee as indicated in *Schedule of Classes*. Study of toxicology and adverse drug reactions including metabolism, hypersensitivity, carcinogenicity, drug–drug interactions, and other factors hazardous to human health. (Y)

- 704 Fundamentals of Pharmacokinetics. Cr. 3**  
Prereq: consent of instructor. No credit after PPR 423. Survey of basic principles of pharmacokinetics with emphasis on factors influencing dosage regimen design. (Y)
- 710 Pharmacodynamics I. Cr. 3**  
Prereq: B.S. in pharmacy, biology or chemistry; consent of instructor; coreq: PSC 410 for students lacking pharmacology background. Introduction to pharmacodynamics; conferences, demonstration and review of research from pharmacology literature. (F)
- 711 Pharmacodynamics II. Cr. 3**  
Prereq: PSC 710 and consent of instructor; coreq: 420 for students lacking pharmacology background. Continuation of PSC 710. (W)
- 712 Advanced Pharmacology I. Cr. 2**  
Prereq: consent of instructor. Study of the theories of drug action; cellular pharmacology. (I)
- 713 Advanced Pharmacology II. Cr. 2**  
Prereq: consent of instructor. Continuation of PSC 712. (I)
- 714 Advanced Pharmacology Laboratory. Cr. 2**  
Prereq. or coreq: PSC 711. Laboratory experimentation on principles discussed in PSC 712 or PSC 713. (I)
- 715 Biochemical Pharmacology. Cr. 2**  
Prereq: consent of instructor. Discussion of the principles of the biochemical aspects of drug action. (I)
- 760 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)
- 770 Advanced Medicinal Chemistry. Cr. 3**  
Prereq: consent of instructor. No credit after PSC 430. 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)
- 771 Chemistry of Chemotherapeutic Agents. Cr. 3**  
Prereq: consent of instructor. No credit after PSC 440. Discussion of agents used to treat infections, diseases and neoplastic disorders. Topics include: structure, activity relationships, mechanism of action, and therapeutic uses of these drugs. (Y)
- 780 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)
- 781 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)
- 782 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)
- 785 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)
- 786 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)
- 787 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)
- 799 Master's Essay Direction. Cr. 2(2 Req., Max. 2)**  
Prereq: consent of adviser. (T)
- 804 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)
- 805 Computer Programs in Pharmacokinetics. Cr. 1**  
Coreq: PSC 804, consent of instructor. Analysis of commonly-used computer programs in pharmacokinetic data analysis. Topics include: curve stripping, curve fitting, statistical moment analysis. Extensive student analysis of data with common programs. (B)
- 820 Physical Methods for Structure Elucidation of Medicinals. Cr. 2**  
Prereq: graduate standing and consent of instructor. New physical methods used to determine the structure of natural and synthetic medicinal agents. (Y)
- 865 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)
- 866 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)
- 867 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)
- 899 Master's Thesis Research and Direction. Cr. 1-8(8 req., max. 8)**  
Prereq: consent of adviser. (T)
- 999 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

## Professor

Richard L. Slaughter

## Adjunct Professor

Larry K. Shoup

## Associate Professors

David J. Edwards, Gary D. Fenn, Paul J. Munzenberger, Michael J. Rybak, Wynefred H. Schumann, James G. Stevenson, Jesse C. Vivian

## Adjunct Associate Professors

Michael R. Alexander, Kenneth H. Fish, Richard L. Lucarotti, Douglas A. Miller, Michael Powell, Gregory S. Umstead, Barbara M. Zarowitz

## Assistant Professors

Elaine M. Bailey, Steven R. Erickson, Susan C. Fagan, Linda A. Jaber, Pramodini B. Kale, GERALYNN B. SMITH, Maureen A. Smythe, Mary Jane Sudekum, James E. Tisdale

## Adjunct Assistant Professors

J.V. Anandan, David S. Bach, Julie R. Berman, Paul W. Bush, Daniel M. Colaluca, William A. Cornelis, Simon N. Cronin, Cynthia G. Derouin, Gerald L. Emmer, Richard H. Jennings, Beverly P. Kershaw, David B. Levy, Ronald H. Lukasiewicz, Martha J. Miller, John Mitchell, Merlin V. Nelson, Cynthia L. Quince, Randy F. Schad, Bruce E. Vinson, Paul C. Walker, David B. Wright

## Graduate Degrees

**DOCTOR OF PHARMACY** with a major in Clinical Pharmacy

**MASTER OF SCIENCE** with a major in Hospital Pharmacy

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 on drug therapeutics who is prepared to provide professional leadership in the practice of pharmacy. The Master of Science with a major in hospital pharmacy 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

The program may be completed under one of three options:

**Option I:** This option requires twenty-one months (five semesters for completion. Two semesters of intensive didactic work is followed by twelve one-month clinical clerkship rotations.

**Option II:** In this option, the didactic component is taken over two years (fall and winter semesters) with the clinical clerkship rotation completed over either a twelve or a twenty-four month period. This option is intended for highly motivated practitioners who are unable to undertake full-time studies.

**Option III:** Wayne State University undergraduate pharmacy students may qualify for provisional admission to the program at the end of their second undergraduate professional year. Provisionally admitted students will follow the alternate last professional year undergraduate program outlined in the Wayne State University Undergraduate

Bulletin, and may qualify for the Doctor of Pharmacy degree in one calendar year subsequent to completion of the Bachelor of Science in Pharmacy.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 14. 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 16).

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 \$100.00 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 pages 20-30, respectively. The combined undergraduate and graduate professional program must include the following courses or their equivalent:

PPR 660	.....	Biostatistics
PPR 661	.....	D. P. & T. 1: Cardiology
PPR 662	.....	D. P. & T. 2: Infectious Disease
PPR 663	.....	D. P. & T. 3: Hematology/Oncology
PPR 664	.....	D. P. & T. 4: Psychiatry/Neurology
PPR 665	.....	D. P. & T. 5: Gastroenterology/Endocrinology
PPR 666	.....	D. P. & T. 6: Nephrology/Fluid and Electrolytes
PPR 667	.....	D. P. & T. 7: Rheumatology/Pediatrics/Patient Assessment
PPR 668	.....	D.P. & T. 8: Immunology/Pulmonary/Toxicology
PPR 760	.....	Introduction to Clinical Research
PPR 767	.....	Applied Pharmacokinetics: Advanced
PPR 784	.....	Seminar in Clinical Pharmacy

The following one-month clinical clerkship rotations are required:

PPR 701	Clinical Pharmacy Clerkship: Internal Medicine
PPR 702	Clinical Pharmacy Clerkship: Ambulatory/Family Practice
PPR 703	Clinical Pharmacy Clerkship: Drug Information
PPR 704	Clinical Pharmacy Clerkship: Pediatrics
PPR 706	Clinical Pharmacy Clerkship: Clinical Pharmacokinetics

An additional seven one-month clinical clerkship rotations, one of which must be in a critical care area, are to be chosen from the following; or, if the student desires to specialize and scheduling permits, any required or elective rotation, with the exception of PPR 721, may be elected again at a different clinical site.

PPR 705	Clinical Pharmacy Clerkship: Psychiatry
PPR 707	Clinical Pharmacy Clerkship: Surgery
PPR 708	Clinical Pharmacy Clerkship: Pediatric Hematology – Oncology
PPR 709	Clinical Pharmacy Clerkship: Internal Medicine – Endocrinology
PPR 710	Clinical Pharmacy Clerkship: Pediatric Intensive Care
PPR 711	Clinical Pharmacy Clerkship: Geriatrics
PPR 712	Clinical Pharmacy Clerkship: Cardiology
PPR 713	Clinical Pharmacy Clerkship: Infectious Disease
PPR 714	Clinical Pharmacy Clerkship: Oncology
PPR 715	Clinical Pharmacy Clerkship: Parenteral/Enteral Nutrition
PPR 716	Clinical Pharmacy Clerkship: Ambulatory Internal Medicine
PPR 717	Clinical Pharmacy Clerkship: Pharmacy Practice Management
PPR 721	Clinical Pharmacy Clerkship: Clinical Research
PPR 722	Clinical Pharmacy Clerkship: Pediatric Intensive Care
PPR 723	Clinical Pharmacy Clerkship: Adult Intensive Care
PPR 724	Clinical Pharmacy Clerkship: Burn Intensive Care
PPR 725	Clinical Pharmacy Clerkship: Emergency Medicine
PPR 726	Clinical Pharmacy Clerkship: Neurology
PPR 727	Clinical Pharmacy Clerkship: Nephrology
PPR 728	Clinical Pharmacy Clerkship: Pediatric/Adolescent Psychology

**Academic Progress:** Continuance in the Doctor of Pharmacy program depends upon satisfactory progress as determined by the Doctor of Pharmacy Program 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 Program Committee before registering again.

**Certificate in Aging:** Interested candidates may concurrently earn a Graduate Certificate in Gerontology from the Institute of Gerontology. For further information see page 39 of this bulletin.

## Financial Aid

General sources of financial aid for graduate students are listed in the section on Graduate Financial Aid, beginning on page 32 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 Hospital Pharmacy

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) to full-time students.

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14. For the master's degree program, with a major in hospital pharmacy, 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 16).

The General portion of the Graduate Record Examination, 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 American Society of Hospital Pharmacists 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, Hospital Pharmacy 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 Hospital Pharmacy 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 pages 20–30.

**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 700 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*.



MGT 606	.....	The Process of Management
MGT 706	.....	Management and the Organization
PPR 660	.....	Biostatistics
PPR 750	.....	Special Topics in Hospital Pharmacy Practice Management
PPR 751	.....	Fiscal Management of the Hospital Pharmacy
PPR 752	.....	Management of Computer Resources in Hospital Pharmacy Practice
PPR 770	.....	Organization of Pharmaceutical Services in Health Care Facilities I
PPR 771	.....	Organization of Pharmaceutical Services in Health Care Facilities II
PPR 788	.....	Seminar in Hospital Pharmacy
PPR 799	or PPR 899	
		—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)*

MGT 764	.....	Management of Human Resources
MGT 768	.....	Executive Decision Making
PPR 767	.....	Applied Pharmacokinetics: Advanced
PPR 781	.....	Intravenous Therapeutics: Advanced
PPR 790	.....	Directed Study in Pharmacy Practice

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 Shaper 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 Hospital Pharmacists (ASHP) accredited hospital pharmacy 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, Henry Ford Hospital, Sinai Hospital, Providence Hospital, William Beaumont Hospital. For further information regarding the combined residency/master's program contact: James G. Stevenson, Hospital Pharmacy Program Director, Department of Pharmacy Practice, College of Pharmacy and Allied Health Professions, Wayne State University, Detroit, Michigan 48202.

## GRADUATE COURSES (PPR)

*The following courses, numbered 600-999, are offered for graduate credit. Courses numbered 000-599, which are offered for undergraduate credit only, may be found in the undergraduate bulletin. For interpretation of numbering system, signs and abbreviations, see page 463.*

**519 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)

**610 Legal Environment in Pharmacy. Cr. 2-3**  
Prereq: PPR 310 or equiv. 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)

**660 Biostatistics. (PSC 660). 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)

**661 Disease Processes and Therapeutics I: Cardiology. Cr. 2**  
Prereq: admission to Pharm.D. program. Material fee as indicated in *Schedule of Classes*. Pathophysiology of disease states, clinical pharmacology and therapeutic application of drugs: cardiology. (Y)

**662 Disease Processes and Therapeutics II: Infectious Diseases. Cr. 2**  
Prereq: admission to Pharm.D. program. Material fee as indicated in *Schedule of Classes*. Pathophysiology of disease states, clinical pharmacology and therapeutic application of drugs: infectious diseases. (Y)

**663 Diseases Processes and Therapeutics III: Hematology/Oncology. Cr. 2**  
Prereq: admission to Pharm.D. program. Material fee as indicated in *Schedule of Classes*. Pathophysiology of disease states, clinical pharmacology and therapeutic application of drugs: hematology and oncology. (Y)

**664 Disease Processes and Therapeutics IV: Psychiatry/Neurology. Cr. 2**  
Prereq: admission to Pharm.D. program. Material fee as indicated in *Schedule of Classes*. Pathophysiology of disease states, clinical pharmacology and therapeutic application of drugs: psychiatry and neurology. (Y)

**665 Disease Processes and Therapeutics V: Gastroenterology/Endocrinology. Cr. 2**  
Prereq: admission to Pharm.D. program. Material fee as indicated in *Schedule of Classes*. Pathophysiology of disease states, clinical pharmacology and therapeutic application of drugs: gastroenterology and endocrinology. (Y)

**666 Disease Processes and Therapeutics VI: Nephrology/Fluid and Electrolytes. Cr. 3**  
Prereq: admission to Pharm.D. program. Material fee as indicated in *Schedule of Classes*. Pathophysiology of disease states, clinical

pharmacology and therapeutic application of drugs: nephrology and fluid electrolytes. (Y)

**667 Disease Processes and Therapeutics VII: Rheumatology, Pediatrics and Patient Assessment. Cr. 2**

Prereq: admission to Pharm.D. program. Material fee as indicated in *Schedule of Classes*. Pathophysiology of disease states, clinical pharmacology and therapeutic application of drugs: rheumatology, pediatrics, patient assessment. (Y)

**668 Disease Processes and Therapeutics VIII: Immunology/Pulmonary/Toxicology. Cr. 2**

Prereq: admission to Pharm. D. program. Material fee as indicated in *Schedule of Classes*. Pathophysiology of disease states, clinical pharmacology and therapeutic application of drugs: immunology, pulmonary, and toxicology. (F)

**670 Home Health Care. Cr. 3**

Prereq: last professional year, graduate, or graduate professional standing. Material fee as indicated in *Schedule of Classes*. Review of the availability and applications of surgical appliances and other health-care devices used in patient care. (F)

**686 Principles of Pediatric Pharmacy. Cr. 2**

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)

**687 Geriatric Pharmacy Practice. Cr. 2**

Prereq: last professional year standing, graduate or graduate professional standing. Material fee as indicated in *Schedule of Classes*. 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. (Y)

**701 Clinical Pharmacy Clerkship: Internal Medicine. Cr. 2-8(6 req.; max. 8)**

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)

**702 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)

**703 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)

**704 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)

**705 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)

**706 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)

**707 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)

**708 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)

**709 Clinical Pharmacy Clerkship: Internal Medicine - Endocrinology. Cr. 2-4(Max. 4)**

Prereq: admission to Pharm. D. program. Offered for S and U grades only. Major disease entities; emphasis on drug therapy and methodology of choice, participation in patient rounds, medication profile and adverse drug reaction systems, admission and discharge drug histories; in-service clinical education: endocrinology. (Y)

**710 Clinical Pharmacy Clerkship: Pediatric Intensive Care. Cr. 2-4(Max. 4)**

Prereq: admission to Pharm.D. program. Major disease entities; emphasis on drug therapies and modalities of choice, participation in patient rounds, medication profiles and adverse drug reaction systems, admission and discharge drug histories; in-service clinical education: pediatric intensive care. (T)

**711 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)

**712 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)

**713 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)

**714 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)

**715 Clinical Pharmacy Clerkship: Parenteral/Enteral Nutrition. 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: parenteral and enteral nutrition. (F,W)

**716 Clinical Pharmacy Clerkship: Ambulatory Internal 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 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 internal medicine. (T)

**717 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)

**721 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)

**722 Clinical Pharmacy Clerkship: Pediatric 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 profiles and adverse drug reaction systems, admission and discharge drug histories; in-service clinical education: pediatric intensive care. (T)

**723 Clinical Pharmacy Clerkship: Adult 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 profiles and adverse drug reaction systems, and in-service clinical education in adult intensive care. (T)

**724 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)

**725 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)

**726 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. (T)

**727 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)

**728 Clinical Pharmacy Clerkship: Pediatric/Adolescent Psychiatry. Cr. 2-4**

Prereq: admission to Pharm.D. program. Offered for S and U grades only. Major disease entities; emphasis on drug and non-drug therapies and case evaluation. Participation in patient rounds, medication education groups, psychopharmacology and pharmacokinetic consultations: pediatric and adolescent. (T)

**750 Special Topics in Hospital Pharmacy Practice Management. Cr. 2**

Prereq: consent of instructor. Practice management problems pertinent to current institutional pharmacy. Problem-centered, participant involved case studies and methodology for the hospital pharmacy graduate student. (F)

**751 Fiscal Management of the Hospital Pharmacy. Cr. 3**

Prereq: consent of instructor. Lecture and case studies on managing the fiscal resources of the hospital pharmacy department and reimbursement for hospital pharmacy services. (W)

**752 Management of Computer Resources in Hospital Pharmacy Practice. Cr. 2**

Prereq: consent of instructor. Lecture and case studies on managing computer resources for the hospital pharmacy department. (W)

**760 Introduction to Clinical Research. Cr. 2**

Prereq: PPR 660. Introduction to experimental design, research protocol development, grant preparation, data analysis, and report writing in clinical pharmacy research. (W)

**767 Applied Pharmacokinetics: Advanced. Cr. 4**

Prereq: consent of instructor; graduate standing. Material fee as indicated in *Schedule of Classes*. 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. (W)

**770 Organization of Pharmaceutical Services in Health-Care Facilities I. Cr. 2**

Prereq: consent of instructor. Development of pharmaceutical services in our nation's hospitals and related health-care facilities; 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)

**771 Organization of Pharmaceutical Services in Health-Care Facilities II. Cr. 2**

Prereq: PPR 770 and consent of instructor. Determining the pharmaceutical service needs of health-care facilities; developing special services such as drug information; special formulation; utilization of electronic data processing; personnel training and management. (W)

**781 Intravenous Therapeutics: Advanced. Cr. 2**

Prereq: consent of instructor. No credit after PHA 581, PHA 681 or PPR 581. Material fee as indicated in *Schedule of Classes*. 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. (F,W)

**784 Seminar in Clinical Pharmacy. Cr. 1-3**

Prereq: admission to Pharm.D. program. Material fee as indicated in *Schedule of Classes*. Reports and discussions by students and members of the staff concerning current developments in clinical pharmacy. (F,W)

**788 Seminar in Hospital Pharmacy. 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 hospital pharmacy. (Y)

**790 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)

**799 Master's Essay Direction. Cr. 1-4(Max. 4)**  
Prereq: consent of adviser.

(T)

**899 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), medical technology, occupational and environmental health and occupational therapy. 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 32 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

## Assistant Professors

Celestine Harrigan, John Nagelhout, Karen Zaglaniczny

## Instructors

Karen Crowforth, Valdor Haglund, Phil Mangahas, Prudentia Worth

## Adjunct Associate Professor

Roy Aston

## Adjunct Assistant Professors

Samuel Perov, Jack Young

## Adjunct Instructors

Donna Auger-Devoe, Frances Bartowiak, Kathleen Bertolino, Orest Chornij, Mary Eustice, Katherine Garcia, Philip Kyko, Karen Lakanen, Kathleen Lowry, Kim Mason, Richard Merkle, Russell Morrison, Linda Oliver, John Perowski, Gary Pineau, Orlando Sison, Lynn Taukert

## 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. Professional services are also provided in the areas of respiratory care, pre- and post-anesthetic care and cardio-pulmonary resuscitation. 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. The nurse anesthetist provides high quality anesthesia care under the general direction of an otherwise licensed health care provider delegating anesthesia functions.

### Master of Science in Anesthesia

The Department of Anesthesia, based at the Detroit Receiving Hospital/University Health Center, offers two tracks leading to the Master of Science in Anesthesia:

**Track I:** This curriculum prepares the registered nurse for entry into practice as a Certified Registered Nurse Anesthetist (CRNA). This program is accredited by the Council on Accreditation of Nurse Anesthesia Educational Programs. All Detroit Medical Center affiliated anesthesiology departments, as well as those at the Veterans' Administration and other major hospitals, participate as clinical sites for the program.

**Track II:** This curriculum is designed for the CRNA possessing a baccalaureate degree and who wishes to expand his/her skills as an educator or administrator in nurse anesthesia educational programs.

**Admission** to this program is contingent upon admission to the Graduate School; for requirements, see page 14. For the master's degree program in anesthesia, all applicants must file a departmental application (available from the department office), and comply with the following:

1. Be currently licensed as a registered nurse in Michigan.

2. Possess a Bachelor of Science in Nursing, or in an appropriate biological science, with eight credits in chemistry, including inorganic, organic and biochemistry, and four credits in biology including microbiology.

Applicants whose native language is other than English must demonstrate proficiency in English prior to beginning the program (see page 16).

Application materials can be obtained by contacting: Department of Anesthesia, College of Pharmacy and Allied Health Professions, Wayne State University, Detroit, Michigan 48202.

### Track I Candidates: Additional Admission Requirements

Applicants must:

1. Have an honor point average of 2.8 or above, and a science h.p.a. of 3.0 or above. Chemistry grades must be 'B' or above and no more than ten years old.
2. Have completed the following graduate level prerequisite courses, or their equivalents, prior to electing anesthesia courses.

PSL 555 .....	Physiologic Anatomy
EER 763 .....	Fundamentals of Statistics
EER 764 or NUR 701	
—Fundamental Research Skills	
—Research in Nursing	

3. Provide scores for the General portion of the Graduate Record Examination.
4. Have current certification in Advanced Cardiac Life Support.
5. 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.
6. Obtain a physical examination.
7. 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.
8. Appear for a personal interview with the department admissions committee.

### Track II Candidates: Additional Admission Requirements

Applicants must:

1. Have current certification or 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. A minimum of one year of experience in anesthesia practice and a personal interview are preferred.

**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 pages 20-30.

### Track I: Course Requirements

AN 702	Clinical Anesthesia Practicum I
AN 703	Clinical Anesthesia Practicum II
AN 704	Clinical Anesthesia Practicum III
AN 705	Clinical Anesthesia Practicum IV
AN 706	Clinical Anesthesia Practicum V
AN 710	Pharmacology I
AN 711	Pharmacology II
AN 712	Advanced Pharmacology of Anesthesia
AN 713	Primary Clinical Anesthesia Research
AN 715	Principles of Anesthesia I
AN 716	Principles of Anesthesia II
AN 720	Physiology for the Anesthetist I
AN 721	Physiology for the Anesthetist II
AN 724	Pathophysiology for the Anesthetist
AN 750	Chemistry and Physics of Anesthesia
AN 760	Regional Anesthesia
AN 762	Respiratory Care
AN 773	Process of Teaching
AN 778	Professional Dimensions of Anesthesia Practice
AN 788	Anesthesia Seminar
AN 789	Terminal Project
AN 791	Directed Study

### Track II: Course Requirements

Track II candidates may vary course selections with consent of their adviser.

AN 760	Regional Anesthesia
AN 773	Process of Teaching
AN 788	Anesthesia Seminar
AN 789	Terminal Project
EER 763	Fundamentals of Statistics
PSL 555	Physiologic Anatomy
PSL 701	Basic Graduate Physiology Lecture I
PSL 703	Basic Graduate Physiology Lecture II
NUR 701	Research in Nursing
NUR 771	Theoretical Perspectives of Teaching in Nursing
NUR 772	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:** An adviser will be assigned by the department chairperson. The adviser will approve the *Plan of Work* (for Track II applicants) and any 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.' 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.

## GRADUATE COURSES (AN )

The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.

<b>702 Clinical Anesthesia Practicum I. Cr. 1</b>	
Prereq: Registered Nurse, admission to professional curriculum.	
Introduction to clinical anesthesia application.	(W)
<b>703 Clinical Anesthesia Practicum II. Cr. 2</b>	
Prereq: AN 702. Continuation of AN 702.	(S)
<b>704 Clinical Anesthesia Practicum III. Cr. 3</b>	
Prereq: AN 703. Continuation of AN 703.	(F)
<b>705 Clinical Anesthesia Practicum IV. Cr. 3</b>	
Prereq: AN 704. Continuation of AN 704.	(W)
<b>706 Clinical Anesthesia Practicum V. Cr. 2</b>	
Prereq: AN 705. Continuation of AN 705.	(S)
<b>710 Pharmacology I. Cr. 3</b>	
Prereq: Registered Nurse, admission to professional curriculum.	
Material fee as indicated in <i>Schedule of Classes</i> . Introduction to anesthetic pharmacology; focus on pharmacotherapeutics of drugs used in modern anesthesia practice. Discussion of primary anesthesia agents.	(F)
<b>711 Pharmacology II. Cr. 3</b>	
Prereq: Registered Nurse, AN 710. Material fee as indicated in <i>Schedule of Classes</i> . Analysis of theories of pharmacology.	(W)
<b>712 Advanced Pharmacology of Anesthesia. Cr. 2</b>	
Prereq: R.N., admission to professional curriculum. Material fee as indicated in <i>Schedule of Classes</i> . General qualitative and quantitative aspects of pharmacology. Interaction and kinetics of pharmacologic agents and their relationship to anesthetic practice.	(F)
<b>713 Clinical Anesthesia Research. Cr. 2</b>	
Prereq: Registered Nurse, AN 704, admission to professional curriculum. Material fee as indicated in <i>Schedule of Classes</i> . Provides students with methods for descriptive and experimental inquiry. Assists students in integration of previously learned statistics, research and bioscience course into a sound research project for nurse anesthesia.	(F)
<b>715 Principles of Anesthesia I. Cr. 5</b>	
Prereq: Registered Nurse, admission to professional curriculum. Material fee as indicated in <i>Schedule of Classes</i> . Principles and usage of all anesthesia equipment including electronic instrumentation. Theoretical exploration of various techniques of anesthesia.	(F)
<b>716 Principles of Anesthesia II. Cr. 3</b>	
Prereq: Registered Nurse, AN 715. Material fee as indicated in <i>Schedule of Classes</i> . Advanced knowledge in application and use of modern anesthesia monitoring technology.	(W)
<b>720 Physiology for the Anesthetist I. Cr. 5</b>	
Prereq: Registered Nurse, admission to professional curriculum. Material fee as indicated in <i>Schedule of Classes</i> . Sequential anatomy and physiology of respiratory and nervous systems, as they apply to anesthesia.	(F)

**721 Physiology for the Anesthetist II. Cr. 5**

Prereq: Registered Nurse, AN 720. Material fee as indicated in *Schedule of Classes*. In-depth science background in renal, gastrointestinal, cardiovascular and endocrine physiology. (W)

**724 Pathophysiology for the Anesthetist. Cr. 2**

Prereq: Registered Nurse, AN 721. Material fee as indicated in *Schedule of Classes*. Analysis of disease processes; correlation of pathophysiology with pharmacological principles of anesthesia care. (S)

**750 Chemistry and Physics of Anesthesia. Cr. 2**

Prereq: Registered Nurse, admission to professional curriculum. Material fee as indicated in *Schedule of Classes*. Analysis and principles of chemistry and physics as applied to anesthesia. (F)

**760 Regional Anesthesia. Cr. 2**

Prereq: registered nurse; consent of adviser. Material fee as indicated in *Schedule of Classes*. 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. (S)

**762 Respiratory Care. Cr. 2**

Prereq: Registered Nurse; AN 720 or equiv.; admission to professional program. Advanced evaluation of cardiopulmonary/respiratory complication. Clinical anesthesia care. (S)

**773 Process of Teaching. Cr. 2-3**

Prereq: CRNA, Registered Nurse, consent of adviser. Material fee as indicated in *Schedule of Classes*. Instruction in and clinical application of nurse anesthesia process. (T)

**778 Professional Dimensions of Anesthesia Practice. Cr. 2**

Prereq: consent of adviser. Material fee as indicated in *Schedule of Classes*. Analysis of role of professional anesthesia associations, anesthesia accreditation agencies, hospital and governmental regulatory agencies relating to nurse anesthesia practice. (W)

**788 Anesthesia Seminar. Cr. 1**

Prereq: CRNA; consent of adviser. Current developments in concepts and theories of nurse anesthesia. (T)

**789 Terminal Project. Cr. 3**

Prereq: CRNA; consent of adviser. Material fee as indicated in *Schedule of Classes*. Culmination of graduate course work in anesthesia. (T)

**791 Directed Study. Cr. 2**

Prereq: BSN, BSA, CRNA, admission to professional curriculum, AN 713, consent of adviser. Material fee as indicated in *Schedule of Classes*. Implementation of graduate research project in clinical or laboratory setting. (T)

# MEDICAL TECHNOLOGY

Office: 233 Shapero Hall; 577-1384

Chairperson: Dorothy M. Skinner

## Associate Professor

Dorothy M. Skinner

## Assistant Professors

Janet Brown-Castillo, Ann Wallace

## Adjunct Assistant Professors

James R. Adams, Grace E. Hill

## Graduate Degree

*MASTER OF SCIENCE in Medical Technology with specializations in clinical laboratory instrumentation, education/management, and hematology*

## Master of Science in Medical Technology

By means of a core curriculum, all graduate students in medical technology are provided with a background in both educational and management skills. Additional course work and research pertaining to the specialty area and electives complete the program. The education/management specialty provides the student with the experience and knowledge necessary for effective teaching and to develop administrative acumen and managerial skills. The specialties in clinical laboratory instrumentation and hematology provide the theoretical and technical skills required by today's specialist.

In addition to the specialties noted, individual programs may be designed in other areas of clinical laboratory science. Students are encouraged to select electives that will accommodate his/her program to specific needs and interests.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 14. In addition, applicants must satisfy the following criteria (qualified admissions are not granted in medical technology):

1. have successfully completed a national certification examination in medical technology (NCA-ASCP or equivalent); credentials must be approved by the department, and
2. have at least one year of practice experience in medical technology 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 16).

**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 Medical Technology, College of Pharmacy and Allied Health Professions, Wayne State University, Detroit, Michigan 48201. Applications are accepted throughout the year. Accepted students may begin in any semester.

**DEGREE REQUIREMENTS** for the Master of Science in Medical Technology 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 the core curriculum listed below, 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 pages 20–30.

### Credits

Specialties	Core	Specialty	Elective	Total
Clinical Laboratory				
Instrumentation	15	10–11	9–10	34–36
Education/Management	15	10–11	9–10	34–36
Hematology	15	10	9–10	34–35

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 700 and above).

#### Core Curriculum:

Graduate-level course in Computer Science (CSC), or TED 602, TED 603, EER 765	
M T 709	Instruction in Teaching Techniques
M T 711	Current Problems and Regulations in Hospital Laboratory Functions
M T 791	Directed Study
M T 799 or M T 890	
	Master's Essay Direction
	Terminal Project

#### One of the following:

EER 763	Fundamentals of Statistics
EER 764	Fundamental Research Skills
NUR 701	Research in Nursing
PPR 660	Biostatistics
PSL 705	Introductory Biostatistical Methods

#### Additional Requirements for Clinical Laboratory Instrumentation:

M T 707	Graduate Instrumentation
M T 787	Special Topics in Clinical Laboratory Instrumentation
M T 788	Study in Clinical Instrumentation and Electronics
M T 791	Directed Study

#### Additional Requirements for Education/Management:

M T 788	Study in Clinical Instrumentation and Electronics
M T 707	Graduate Instrumentation
M T 789	Study in Medical Technology Instruction
MGT 606 or ACC 601	
	The Process of Management
	Financial Accounting

#### Additional Requirements for Hematology:

M T 702	Pathophysiology of Hemostasis
M T 707	Graduate Instrumentation
M T 710	Advanced Hematology
M T 788	Study in Clinical Instrumentation and Electronics

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 Department Chairperson 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.

### Financial Aid

Sources of financial aid for graduate students are enumerated in the section on *Graduate Financial Aid* beginning on page 32 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 (M T)

The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.

#### 507 Clinical Pathology Correlation. Cr. 1–2

Prereq: senior standing in medical technology program or consent of instructor. Correlation of laboratory data and clinical history through the analysis of case studies. (W,S)

#### 702 Pathophysiology of Hemostasis. (PSL 783). Cr. 1

Review of the normal mechanism of hemostasis; the mechanism and management of bleeding and coagulation disorders. (F)

#### 707 Graduate Instrumentation. Cr. 3

Material fee as indicated in *Schedule of Classes*. In-depth analysis and application of theories of operation, maintenance and troubleshooting of analytical clinical laboratory instrumentation. Tours of laboratory instrumentation. (S)

#### 709 Instruction in Teaching Techniques. (O T 751). Cr. 2

Discussion and planning exercises in allied health education. Topics include: preparing objectives, educational strategies, evaluation and curricula in allied health programs. (F)

#### 711 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)

#### 730 (O T 730) 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)

#### 788 Study in Clinical Instrumentation and Electronics. Cr. 3

Prereq: graduate medical technology student. Material fee as indicated in *Schedule of Classes*. Instruction and laboratory work in areas relating to medical technology. Directed study with laboratory

<sup>1</sup> In addition to Core Requirement.



application in medical technology in areas of clinical instrumentation and electronics. (W)

**789 Study In Medical Technology Instruction. Cr. 1-2**  
Participation and involvement in teaching an undergraduate medical technology course. (T)

**791 Directed Study. Cr. 1-8**  
Prereq: written consent of adviser and graduate officer. Two course formats are available: (1) a seminar consisting of discussion and student presentations of particular topics in medical technology; and (2) independent study, under faculty guidance, in an area of medical technology. In order to fulfill core course requirements, each student must elect this course twice: once as a seminar, and once as an independent study. (T)

**799 Master's Essay Direction. Cr. 1-3**  
Student must present, in both written and oral forms, an original contribution to medical technology that will improve the practice of his or her chosen area of concentration. Scientific research and development of methods for improved education and management in the clinical setting are encouraged. (T)

**890 Terminal Project. Cr. 1-3**  
The student must make an original contribution to medical technology enlarging or improving the areas of administration, education or immunohematology. Written and oral project. (T)



# OCCUPATIONAL and ENVIRONMENTAL HEALTH

Office: 628 Shapero Hall; 577-1551  
Chairperson: David J.P. Bassett

## Professors

David J.P. Bassett, Andrew L. Reeves (Emeritus), Peter O. Warner

## Associate Professor

Edward J. Kerfoot

## Part-Time Faculty

Steve D. Paul

## Adjunct Faculty

Martin Charles, Richard D. Cummings, Daniel P. Gjazier, Leonard L. Jensen, Bradley Joseph, Gene X. Kortsha, Sarunas S. Mingela, Sandra E. Murphy, David Penney, Robert W. Powitz, Harold W. Rossmore, Gerald L. Sattelmeyer, Howard J. Sawyer, Jon R. Swanson, William D. Watt

## Cooperating Faculty

Merlin E. Ekstrom

## Graduate Degree

*MASTER OF SCIENCE with a major in Occupational and Environmental Health and specializations in industrial hygiene, and industrial toxicology.*

Occupational and environmental health 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 can look forward to a role of increasing importance in contemporary society. Applicants come from such diverse backgrounds as agriculture, biology, chemistry, engineering, medical technology, medicine, pharmacy, physics, pre-medicine and radiation therapy technology. Part-time evening study is offered in the occupational and environmental health program.

## Master of Science

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 14. Applicants must have a bachelor of science degree from an accredited college or university. Undergraduate course work must include the following prerequisites:

1. Two terms 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.

An applicant lacking only one of the above prerequisites may be admitted as a pre-master's non-degree student (see page 14 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 15 for additional information). Application for Post-Bachelor status is made at the Office for Undergraduate 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 is required of graduates of foreign or non-accredited institutions and applicants whose upper division honor point average is less than 2.6.

Applicants whose native language is other than English must demonstrate proficiency in English prior to beginning the program (see page 16).

Application materials may be obtained by contacting the Department of Occupational and Environmental Health, 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, 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 only to those specializing in 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 and is available only to those specializing in industrial hygiene.*

Each candidate will complete the core curriculum listed below, as well as those courses required for the specialization 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 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 pages 20-30.

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. At least eight credits in the major, in addition to the thesis or essay, must be in courses numbered 700 and above. **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 are 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 601 .....	Survey of Occupational and Environmental Health
OEH 609 .....	Seminar—Frontiers in Industrial Hygiene
OEH 651 .....	Air Sampling and Analysis
OEH 661 .....	Statistical Procedures in Occupational Health
OEH 832 .....	Industrial Toxicology for Hazardous Waste Management

### Additional Requirements for Industrial Hygiene

OEH 612 .....	Principles of Industrial Noise Control
OEH 671 .....	Principles of Industrial Ventilation
OEH 672 .....	Industrial Hygiene Control Methods
OEH 799 (for Plan B) .....	Master's Essay

### Additional Requirements for Industrial Toxicology

OEH 642 .....	Environmental Pollution
OEH 687 .....	Periodical Literature in Occupational Health
OEH 731 .....	Toxicology of Inorganic Compounds
OEH 733 .....	Toxicology of Organic Compounds
OEH 799 or OEH 899	
—Master's Essay	
—Master's Thesis Research and Direction	

*Recommended Electives (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 708 .....	Industrial Hygiene Practice
OEH 711 .....	Occupational Ergonomics
OEH 727 .....	Radiation Safety: Principles and Practice
OEH 752 .....	Optical Microscopy for Industrial Hygienists
OEH 765 .....	Chemistry of Industrial Processes
OEH 771 .....	Introduction to Epidemiology
OEH 782 .....	Regulatory Affairs in Occupational and Environmental Health
OEH 784 .....	Occupational Health Management
OEH 790 .....	Directed Study

**Advisers:** The department chairperson 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.

## Financial Aid

Sources of financial aid for graduate students are enumerated in the section on Graduate Financial Aid beginning on page 32 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)

*The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.*

### 601 Survey of Occupational and Environmental Health. Cr. 3

Material fee as indicated in *Schedule of Classes*. Fundamentals of industrial hygiene, recognition of toxic agents, evaluation procedures and engineering control methods. (F)

### 609 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)

### 612 Principles of Industrial Noise Control. Cr. 3

Prereq: OEH 601. Fundamentals of sound propagation and measurement; use of sound level meters, frequency analyzers, and audiometric devices; methods of abating sound levels. (W)

### 632 Principles of Industrial Toxicology. Cr. 4

Prereq: OEH 601. Material fee as indicated in *Schedule of Classes*. Adverse effects of chemicals on living tissue. Occupational and environmental poisonings of skin, lung, liver, kidney, blood, immune system, nervous system, reproductive system. Mutagenesis and carcinogenesis. Laboratory studies include various modes of exposure of experimental animals to toxic agents and measurements of their effects. (W)

### 642 Environmental Pollution. (CHE 555). Cr. 3

Prereq: OEH 601. Effects of atmospheric pollution on health, property, vegetation; a detailed consideration of the contaminants responsible 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)

### 651 Air Sampling and Analysis. (CHE 552). Cr. 3

Prereq: OEH 601. Material fee as indicated in *Schedule of Classes*. 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. (F)

### 661 Statistical Procedures in Occupational and Environmental Health. Cr. 3

Prereq: OEH 601. Application of statistical methods to industrial hygiene data obtained during surveys; treatment of large quantities of data obtained in epidemiological studies on in-plant personnel. (F)

### 671 Principles of Industrial Ventilation. Cr. 3

Prereq: OEH 601. Material fee as indicated in *Schedule of Classes*. 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. (F)

### 672 Industrial Hygiene Control Methods. Cr. 2

Prereq: OEH 601. Material fee as indicated in *Schedule of Classes*. 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. (W)

### 687 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)

### 708 Industrial Hygiene Practice. Cr. 2

Prereq: OEH 601. 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)

### 711 Occupational Ergonomics. Cr. 2

Ergonomic perspective of skeletal and muscular biofunctions as they are related to industrial, office or general employment situations. (Y)

### 727 Radiation Safety: Principles and Practice. Cr. 3

Material fee as indicated in *Schedule of Classes*. 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. (S)

### 731 Toxicology of Inorganic Compounds. Cr. 2

Prereq: OEH 642. Survey of metals and their compounds, industrial gases, and mineral dusts from the viewpoint of their toxicity. (B)

### 733 Toxicology of Organic Compounds. Cr. 2

Prereq: OEH 642. 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)

### 752 Optical Microscopy for Industrial Hygienists. Cr. 2

Material fee as indicated in *Schedule of Classes*. 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. (W)

### 765 Chemistry of Industrial Processes. (CHE 532). Cr. 3

Prereq: OEH 601. 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)

### 771 Introduction to Epidemiology. Cr. 2

General working knowledge of epidemiology and epidemiologic methods, the importance and role of epidemiology in industrial health and safety, and basic principles for evaluating epidemiologic studies and reports. Major emphasis on occupational and chronic disease epidemiology. (Y)

### 782 Regulatory Affairs In Occupational and Environmental Health. Cr. 1

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)

**784 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)

**790 Directed Study. Cr. 1-4**

Prereq: written 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)

**799 Master's Essay. Cr. 1-4**

Prereq: consent of adviser. (I)

**832 Industrial Toxicology. Cr. 3**

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)

**899 Master's Thesis Research and Direction.  
Cr. 1-8 (Max. 8)**

Prereq: consent of adviser. (I)



# OCCUPATIONAL THERAPY

Office: 311 Shapero Hall; 577-1435

Acting Chairperson: Suesetta McCree

## Associate Professor

Suesetta McCree

## Assistant Professors

Karmen Brown, Miriam Freeling (Emeritus), Nancy Powell

## Lecturer

Georgiana Herzberg,

## Part-Time Instructors

Linda Lutze, Kathleen Reynolds-Lynch

## Graduate Degree

### MASTER OF SCIENCE in Occupational Therapy

The Master of Science degree program in this Department is an advanced professional curriculum for the registered occupational therapist. The program is developed around the concept of individuation. Building on the student's established knowledge and skills, the significant issues and trends in the profession are identified. The student concentrates his/her professional attention on individual goals, needs, interests and skills in order to further professional growth. While integrating in-depth knowledge with practice, the student gains expertise in one or more expanded professional roles.

Faculty and community resources provide expertise for specialization in administration, education, consultancy and clinical specialties. Areas of clinical specialization include, but are not limited to: adult day care, adult foster care, community health, developmental disabilities, human development, independent living, leisure, mental health, neurodevelopment, oncology, pediatric dysfunction, physical disabilities, and work programming.

## Master of Science in Occupational Therapy

This program may be completed in as few as three semesters for those applicants able to pursue full-time study. 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 satisfy the following criteria:

1. Fulfill requirements for regular admission to the Graduate School; see page 14 (qualified admissions are not granted in occupational therapy).
2. Hold the title of Registered Occupational Therapist. An international applicant must be duly qualified as an occupational therapist in the country where he/she was educated; and
3. Have at least one year of practice experience in occupational therapy prior to starting the graduate program.

A personal interview may be required if deemed necessary to properly evaluate the applicant's admissibility.

Applicants whose native language is other than English must demonstrate proficiency in English prior to beginning the program (see page 16).

**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 700 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 pages 20-30.

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**

EER 763 .....	Fundamentals of Statistics
EER 764 .....	Fundamental Research Skills
OT 730 .....	Professional Literature
OT 770 .....	Terminal Seminar in Occupational Therapy
OT 775 .....	Professional Field Experience
OT 791 .....	Special Study

**One of the following**

OT 799 .....	Master's Essay Direction
OT 890 .....	Master's Project Direction
OT 899 .....	Master's Thesis Research and Direction

*Professional Electives (Other graduate level general electives are selected with the approval of the adviser and the College graduate officer.)*

OT 651 .....	Philosophy and Practice of Rehabilitation
OT 652 .....	Community Rehabilitation Services
OT 653 .....	Work Programming in Occupational Therapy
OT 654 .....	Practicum in Work Programming Seminar
OT 661 .....	Clinical and Experimental Biomechanics
OT 740 .....	Seminar in Current Problems and Trends in Occupational Therapy
OT 750 .....	Specialist Roles in Occupational Therapy
OT 790 .....	Directed Study

**Selection of Adviser:** The department graduate coordinator will serve as temporary adviser to the applicant during the first semester. During this semester, the applicant will be assigned an academic adviser who will sign the student's *Plan of Work* and other necessary forms. At the appropriate time, the candidate will select a faculty adviser who will direct the candidate's thesis, essay or project.

**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:** Continuance in the master's program depends upon satisfactory progress as determined by the adviser, the department graduate coordinator, 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 graduate program coordinator, and the College Graduate Officer before registering again.

**Certificates:** Candidates may concurrently earn Graduate Certificates in Gerontology from the Institute of Gerontology (see page 39) or the Developmental Disabilities Institute (see page 37).

**Financial Aid**

Sources of financial aid for graduate students are enumerated in the section on *Graduate Financial Aid* beginning on page 32 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)

The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.

### 651 Philosophy and Practice of Rehabilitation. Cr. 4

Prereq: completion of all professional courses except O T 498, 499; consent of instructor. Introduction to rehabilitation for selected students who elect a special unit in work programming. History, organization, elements of vocational rehabilitation in Michigan. (W)

### 661 Clinical and Experimental Biomechanics. (P T 504) (M E 661). Cr. 4

Prereq: consent of instructor. Interdisciplinary course: quantitative and qualitative assessment of human motion and the analysis of human performance; normal and abnormal movement, motion problems and injuries, design and utilization of adaptive equipment. (Y)

### 730 Professional Literature. (M T 730). Cr. 3

Prereq: consent of adviser. Analysis and appraisal of current occupational therapy and related professional literature. Overall approach to research reporting. (F)

### 740 Seminar in Current Problems and Trends in Occupational Therapy. Cr. 2–3(Max. 8)

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)

### 750 Specialist Roles in Occupational Therapy. Cr. 2–3(Max. 8)

Prereq: consent of adviser. Philosophy, procedures and skills of the occupational therapy specialist. Situations and problems encountered. (I)

### 751 (M T 709) 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)

### 770 Terminal Seminar in Occupational Therapy. Cr. 1

Prereq: O T 730, EER 763, EER 764 or equiv. Refinement of research techniques in relation to effective development of study for master's thesis, essay or project. (W)

### 775 Professional Field Experience. Cr. 1–4

Prereq: consent of adviser; prereq. or coreq: O T 770. Offered for S and U grades only. Supervised placement in area of specialization. (T)

### 790 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)

### 791 Special Study. Cr. 1

Coreq: O T 799, 890 or 899. (Y)

### 799 Master's Essay Direction. Cr. 1–2(2 req.)

Prereq: O T 770 and consent of adviser. (T)

### 890 Master's Project Direction. Cr. 1–5(5 req.)

Prereq: O T 770 and consent of adviser. (T)

### 899 Master's Thesis Research and Direction. Cr. 1–8(8 req.)

Prereq: O T 770 and consent of adviser. (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, and the 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, unemployment, and those with emotional disturbances, or physical and/or developmental impairments. 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 includes concentrations in administration and community services; family, children, and youth services; health care services; mental health services; and occupational social work. A lower division course is available and 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 each month 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 Program

**MASTER OF SOCIAL WORK**

**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 Academic Services Officer at the School of Social Work.

## SCHOOL OF SOCIAL WORK DIRECTORY

Dean . . . . . 210 Thompson Home; Telephone: 577-4400  
FAX: 577-6555

Associate Dean . . . . . 224 Thompson Home; Telephone: 577-4404  
FAX: 577-8770

General Information . . . . . 135 Thompson Home; Telephone: 577-4409

Admissions and Student Services  
135 Thompson Home; Telephone: 577-4409

Bachelor of Social Work Program Coordinator  
223 Thompson Home; Telephone: 577-4433

Master of Social Work Program Coordinator  
227 Thompson Home; Telephone: 577-4408

Field Education Coordinator  
117 Thompson Home; Telephone: 577-4479

Recruitment of Minority Students  
135 Thompson Home; Telephone: 577-4409

Student Organization  
20 Thompson Home; Telephone: 577-1639

National Association of Black Social Work Students  
20 Thompson Home; Telephone: 577-1639

Trabajadores de la Raza Estudiantil (T.R.E.)  
20 Thompson Home; Telephone: 577-1639

Mailing address for all offices: School of Social Work, Thompson Home, Wayne State University, Detroit, Michigan 48202.



# FACULTY and ADMINISTRATION

*Dean:* Leon W. Chestang  
*Associate Dean:* Phyllis I. Vroom  
*Director of Admissions:* Cecille Y. Dumbrigue  
*Academic Services Officer:* Vickie L. Radoye  
*Administrative Officer:* Edrene R. Teahan  
*Accounting Assistant:* Marilyn Jackson

## *Professors*

Creigs C. Beverly, Leon W. Chestang, Kurt Spitzer

## *Associate Professors*

Arthur E. Antusdel, Eddie Davis, Susan W. Downs, Alison Favorini, Theodore Goldberg, Carl Hartman, G. Kay Hoffman, Ronald L. Jirovec, Alice E. Lamont, Thomas P. Melican, Carol Mowbray, David P. Moxley, Melvyn C. Raider, Sue M. Smock, Mavis M. Spencer, Phyllis I. Vroom

## *Assistant Professors*

Anita M. Gander, Sharen K. Gamer (Clinical), Christine Hyduk, Carolyn Pryor, Hartford Smith, Jr., Shirley Thrasher, James Tripp

## *Instructors*

Robert Allen, Marilyn H. Spurlock

## *Lecturers*

Margaret O. Brunhofer, Laura Daniel, Lois Garriott, Sally Jo Large, Daphna Oyserman

## *Emeriti Professors*

Sidney Dillick, Joseph P. Hourihan, Charles N. Lebeaux, Leon Lucas, Maryann Mahaffey, Betty Rusnack, Betty Welsh, David Wineman

## *Emeriti Associate Professors*

Helen Francis, Edna S. Harrison, Evangeline Sheibley Hyett, Aaron Krasner, Edna P. Miller, Elizabeth J. Phillips, Lois L. Quig, Marian I. Reavey, Sandy G. Reid

## *Adjunct Faculty*

C. Patrick Babcock, Paul A. Koonter, Thomas D. Watkins Jr., 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. 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.

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 are enrolled in September. Applications and all supporting materials for the full-time or part-time program beginning in September must be submitted by **March 31**. Applications received after that date cannot be guaranteed processing. Applications and all supporting materials for admission with advanced standing must be submitted by **February 28**. 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 for Graduate Admissions, Wayne State University, the *Application for Graduate Admission*; (2) submit to the Office for Graduate 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. The responsibility for deciding whether a student shall or shall not be admitted rests with the School.

**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 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 on an exceptional basis 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 February 28. 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 707 (Interpersonal Concentrations) or S W 720 (Administration and Community Services Concentration), S W 750, and S W 798. Students must complete this summer curriculum before enrolling in courses in the advanced curriculum.

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.

## 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 seven graduate credits 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.

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 residence 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 programs 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. Students

who withdraw from any degree program permanently or temporarily, for whatever reason, in order to terminate in good standing, must formalize their withdrawal with the Director of Admissions. A copy of the procedure for withdrawal may be obtained from the School's Office of Admissions and Student Services.

## 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.

## 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 for Graduate 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 for Graduate 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 20-30 and 383, respectively. The program includes a core curriculum at the first level, and at the second level, one of five concentrations: Administration and Community Services; Family, Children and Youth Services; Health Care Services; Mental Health Services; and Occupational Social Work. The core curriculum provides the foundation for the advanced curriculum.

## 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.

	<i>credits</i>
S W 704—Methods of Social Work Practice I .....	2
S W 705—Methods of Social Work Practice II .....	4
S W 706—Laboratory in Methods of Social Work Practice .....	1
S W 756—Human Behavior in the Social Environment I .....	3
S W 766—Human Behavior in the Social Environment II .....	2
S W 772—Introduction to Social Welfare in the United States .....	3
S W 782—Research Methods in Social Work I .....	2
S W 783—Research Methods in Social Work II .....	3
S W 798—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 (Methods/Concentrations)

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.

	<i>credits</i>
Advanced Practice Methods courses <sup>1</sup> .....	5
Human Behavior and Social Environment course (concentration specific) .....	2
Social Welfare Policy Analysis and Formulation course (concentration specific) .....	3
S W 881—Research Seminar (concentration specific) <sup>2</sup> .....	3
S W 798—Field Work for Social Workers (concentration specific) .....	10
Electives .....	7
Total: 30	

Students must meet the requirements for a concentration by: (a) satisfactory completion of a specific concentration course in two of the three areas of: human behavior and the social environment, social welfare organization and policy services, and research; (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 five concentrations:

**Administration and Community** focuses on interventions in social agencies, institutions, and neighborhoods of the community and society to enhance the quality of life. Students in Administration will be placed in a special project, program, or division of a social agency selected by the School where they will assume administrative responsibilities. Community 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 and political internships.

**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.

<sup>1</sup> Students who elect the Administration and Community concentration will be required to take an additional two-credit course each semester which will reduce credits for electives from seven to three.

<sup>2</sup> Students may elect a four-credit group research project (S W 896) or a six-credit individual thesis (S W 899) in lieu of the three-credit Research Seminar.

**Health Care Services** include interpersonal services to people as they cope with illness, disease, disability, trauma, or substance abuse. 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, and the chronicity of institutionalization requiring after-care services. 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 and mental health planning agencies.

**Occupational Social Work** is a field of practice in which social workers attend to the human and social needs of the work community by designing and implementing programs, services and interventions to ensure healthier individuals and environments. Employment in occupational social work includes employment assistance programs within industrial, corporate and human service settings such as hospitals or schools, as well as in contracted programs external to the workplace.

### GRADUATE CERTIFICATE PROGRAMS — INTERDISCIPLINARY

#### Child and Family Studies, Developmental Disabilities, Gerontology, Infant Mental Health

Students in the program leading to the Master of Social Work degree may pursue certification in four areas of specialization: 1) child and family studies, offered in cooperation with the Merrill-Palmer 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, pages 38 - 40.

### — 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 innovation will also be explored. Historically, social workers have worked with families affected by social injustice and adverse conditions; this is a legacy of the profession. The problems these families encounter today are greater than ever, 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 14) and the School of Social Work (see page 377). 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. For students concurrently enrolled in the degree and certificate programs, only nine of the sixteen 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 sixteen 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 20-30 and 383, respectively.

The required certificate curriculum consists of the following courses:

	<i>credits</i>
<b>Theory:</b>	
S W 854 — Family Theory .....	2
S W 855 — Social Functioning: Human Sexuality .....	2
S W 878 — Social Work with Families in a Multi-Ethnic, Multi-Cultural Society .....	3
<b>Practice:</b>	
S W 861 — Advanced Interpersonal Practice with Families .....	2
S W 862 — Advanced Interpersonal Practice in Marital Therapy .....	2
S W 879 — Social Work Practice with Diverse Family Structures .....	3
<b>Ethics:</b>	
S W 871 — Seminar on the Profession of Social Work .....	2
Total: 16	



## Graduate Courses (S W)

The following courses, numbered 500-999, are offered for graduate credit. Courses numbered 500-699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090-499). Courses in the following list numbered 500-699 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 463.

### 572 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)

### 588 (SOC 588) Family Violence: Intervention. Cr. 1

Prereq. or coreq: SOC 587. Open to PACT students; others by consent of instructor. Application of theory and intervention techniques in the family experience of maltreatment. (Y)

### 644 (SOC 644) Urban Family Intervention. Cr. 1

Prereq. or coreq: SOC 643. 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)

### 646 (SOC 646) 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)

### 651 Social Work and the Black Community. (AFS 651). 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)

### 654 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. (Y)

### 655 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)

### 672 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. (Y)

### 691 Special Topics in Social Work. Cr. 2-4

Topics of current interest to be announced in *Schedule of Classes*. (Y)

### 701 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)

### 704 Methods of Social Work Practice I. Cr. 2

Coreq: S W 706 and 798. Basic principles of social work practice with emphasis on the initial phases of service, including exposure to the range of practice theories and interventions used by social workers. (F)

- 705 Methods of Social Work Practice II. Cr. 4**  
Prereq: S W 704 and 706; coreq: 798. 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)
- 706 Laboratory in Methods of Social Work Practice. Cr. 1**  
Coreq: S W 704 and 798. Analysis of student experiences in the practicum with individuals, families, and groups in their environments; use of simulations, videotapes, role-playing, and discussions. (F)
- 707 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)
- 720 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)
- 744 Policy and Research for Community Integration of Persons with Disabilities. (NUR 744). Cr. 4**  
Prereq: admission to M.S.W. program, S W 782, 783, consent of instructor. Application of research methods to improve policies and services that enhance community integration and quality of life of persons with disabilities. (I)
- 750 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)
- 751 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)
- 756 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)
- 758 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)
- 759 Complex Organizations. Cr. 2**  
Examination of organization theory and conceptual models pertinent to the analysis of social service organizations. (F)
- 766 Human Behavior in the Social Environment II. Cr. 2**  
Prereq: S W 756. 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)
- 772 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)
- 782 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)
- 783 Research Methods in Social Work II. Cr. 3**  
Prereq: S W 782. 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)
- 790 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)
- 798 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)
- 807 Application of Practice Theories in Interpersonal Practice. Cr. 3**  
Prereq: S W 705 or 707; coreq: 798. Presentation and analysis of theoretical orientations guiding social work practice with individuals, families and groups. (Y)
- 816 Advanced Seminar in Clinical Interpersonal Practice. Cr. 2**  
Prereq: S W 705 or 707 or 720 or M.S.W. degree. Advanced study of relationships and therapeutic processes in interpersonal practice through the analysis of case material. (I)
- 820 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)
- 825 Application of Practice Theories with Organizations and Communities I. Cr. 3**  
Prereq: S W 705 or 720; coreq: 798 and consent of instructor. First of two advanced method courses to prepare social workers for practice in institutions and neighborhoods of the community and society. (F)
- 826 Application of Practice Theories with Organizations and Communities II. Cr. 2**  
Prereq: S W 705, 825; coreq: 798. The second of two advanced method courses to prepare social workers for practice in institutions and neighborhoods of the community and society. (W)
- 827 Planning and Financial Data Reports in Social Agencies. Cr. 2**  
Prereq: S W 705, 825; coreq: 798. Planning, goal setting, monitoring and use of financial data reports in social agencies and community organizations. (F)
- 828 Planned Change in Social Agencies and Communities. Cr. 2**  
Prereq: S W 705 or 720; coreq: 798. Examination of models, typologies and strategies of planned change in communities, institutions, organizations and society. (W)

**833 Psychosocial Assessment of Children and Youth. Cr. 3**  
Prereq: S W 783 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)

**851 Psychopathology In Children. Cr. 2**  
Prereq: S W 750 or 766. 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)

**852 Psychopathology: Psychoneurotic Reactions and Personality Disorders. Cr. 2**  
Prereq: S W 750 or 766. Psychoneurotic reactions and personality disorders in adults as background for social work assessment and intervention. (T)

**854 Family Theory. Cr. 2**  
Prereq: S W 750 or 766 or M.S.W. degree; coreq: 798. Family theory as a background for learning family diagnosis and treatment. (T)

**855 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)

**856 Social Work and the Educationally Impaired Child. Cr. 2**  
Prereq: admission to a planned program in the School of Social Work or M.S.W. degree. Work with the educationally impaired to identify and understand the nature of the impairment and the relationship and use of social work services in remediation. (Y)

**857 Families, Children and Youth: Problems in Social Functioning. Cr. 2**  
Prereq: S W 750 or 766 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)

**858 Health and Disease: Impact on Social Functioning. Cr. 2**  
Prereq: S W 750 or 766 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)

**859 Application of Behavioral Interventions in Interpersonal Practice. Cr. 2**  
Prereq: S W 807 or 825 or M.S.W. degree; coreq: 798. 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)

**860 Advanced Interpersonal Practice In Group Treatment. Cr. 2**  
Prereq: S W 807 or 825 or M.S.W. degree; coreq: 798 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)

**861 Advanced Interpersonal Practice with Families. Cr. 2**  
Prereq: S W 807 or 825 or M.S.W. degree; coreq: 798 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. (Y)

**862 Advanced Interpersonal Practice in Marital Therapy. Cr. 2**  
Prereq: S W 807 or 825 or M.S.W. degree; coreq: 798 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)

**863 Structured Interactions In Interpersonal Practice. Cr. 2**  
Prereq: S W 807 or 825 or M.S.W. degree; coreq: 798 or M.S.W. degree. Use of exercises, programs, and social simulations to promote insight and behavioral change with individuals, groups and families. (Y)

**864 Interpersonal Practice in Aging. Cr. 2**  
Prereq: S W 807 or 825 or M.S.W. degree; coreq: 798 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)

**865 Interpersonal Practice with Children. Cr. 2**  
Prereq: S W 807 or 825 or M.S.W. degree; coreq: 798 or M.S.W. degree. Practice methods and techniques with preschool and latency-age children and adolescents and their families. Communication, assessment and intervention skills explored together with family life education. (Y)

**866 Social Work Practice Methods in the Workplace. Cr. 2**  
Prereq: S W 807 or 825 or M.S.W. degree; coreq: 798 or M.S.W. degree. Application of social work interventions in the workplace designed to identify and deal with the needs of employees with work-related and/or mental health or family problems. Special problems such as substance abuse or the needs of working mothers or minorities in the workplace also addressed. (Y)

**867 Interpersonal Practice in Health Care. Cr. 2**  
Prereq: S W 807 or 825 or M.S.W. degree; coreq: 798 or M.S.W. degree. Application of a variety of social work interventions appropriate to the needs of clients and populations-at-risk in health care and the nature of health care organizational settings. (Y)

**868 Interpersonal Practice in Mental Health. Cr. 2**  
Prereq: S W 807 or 825 or M.S.W. degree; coreq: 798 or M.S.W. degree. Social work treatment methods with clients in mental health settings. Direct and indirect intervention techniques and the use of support systems. (Y)

**869 Interpersonal Practice in Substance Abuse. Cr. 2**  
Prereq: S W 807 or 825 or M.S.W. degree; coreq: 798 or M.S.W. degree. 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)

**871 Seminar on the Profession of Social Work. Cr. 2**  
Prereq: S W 705 or 707 or 720. 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)

**872 Family, Children and Youth Services: Policy Analysis and Formulation. Cr. 3**  
Prereq: S W 705 or 707 or 720. 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)

**873 Health Care Services: Policy Analysis and Formulation. Cr. 3**  
Prereq: S W 705 or 707 or 720. Components of social welfare program and policy analysis and formulation illustrated by content derived from the field of health care services. (Y)

**874 Mental Health Services: Policy Analysis and Formulation. Cr. 3**

Prereq: S W 705 or 707 or 720. Components of social welfare program and policy analysis and formulation illustrated by content derived from the field of mental health services. (Y)

**876 Occupational Social Services: Policy Analysis and Formulation. Cr. 3**

Prereq: S W 705 or 707 or 720. Components of social welfare program and policy analysis and formulation illustrated by content derived from the field of occupational social services. (Y)

**878 Social Work with Families in a Multi-Ethnic, Multi-Cultural Society. Cr. 3**

Prereq. or coreq: S W 854. 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)

**879 Social Work Practice with Diverse Family Structures. Cr. 3**

Prereq. or coreq: S W 861. Advanced application of theories and conceptual frameworks for change to social work intervention with diverse family structures. (Y)

**881 Research Seminar. Cr. 3**

Prereq: S W 783 or admission to advanced standing in School of Social Work. No credit after S W 885, C M 785 or SOC 785. Review and analysis of selected social work research studies to sharpen research utilization skills. (T)

**885 (SOC 785) Seminar in Applied Gerontology. (C M 785). 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 881. 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)

**896 Group Project Research and Direction. Cr. 1-4(4 req.)**

Prereq: S W 783 or admission to advanced standing in School of Social Work. (T)

**899 Master's Thesis Research and Direction. Cr. 1-6(6 req.)**

Prereq: S W 783 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 20. 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 procedures, and fulfilling all course and degree requirements in proper sequence with satisfactory scholarship. In case of doubt regarding any matter the student should consult the Academic Services Officer. The primary responsibility 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

All requirements for the Master of Social Work degree must be fulfilled within nine years of the date the requirements are completed.

### Attendance

Students are expected to attend all sessions of courses for which they are registered and to notify the instructor or his or her secretary prior to the class session, if possible, when the student may be absent due to illness or similar emergency.

### Field Education

All students enrolled in S W 798, 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 798, 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 him/herself, other students, or the School.

# FINANCIAL AIDS

General sources of financial aid for graduate students may be found in the section on *Graduate Financial Aid*, beginning on page 32 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 Aids 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 Aids, 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 Aids 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/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. Information and appropriate application forms may be obtained by contacting this Office. Application deadlines for scholarships is August 1 for the fall semester. 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.

*Edith N. Brehler Memorial Scholarship.* Manuscript competition. Students submit a twelve- to fifteen-page paper on social work values and practice to be judged by a panel of faculty and students.

*Patricia L. Dillick Memorial Scholarships.* Merit scholarships of variable amount, for graduate students with a high academic achievement record.

*Fred and Freda Gentsch Scholarship.* Award of variable amount, based on the basis of merit and financial need.

*Alice Cox Roberts Memorial Scholarship.* Award of variable amount, made on the basis of merit and financial need to Black students in the advanced curriculum.

*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.

*Mary Turner Scholarship.* Award of variable amount, made to female students on the basis of academic achievement and financial need.

*Whitney M. Young, Jr., Memorial Scholarships.* Awarded by the Urban League to minority students on the basis of academic achievement and financial need.

*Ella Zwerdling Memorial Fund.* Award of \$200-\$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 Student Social Workers are among student activities.

## National Association of Black Social Work Students

The National Association of Black Social Work Students (NABSWS) is the Wayne State University School of Social Work student chapter of the National Association of Black Social Workers. This student association involves itself in educational, research and community service activities on a year round basis. NABSWS assists black students in making the adjustment to the School of Social Work and provides students with supportive educational services. NABSWS 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.

## Trabajadores de la Raza Estudiantil (T.R.E.)

*Trabajadores de la Raza Estudiantil* means Student Workers of the Race. T.R.E. is the organization of students at the School of Social Work who are interested in Hispanic affairs. The objectives of T.R.E. are to increase the number of Hispanic students and faculty in the School, to integrate the Hispanic experience into the School's program and academic settings, to link the Hispanic community with the School and to provide an Hispanic-related student forum in the University community. Membership in T.R.E. is open to Hispanic and non-Hispanic students in the School of Social Work.

## Alumni Association

The Alumni Association serves to enhance School and professional identification. To this end, the Association organizes promotional and interpretative activities, sponsors forums, institutes and workshops which 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. Through the Association's newsletter graduates are informed about one another and the School of Social Work.



# FIELD EDUCATION

The following agencies and persons have worked with members of the Faculty in field instruction during the academic year 1990-1991:

ACCESS: Nancy Adadow-Gray

ADULT WELL BEING SERVICES: Joanne Bonds, John Kosik

AGAPE HOUSE: Rev. M. Nyathi

AIDS CARE CONNECTION: H.C. Millbourne

AIDS CONSORTIUM OF SOUTHEASTERN MICHIGAN: Lydia Meyers

ALTERNATIVES FOR GIRLS: Amy Goode

AURORA HOSPITAL: Sharon Blum, Gloria Hatchet, Rita Imathieu, Elizabeth Smith

BARAT HUMAN SERVICES: Jahmal Alghali

BEAUMONT HOSPITAL-ROYAL OAK: Betty Lu Spurgeon

BEAUMONT HOSPITAL-TROY: Anne Carey, Robert Dale

BEAUMONT REHABILITATION AND HEALTH CENTER: Sharon Kelly

BIO-MEDICAL APPLICATION OF DETROIT: Barbara Hall

BLACK FAMILY DEVELOPMENT: Diane McMillan

BON SECOUR HOSPITAL: Joanne Dennison

BOTSFORD HOSPITAL: Aldorsha Skillon

BOYSVILLE OF MICHIGAN: Carole Hane, Ed Overstreet

CAMP OAKLAND: Cassandra Bowers

CATHOLIC SOCIAL SERVICES OF FLINT: Yvonne Butler

CATHOLIC SOCIAL SERVICES OF MACOMB COUNTY: Robin Cronin, Suzanne White

CATHOLIC SOCIAL SERVICES OF OAKLAND COUNTY: Judith McManus, Kathy Phillipi

CATHOLIC SOCIAL SERVICES OF ST. CLAIR COUNTY: Audrey Georges

CATHOLIC SOCIAL SERVICES OF WAYNE COUNTY: LaVerne Braddock, Tracey Cox, Sondra Forest, Delores Gaydos, Charlie Geiger, Carol Quilliam, Robert Wickenheiser, Dorothy Zynda

CENTER FOR PERSONAL GROWTH: Lois Garritt

CHILD DEVELOPMENT CENTER: Betty Daniels

CHILDREN'S AID SOCIETY: Vergenia Austin, Deana D'Arpin, Phyllis Simpson

CHILDREN'S CENTER OF WAYNE COUNTY: Ted Lewis, Carol Murray

CHILDREN'S HOME OF DETROIT: Martha Maxwell

CHILDREN'S HOSPITAL OF MICHIGAN: Denise Cain, Marie Gilnet, Amy Masinick, Mary Mueller, Karel O'Brien, Rebecca Tochet

THE CHRIST CHILD HOUSE: Julia Winston  
CLARKSTON SCHOOLS: Jim Butzine

CLINTON VALLEY CENTER: Stephen Lanterman

COMMON GROUND: Nancy Serlin

COMMUNITY CARE SERVICES: Larry Graban, John Roxberry, John Schaupner, Sally Schwadron

COMMUNITY CASE MANAGEMENT SERVICES, INC.: Cecelia Lilliston

COMMUNITY SERVICES OF OAKLAND: John Erich

COTTAGE HOSPITAL: Mira Eiges

COTTAGE HOSPITAL -- HOSPICE: Lois Quig

DEARBORN HEIGHTS HUMAN RESOURCE CENTER: Gladys Klein

DETROIT EAST COMMUNITY MENTAL HEALTH: Doris Sterrett

DETROIT HEALTH DEPARTMENT: William Allison, Janie Boyd, Gary Cook, Leona Glover, Arietha Kerns, Matthew Lynn, Patricia Soderberg

DETROIT PSYCHIATRIC INSTITUTE: Barbara Pettibone, Elliot Rosen

DETROIT PUBLIC SCHOOLS: Ethel Burgess, Mauritta Gardner, Walter Terrell

DETROIT RECEIVING HOSPITAL: Sandra Bohanon, Barbara Chapman, Carl Currie, Cherie Dye, Lee Garvin, Linda Imel, Ken Kish, Paul Koonter, Jody McGuire, Ellen Risken, Al Webb

DETROIT URBAN LEAGUE: Cassandra Nelson

DETROIT -- WAYNE COUNTY COMMUNITY MENTAL HEALTH BOARD: Coleen Conklin, Myrna Salvador

DEVELOPMENT CENTERS: Lynn Ernst, Debra Kade, Steven S. Nims

DIVERSIFIED YOUTH PROGRAMS: Carl Jones, Angela Olivera, V. Sanders, Alice Thompson

DON BOSCO HALL: Charles Small, Jo-Anne Woodard

DOWNRIVER GUIDANCE CLINIC: Peggy Dufault, Barbara Niewek, Shirley Yopp-Skelton

DOWNTOWN SENIOR CITIZEN'S CENTER: Barbara Starling

EAP, INC.: James Keener

EASTWOOD COMMUNITY CLINICS: Tammy Glenn, Millie Murdock, Peter Pollack, Doug Snow

ENNIS CENTER FOR CHILDREN: Jackie Conn

FAIRLANE COMMUNITY MENTAL HEALTH CENTER: Nancy Burke, Ashe Nikolich

FAMILY COUNSELING AND MEDIATION: Mary Gibson, Ed Nowakowski

FAMILY SERVICE OF DETROIT AND WAYNE COUNTY: Jodi Lampton, Ramona Smith, Susan Truckley

FAMILY SERVICE OF WINDSOR: Edwin Clarke

FARMINGTON AREA ADVISORY COUNCIL, INC.: Kathy Schultz

FEDERATION OF GIRLS' HOMES: Delores May  
FITZGERALD SCHOOLS: Carl Catanese

FRIENDS ALLIANCE: Roger Stutesman

GENERAL DYNAMICS – EAP: Carol Sheffield

THE HARBOR/CROSSWELL: Sally Currie

HARPER HOSPITAL: Debra McNamara, Elaine Rosenblat

HARPER-GRACE HOSPITAL: Donna Basala, Martha Martin, Geri Rhoads

HARPER WOODS SCHOOLS: Elizabeth Parravano

HAVEN: Jill Cole, Nancy Schumacher

HAVENWYCK HOSPITAL: Mary Kramer

HAWTHORNE CENTER: Ellen Laitinen, Lynn Freeland, Hattie Vanner

HAZEL PARK SCHOOLS: Judy Berger, Lynn Sigurdson

HEALTH MANAGEMENT SYSTEMS: Arlene Darrick

HENRY FORD HOSPITAL: Margaret Dimond, Karen Ruwoldt

HENRY FORD HOSPITAL – EAP: Yvonne McGregor

HENRY FORD HOSPITAL – FAIRLANE: Kathleen Ransome

HENRY FORD HOSPITAL – CANTON: Joe Horak

HERITAGE HOSPITAL: Mark Russell

HOLY CROSS HOSPITAL: David Clark, Mary Lou Healy, Marilyn Intravaia, Mary Ann Klipp

HOPE, UNITY AND GROWTH (HUG): Maisha Kenyatta

HOLY TRINITY SOCIAL SERVICES: Sister Annette Zipple

HOSPICE OF SOUTHEASTERN MICHIGAN: Linda Simpson

I HAVE A DREAM FOUNDATION: Hartford Smith

INTERNATIONAL INSTITUTE: Helen Charney

JEWISH FAMILY SERVICE: Jan Bayer, Annette Bechek, Marilyn Herzberg, Sandy Hyman, Ann Mintzer, Marcie Schneider

JEWISH HOME FOR THE AGED: Jill Mehr, Louise Pilchik

JUDSON CENTER: Jolee Bateman, Dorothy Chodynecki, Ann Davies, Rosemary Insley, Jean Nieman

LA CASA/VIDA LATINA: Osvaldo Rivera

LAFAYETTE CLINIC: David Castine, Arveta Grady-Fletcher, Lacie Jones, Robert Wills

LAPEER AREA HOSPICE: Beth Riseman

LAPEER REGIONAL HOSPITAL: Fred Schade

LATINO FAMILY SERVICES: Beth Singer

LDS SOCIAL SERVICES OF MICHIGAN: Leland Hardy

LOURDES NURSING HOME: Carol Landry

LUTHERAN CHILD AND FAMILY SERVICES OF MICHIGAN: Kirk Bradford, Bonita Cobb, Sue Henderson, Amy Miller  
LUTHERAN SOCIAL SERVICES OF MICHIGAN: V. Gail Simpson

MACOMB COUNTY COMMUNITY MENTAL HEALTH SERVICES: Brian Ceccon, Susan Deter, George Stouter

MACOMB COUNTY DEPARTMENT OF SENIOR CITIZEN SERVICES: Joan Mayer, Blythe VanderBeck

MACOMB COUNTY PROSECUTOR'S OFFICE: Jane Steeh

MACOMB FAMILY SERVICES: Margaret Hader, Paul Tulikangas

MACOMB INTERMEDIATE SCHOOLS: Nadine Reyher-Lovell

MADISON COMMUNITY HOSPITAL: Barbara Spivack

MARINER'S INN: Wendell Harris

MICHIGAN HEALTH CENTER HOSPITAL: June Fenton

MUMFORD HIGH SCHOOL/WSU PROJECT: Creigs Beverly

NEIGHBORHOOD SERVICES ORGANIZATION – CONCORD: Gary Dymek

NEIGHBORHOOD SERVICES ORGANIZATION – GERIATRIC SCREENING AND OUTPATIENT SERVICES: Louise Beutell, Mary Clark, Sharon Dailey, Linda Nagrant, Alberta Rayford, Jean Teschner

NEIGHBORHOOD SERVICE ORGANIZATION – GREATER LIFE CONSULTATION CENTER: Yola Akpan, Wilma Dunlap

NEW CENTER COMMUNITY MENTAL HEALTH SERVICES: Dolores Wilson

NEW DETROIT, INC.: Paul Hubbard

NIMH AIDS EDUCATION PROGRAM: Barbara Simons

NORTH DETROIT GENERAL HOSPITAL: Dolores Lockhart, Mary Smith

NORTHEAST GUIDANCE CENTER: Maurice Adams, Carla Cortright, Kathy Scott, Elaine Thomas

NORTHERN HIGH SCHOOL/WSU PROJECT: Marilyn Spurlock

NORTHVILLE REGIONAL PSYCHIATRIC HOSPITAL: Sally Borden, Jean Cava, Debra Chandler, Kathleen Gluck, Pat Green, Mary Guidobono, Yvonne Harbin, Carolyn James, John Kenner, Charles Mekar, Michael Mogan, June Reid, Marian Sernick, Lona Sweitzer

NORTHWESTERN GUIDANCE CLINIC: Marianne Cook

OAKLAND COUNTY CHILDREN'S VILLAGE: Clarence Craft, Paul Dube, Judith Overall

OAKLAND COUNTY COMMUNITY MENTAL HEALTH: Ed Keener

OAKLAND COUNTY COMMUNITY MENTAL HEALTH CLINIC, SOUTHEAST: Jerome Avrushin

OAKLAND COUNTY COMMUNITY MENTAL HEALTH CLINIC, SOUTHWEST: Nancy Gaydos

OAKLAND FAMILY SERVICES: Mary Jane Clark, Betty Hitchcock, Donna Lackie, Mary Neumann, John Newman, Jeanne Sadler, Cathy Witt

OAK PARK SCHOOL DISTRICT: Diane Sheikh

OAKWOOD HOSPITAL: Kathy Goodwin, Debra Nesbit, Therese Pelchat, Shirley Zimmer

OCCUPATIONAL HEALTH CENTERS OF AMERICA, INC.: Michael Hamlin

ORCHARDS CHILDREN'S SERVICES: Trudy Fortino

OXFORD INSTITUTE: Vivi Germain, Barry McIntosh, Penelope Sakis

PONTIAC GENERAL HOSPITAL: Dr. Pat Armstrong, Audley Bailey, Louise Chase, June Clapham, Jeff England, Jan Gatz, Leslie Schrott, Hardish Varma, Ed West

PONTIAC SCHOOL DISTRICT: Adela Camerona, Regina Kuper, John Lusk, Idamae Tompkins

PLYMOUTH FAMILY SERVICE: David Breedin

RAPE COUNSELING CENTER: Althea Grant

REHABILITATION INSTITUTE: Patrick Donnellon

SALVATION ARMY HARBOR LIGHT CENTER: Michael Wolf-Branigin

SHAR HOUSE: Ann Benion

SINAI HOSPITAL: Dr. Charles Burch, Rose Hirsch, Sue Ochman-Frank

SOSAD: Rosemary McGhee

SOUTHFIELD-LATHRUP COUNSELING SERVICES: V. Gail Simpson, Karen Weiner

SOUTHFIELD PUBLIC SCHOOLS: Karen Weiner

SOUTHFIELD REHABILITATION HOSPITAL: Karen Neuman

SOUTHGATE COMMUNITY SCHOOLS: Terry Riddle

SOUTHGATE REGIONAL CENTER: Diane Coates

SOUTHWEST DETROIT COMMUNITY MENTAL HEALTH SERVICES: Thomas Stark, Graciela Villalobos

ST. CLAIR COUNTY DEPARTMENT OF SOCIAL SERVICES: Ivan Benedict

ST. JOHN'S HOSPITAL AND MEDICAL CENTER: Marion McCarthy, Joan Shirilla

ST. JOSEPH MERCY HOSPITAL - FOX CENTER: Diane Wittl

TEEN RANCH FOSTER CARE SERVICES: Betty Brown

VETERANS ADMINISTRATION MEDICAL CENTER - ALLEN PARK: Peggy Langren-Asher, Aaron Ruben

VETERANS ADMINISTRATION MEDICAL CENTER - ANN ARBOR: Shelly Wagner

VISTA MARIA: Candice Kidd

VISITING NURSE HOME HEALTH SERVICES: Barbara Rose

WALTER P. REUTHER PSYCHIATRIC HOSPITAL: Sylvia Kinzer

WAYNE COUNTY DEPARTMENT OF SOCIAL SERVICES: Barbara Friedl

WAYNE COUNTY INTERMEDIATE SCHOOLS TEENAGE PARENT ALTERNATIVE SCHOOL PROGRAM: Odevia Brown

WAYNE STATE UNIVERSITY PSYCHOLOGY CLINIC: Shirley Berman

WEDGEWOOD ACRES CHRISTIAN YOUTH HOMES: Art Opperwall

WELLNESS NETWORKS: Barbara Spivak

WESTLAND COUNSELING: Doreen Tame

WESTLAND MEDICAL CENTER: Julie Chappel

WESTWOOD SCHOOL DISTRICT: Marsha Allen, Kathy Fellabaum, Becky Naghski

YOUTH LIVING CENTERS: Susan Zakupski

YWCA OF METRO DETROIT: Marlene Harper



**COLLEGE OF URBAN,  
LABOR, AND METROPOLITAN AFFAIRS**

**DEAN: Sue Marx Smock**

# Foreword

The College of Urban, Labor, and Metropolitan Affairs was approved by the Board of Governors, effective Fall Term 1987. The primary mission of the new 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 Department of Geography and Urban Planning; the interdisciplinary Master of Arts Program in Industrial Relations (MAIR); the Labor Studies Center; the Center for Urban Studies; the Archives of Labor and Urban Affairs; the University Professors for Labor Studies; the Race Relations Institute; and the Detroit Orientation Institute.

## Graduate Degrees

*MASTER OF ARTS with a Major in Geography*

*MASTER OF ARTS in Industrial Relations*

*MASTER OF URBAN PLANNING*

## 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.

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 one-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 one-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.

## Archives of Labor and Urban Affairs

Walter P. Reuther Library; 577-4024

The Archives of Labor and Urban Affairs was established in 1960 to collect, preserve and make available to qualified researchers records of the American labor movement and related social, economic and political reform groups. The Archives has since become the official

depository for the inactive files of the Congress of Industrial Organizations, the United Auto Workers, the American Federation of Teachers, The Newspaper Guild, the United Farm Workers, the American Federation of State, County and Municipal Employees, the Airline Pilots Association, the Association of Flight Attendants, the Industrial Workers of the World and many state and local labor organizations. Files have also been gathered from such groups as the Citizens' Crusade Against Poverty, the American Civil Liberties Union, the National Association for the Advancement of Colored People, the United Community Services of Detroit, and New Detroit, Inc. Many individuals who played leading roles in labor and urban affairs have also placed their papers in the Archives. Correspondence, minutes, clippings, notes, newspapers and other written records, as well as films, tapes and photographs, are available for research.

## Center for Urban Studies

3049 Faculty/Administration Building; 577-2208

The Center for Urban Studies is an interdisciplinary research, training and service organization focusing on contemporary issues. The Center's major activities are: to perform research and evaluation in a number of areas related to urban issues, and to act as a resource agency for University and community groups. The Center maintains a core staff, but is structured to interact with students, faculty and other University staff. In addition, the Center comprises seven ongoing programs: (1) the Urban Families Program, composed of students and faculty from University departments, outside agencies and other interested persons working together on issues for and about young children; (2) the Michigan Metropolitan Information Center (MIMIC), a regional source of U.S. census data; (3) the Urban Linkage Program, an organization which links University resources with City of Detroit departments to solve urban problems; (4) Survey and Evaluation Services, specializing in the implementation of research projects, from sampling and questionnaire development through data analysis; (5) a Technical Resources Program, part of the Technology Transfer Network (TTN), jointly funded by the Michigan Department of Commerce and Wayne State University, providing Michigan business firms and entrepreneurs with access to technical resources and assistance; and (6) the Urban Transportation Institute, conducting basic and applied research on issues related to urban transportation; and (7) the Economic Development Program, providing research, technical assistance and strategic planning to communities.

The Center also offers student internships, graduate assistantships, and experienced consultation on research projects. The Center features variety and flexibility in its encouragement of cooperative efforts in urban studies.

## Labor Studies Center

3178 Faculty/Administration Building; 577-2191

Established in 1957, the Labor Studies Center has a mission 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.

# 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 14.

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.

## 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 20-30) 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*. 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. 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.

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.

## 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 700 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 799, 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 within a reasonable time after the student has graduated.

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, 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 899 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.

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, they must file outlines and record forms. Master's candidates must prepare three copies which, after receiving departmental approval, will be forwarded to the College Graduate Office.

## DIRECTORY OF THE COLLEGE

### *Office of the Dean*

Dean: Sue Marx Smock  
Associate Dean: Harold Wolman  
Assistant Dean: Carlton Maley  
3198 Faculty/Administration Building ..... 577-5071

### *Archives of Labor and Urban Affairs*

Director: Les Hough  
Associate Director: Warner Pflug  
231 Reuther Library ..... 577-4003

### *Center for Chicano-Boricua Studies*

Director: Jose Cuello  
3324 Faculty/Administration Building ..... 577-4378

### *Center for Urban Studies*

Director: Larry Ledebur  
Business Manager: Mary Clayton  
3043 Faculty/Administration Building ..... 577-2208

### *Geography and Urban Planning*

Chairperson: Robert M. Boyle  
225 State Hall ..... 577-2701

### *Labor Studies Center*

Director: Hal Stack  
3168 Faculty/Administration Building ..... 577-2191

### *Race Relations Institute*

3198 Faculty/Administration Building ..... 577-5071

### *Detroit Orientation Institute*

3198 Faculty/Administration Building ..... 577-5071

### *Industrial Relations*

Director: Joseph Stulberg  
Assistant to the Director: Lorin M. Martin  
1262 Faculty/Administration Building ..... 577-4380

### *University Professors of Labor Studies*

Irving Bluestone  
Douglas Fraser  
253 Reuther Library ..... 577-5196

# GEOGRAPHY and URBAN PLANNING

*Office:* 225 State Hall; 577-2701

*Chairperson:* Robert M. Boyle

## *Professors*

Robert M. Boyle, Fred E. Dohrs (Emeritus), Robert J. Goodman (Emeritus), George J. Honzatko, Robert Sinclair

## *Associate Professors*

Eugene D. Perle, Gary Sands, Robert D. Swartz, Bryan Thompson

## *Adjunct Faculty*

L. Zimmerman

## 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. A voluntary internship program permits a limited number of credits for on-the-job experience.

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.

## 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 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 14. 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. Three credits in the *Plan of Work* must include GEG 780.

**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 780 and 790. 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 20–30 and 391, respectively.

## Master of Urban Planning

**Admission** to this program is contingent upon admission to the Graduate School, for requirements, see page 14.

**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.*

Specific requirements for the degree will be determined in the case of each applicant after the completion of approximately twelve credits in course work. At that time, students will develop a *Plan of Work* in consultation with a permanent adviser. In general, no less than the two-year program stipulated by the American Planning Association will be required for the degree. Prior completion of courses equivalent to the requirements may form a basis for reducing credits in any individual program. 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 a thesis or an essay.

Academic work will begin with courses at the 500 or 600 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 700 or 800 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 391, 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 32 of this bulletin.)

## Internships

Students undertaking a master's degree in geography may participate in an internship program: approximately fifteen to eighteen hours per week of work (four credits), for which Students must register in GEG 660. For details, contact the department chairperson.

# GRADUATE COURSES

*The following courses, numbered 500–999, are offered for graduate credit. Courses numbered 500–699 which are offered for undergraduate credit only may be found in the undergraduate bulletin, as well as all other undergraduate courses (numbered 090–499). Courses in the following list numbered 500–699 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 463.*

## GEOGRAPHY (GEG)

### 565 Metropolitan Detroit. (GPH 565). 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)

### 570 Urban Canada. (GPH 570). 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)

### 575 Social and Economic Geography of the United States and Canada. (GPH 575). 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)

### 581 Locational Issues in Hazardous Waste Management. (GPH 581). Cr. 3

Analyses of spatial aspects of hazardous waste sites; corporate and public considerations and reactions; regulatory impacts. (B)

### 613 Advanced Urban Geography. (U P 601)(GPH 613). 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)

### 615 Internal Structure of the City. (U P 542)(GPH 615). 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)

### 624 Industrial Geography. (U P 552)(GPH 624). Cr. 4

Location of industry in theory and practice. Locational analysis of selected industries and selected manufacturing regions. Locational practices of multinational corporations, global transformation of manufacturing, industrial restructuring, industrial decline. Industries and services in a post-industrial economy. Industrial location and urban development. (B)

### 628 Marketing Geography. (U P 562)(GPH 628). 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)

### 642 (U P 632) Quantitative Techniques I. (GPH 642). Cr. 4

Statistical inference with emphasis on applications including control tendency, dispersion, hypothesis testing, correlation and regression. (Y)

**651 (U P 651) Urban and Regional Systems. (GPH 651). 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)

**652 Independent Field Study. (U S 605)(GPH 652). Cr. 2-4**

Prereq: consent of instructor; for Urban Studies students: U S 401 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 use and evaluation. Written reports. (Y)

**660 Internship in Applied Geography. (GPH 660). Cr. 4**

Prereq: 15 credits in geography; consent of instructor. Offered for S and U grades only. On-the-job training, mostly in applied aspects of geography (retail location analysis, land use studies); some internships compensated. Internships are usually for one academic semester. (Y)

**665 Computer Assisted Mapping. (GPH 665)(U P 672). Cr. 4**

Science of computer assisted mapping and hands-on computer assisted map production; geo-management issues. (B)

**780 Seminar in Geography. Cr. 3**

Philosophy and methodology of geography. New developments and recurrent problems in geographic thought. (Y)

**785 Urban and Regional Research Methods. Cr. 3**

Training in various research methods employed by geographers in regional research and work in urban areas. (Y)

**790 Directed Study. Cr. 2-3(Max. 8)**

Prereq: written consent of adviser and graduate officer. Readings and research. (T)

**799 Master's Essay Direction. Cr. 1-3**

Prereq: consent of instructor. (T)

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

Prereq: consent of adviser. (T)

## URBAN PLANNING (U P)

### Planning Background and Process

**511 Urban Planning Process. Cr. 3 or 4**

Scope and historical development of planning. Topics relevant to the practice of planning: theory, planning practice, social and physical development policy. (Y)

**521 (SOC 550) Urban and Metropolitan Living. Cr. 3**

Examination of the development and organization of urban living as it emerged from village to city to metropolitan region. Topics include: causes of urbanization and its consequences for the ecological and social structure of the city, intergroup relations, crime and poverty in the city. (Y)

**531 Current Planning Practice. Cr. 3 or 4**

Practical application of planning theory to current issues of planning and community development, including land use, economic development, and environmental concerns. (B)

**601 (GEG 613) Advanced Urban Geography. (GPH 613). 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)

**621 Urban Design Elements. Cr. 3**

Introduction to the role of urban design and the concept of design criteria, design variables, and terminology. (B)

**631 Housing Development. Cr. 3**

Process of urban residential development; emphasis on housing market analysis, the construction industry, and residential finance. (Y)

**651 Urban and Regional Systems. (GEG 651)(GPH 651). 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)

**701 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)

## Urban Structure and Analysis

**542 (GEG 615) Internal Structure of the City. (GPH 615). 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)

**552 (GEG 624) Industrial Geography. (GPH 624). Cr. 4**

Theory and practice of the location of industry, analysis of selected manufacturing industries and selected industrial regions. The role of industrial location in urban and regional development. (B)

**562 (GEG 628) Marketing Geography. (GPH 628). 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/self-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)

**582 (ECO 580) Urban and Regional Economics I. Cr. 3**

Prereq: ECO 101, ECO 102. 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)

**602 Readings in Land Use Planning. Cr. 3 or 4**

Analysis of development plans for new and existing communities; selected topics. (B)

**612 Planning Studies and Methods. Cr. 4**

Economic base, population, and land use studies. Discussion of approaches used to solve selected community development problems. (Y)

**632 Quantitative Techniques I. (GEG 642)(GPH 642). Cr. 4**

Statistical inference with emphasis on applications including control tendency, dispersion, hypothesis testing, correlation and regression. (Y)

**642 Quantitative Techniques II. Cr. 4**

Student computer account required. Material fee as indicated in *Schedule of Classes*. Multivariate analysis with emphasis on applications, including matrix algebra, vector spaces, linear and non-linear models, principal components analysis, and programming approaches. (B)

**652 Transportation and Planning. Cr. 4**  
Introduction to the role of transportation in the planning process involving both regional and urban considerations. (Y)

**672 (GEG 665) Computer Assisted Mapping. (GPH 665). Cr. 4**  
Science of computer assisted mapping and hands-on computer assisted map production; geo-management issues. (B)

**702 Community Planning Workshop. Cr. 3**  
Prereq: U P 612. Offered for S and U grades only. 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)

### Issues in Public Policy Management

**515 (P S 522) Issues in Urban Public Policy and Management. Cr. 4**  
Prereq: P S 224 and P S 231 or consent of instructor. No graduate credit in political science. 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 program and public services. (B)

**605 Financial Aspects of Urban Planning. Cr. 3 or 4**  
Costs and revenues of urban development in relation to land uses. Study of financial impact evaluations and methods of financial analysis. (Y)

**635 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)

**655 (U S 621) Regional, State, and Urban Economic Development: Policy and Administration. (P S 644)(ECO 665). Cr. 3**  
Prereq: graduate standing. Examination of regional, state, and local economic development theory, analysis, policy and administration. (B)

**665 Land Use Controls. Cr. 2 or 3**  
Techniques available to guide land development. Concepts in zoning, subdivision regulations, timing and sequence of land development. (Y)

**675 (ECO 552) State and Local Finance. Cr. 3**  
Prereq: ECO 102. 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. (Y)

**685 Cost-Revenue Workshop. Cr. 3 or 4**  
Offered for S and U grades only. No credit after U P 605. 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)

**735 Community Development Studies. Cr. 4**  
Effects of land use carrying capacity on development, costs associated with built-up areas, and an assessment of revenue in relation to growth. (Y)

**755 (P S 730) 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)

**765 (P S 724) 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)

### Other Courses

**510 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)

**610 Studies in Urban Planning. Cr. 2-4(Max. 6)**  
Individual problems in urban planning. (Y)

**640 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)

**770 Projects in Urban Planning. Cr. 2-4(Max. 6)**  
Development and application of research design to specified urban problems. (B)

**790 Directed Study. Cr. 2-4(Max. 8)**  
Independent reading and research. (T)

**796 Research Topics. Cr. 2-4(Max. 6)**  
Individual problems in urban planning. (T)

**799 Master's Essay Direction. Cr. 1-3**  
Prereq: consent of adviser. (T)

**899 Master's Thesis Research and Direction. Cr. 1-8(8 req.)**  
Prereq: consent of adviser. (T)



# INDUSTRIAL RELATIONS

Office: 1262 Faculty/Administration Building; 577-4380  
Director: Joseph B. Stulberg

## 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 and Psychology in the College of Liberal Arts, 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 industrial relations with a focus on the substance and process of collective bargaining. Students will be prepared for industrial relations positions in government, business and union organizations, and MAIR assists 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 14. 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 letters of recommendation and completion of the program application form, in addition to the transcripts and application form required by the Graduate School. 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: statistics (equivalent to ECO 410 and 510, or FBE 330 and 540); introductory micro- and macroeconomics (such as ECO 101 and 102 or FBE 608); and one course in college mathematics (equivalent to at least MAT 150). A grade of 'C' or better is required for all prerequisite courses.

### Degree Requirements

MAIR requires the satisfactory completion of at least thirty-two credits in graduate study, including a Core Curriculum of seven three-credit courses. Two options are available:

**Plan B:** Ten three-credit courses, plus a three-credit Master's Essay.

**Plan C:** Ten three-credit courses, plus two additional credits for Internships and/or a Directed Study. Or: Eleven three-credit courses.

The Core Curriculum is as follows:

1. Labor Relations Institutions and Public Policy (ECO 642)
2. Organizational Psychology (PSY 653)
3. Labor Relations and Collective Bargaining (MGT 775)
4. Economic Factors in Industrial Relations (ECO 747)
5. Applied Research Methods in Union-Management Relations (PSY 657)
6. Union Contract Administration (MGT 777)
7. Seminar in Industrial Relations (I R 750)

Four elective courses (or, under Plan B, three elective courses plus the Master's Essay) will complete the program. 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. Not more than two elective courses may be taken in the School of Business Administration. Electives are not limited to courses offered by the sponsoring departments.

The Seminar in Industrial Relations (I R 750) is to be taken only after the completion of the other six 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 391, 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 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 or the Assistant to 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 32 of this bulletin. Those listed below pertain to the Industrial Relations Program:

**Healthcare Personnel Administration Association of Southeastern Michigan 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.

**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.

**Michigan Quality of Life Council and Irving Bluestone 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)

*The following courses, numbered 500-999, are offered for graduate credit. For interpretation of numbering system, signs and abbreviations, see page 463.*

### 740 Labor Relations Law. Cr. 3

Prereq: ECO 642 or MGT 775; enrollment in MAIR or consent of instructor. Federal regulation of union organization, collective bargaining, and union contract administration in the private sector. Norris-La Guardia Act; National Labor Relations Act, as amended. Content, administration and judicial interpretation of labor relations legislation. (Y)

### 745 Employment Relations Law. Cr. 3

Prereq: ECO 642 or equiv.; enrollment in MAIR or consent of instructor. Federal and state legislation affecting employee-employer relations: Title VII of the Civil Rights Act; pension regulation (ERISA); occupational safety and health (OSHA); Fair Labor Standards Act. Implementation of these policies and their effect on labor-management relations. (S)

### 750 Seminar in Industrial Relations. (ECO 749). Cr. 3

Prereq: enrollment in MAIR; six core courses; must be taken as part of final sixteen credits. Study of selected industrial relations topics. Research paper required of each student. Industrial relations specialists utilized as guest speakers. (Y)

### 760 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)

### 770 Trends in Collective Bargaining and Improving the Quality of Work Life. 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)

### 790 Directed Study. Cr. 1-2

Prereq: MAIR core course in relevant field; prior approval of MAIR Director for topic and instructor; written consent of adviser and graduate officer. Intensive study of significant industrial relations topic against background of more general course work. Preparation of term paper required. (T)

### 799 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)





**FACULTY OF THE UNIVERSITY**

# FACULTY OF THE UNIVERSITY

- ABBASI, ALI A.: M.D., Damascus University, Syria; Clinical Associate Professor of Internal Medicine.
- ABBASI, TARIQ A.: M.B.B.S., Osmania Medical College; Clinical Instructor in Psychiatry.
- ABBEY, ANTONIA D.: B.A., University of Michigan; M.A., Ph.D., Northwestern University; Assistant Professor of Community Medicine; Adjunct Assistant Professor of Psychology.
- ABBOTT, PHILIP: B.A., American University; M.A., Ph.D., Rutgers University; Professor of Political Science.
- ABBRECHT, MARTIN M.: M.D., University of Michigan; Clinical Assistant Professor of Dermatology and Syphilology.
- ABDELRAHMAN, ANAN ADIB: M.B., Ain Shams University, Cairo; Clinical Assistant Professor in Obstetrics and Gynecology.
- ABDULHAMID, IBRAHIM: M.D., Garyounis University, Libya; M.S., Ohio State University; Assistant Professor (FTA) of Pediatrics.
- ABEL, ERNEST L.: B.A., M.A., Ph.D. University of Toronto; Professor of Psychology; and Professor of Obstetrics and Gynecology.
- ABEL-HOROWITZ, H. JAY: B.A., University of Michigan; M.A., Oakland University; M.D., University of Michigan; Clinical Assistant Professor of Psychiatry.
- ABRAMS, ROBERT H.: B.A., J.D., University of Michigan; Professor of Law.
- ABRAMSON, HANLEY N.: B.S. (Pharmacy), Wayne State University; M.S., Ph.D., University of Michigan; Professor and Chairperson of Pharmaceutical Sciences.
- ABT, JEFFREY: B.F.A., M.F.A., Drake University; Associate Professor and Chairperson of Art and Art History.
- ABU-HAMDAN, DAOUD K.: M.D., University of Madrid; Associate Professor of Internal Medicine.
- ABU-ZAHRA, HAKAM T.: M.B., B.S., University of Cairo; Clinical Assistant Professor of Internal Medicine.
- ABUL-HUSN, MONA F.: B.S. (Pharmacy), M.S., Pharm.D., Wayne State University; Adjunct Assistant Professor of Pharmacy Practice.
- ACKERMAN, SHARON: B.S., George Washington University; Ph.D., New York University; Assistant Professor of Surgery; Assistant Professor of Biochemistry.
- ADAMANY, DAVID W.: A.B., Harvard College; J.D., Harvard University Law School; M.S., Ph.D., University of Wisconsin; President of the University and Professor of Law and of Political Science.
- ADAMS, JAMES: B.S., Kearney State College; M.S., Wayne State University; Adjunct Assistant Professor of Medical Technology.
- ADAMS, KENNETH M.: B.S., M.A., Ph.D., Wayne State University; Adjunct Professor of Psychology.
- ADAMSON, R. KING: Ph.D., University of Wisconsin; Associate Professor Emeritus of Economics; Dean Emeritus of the College of Liberal Arts.
- ADEL, SALAH: M.B., Ch.B., M.D., Cairo University; Clinical Assistant Professor of Obstetrics and Gynecology.
- ADELMAN, MARTIN J.: B.A., M.S., J.D., University of Michigan; Professor of Law.
- ADELMAN, SUSAN E.: B.S., University of Michigan; M.D., Wayne State University; Clinical Assistant Professor of Surgery.
- ADELSON, IRWIN P.: B.A., M.D., University of Michigan; Clinical Assistant Professor of Psychiatry.
- ADELSON, SEYMOUR S.: A.B., Wayne State University; M.D., University of Michigan; Clinical Associate Professor of Internal Medicine.
- ADLER, EDWARD: B.S., M.D., University of Michigan; Clinical Assistant Professor of Internal Medicine.
- ADLER, JOSHUA E.: B.A., Yeshiva University; M.D., Ph.D., University of Pennsylvania; Associate Professor of Neurology.
- AGER, JOEL W.: B.A., Colgate University; M.A., Ph.D., Syracuse University; Professor of Psychology.
- AGNONE, EUGENE J.: M.D., Wayne State University; Clinical Instructor in Internal Medicine.
- AGOCS, SANDOR: D.Litt., Eotvos University, Hungary; Ph.D., University of Rochester; Associate Professor, College of Lifelong Learning.
- AHMAD, FAZAL: B.S., M.D., Dow Medical College, Pakistan; Clinical Instructor in Internal Medicine.
- AHMAD, KHURSHID: M.B., King Edward Medical College, Pakistan; D.L.O., Royal College of Surgeons; Assistant Professor of Radiation Oncology.
- AHMAD, MATLUB: B.S., M.S., University of Dacca; Ph.D., Pennsylvania State University; Assistant Professor of Physics.
- AHMAD, NASSER: M.B., B.S., King Edward Medical College, India; Clinical Instructor in Internal Medicine.
- AJAYI, RICHARD A.: B.S., University of IFE; M.B.A., Ph.D., Temple University; Assistant Professor of Finance and Business Economics.
- AKAAH, ISHMAEL P.: B.Sc., University of Ghana; M.A., M.B.A., Ph.D., University of Pennsylvania; Associate Professor of Marketing.
- AKAN, KORKUT M.: B.S., M.D., Ankara University; Clinical Assistant Professor of Family Medicine.
- AKAY, ADNAN: B.S., M.M.E., Ph.D., North Carolina State University; Professor of Mechanical Engineering.
- AKINS, ROBERT A.: B.A., Wittenberg University; Ph.D., Ohio State University; Assistant Professor of Biochemistry.
- AKTAN, HALUK M.: B.S., M.S., Middle East Technical University; Ph.D., University of Michigan; Associate Professor of Civil Engineering.
- ALADJEM, SILVIO: M.D., University of Uruguay; Clinical Professor of Obstetrics and Gynecology.
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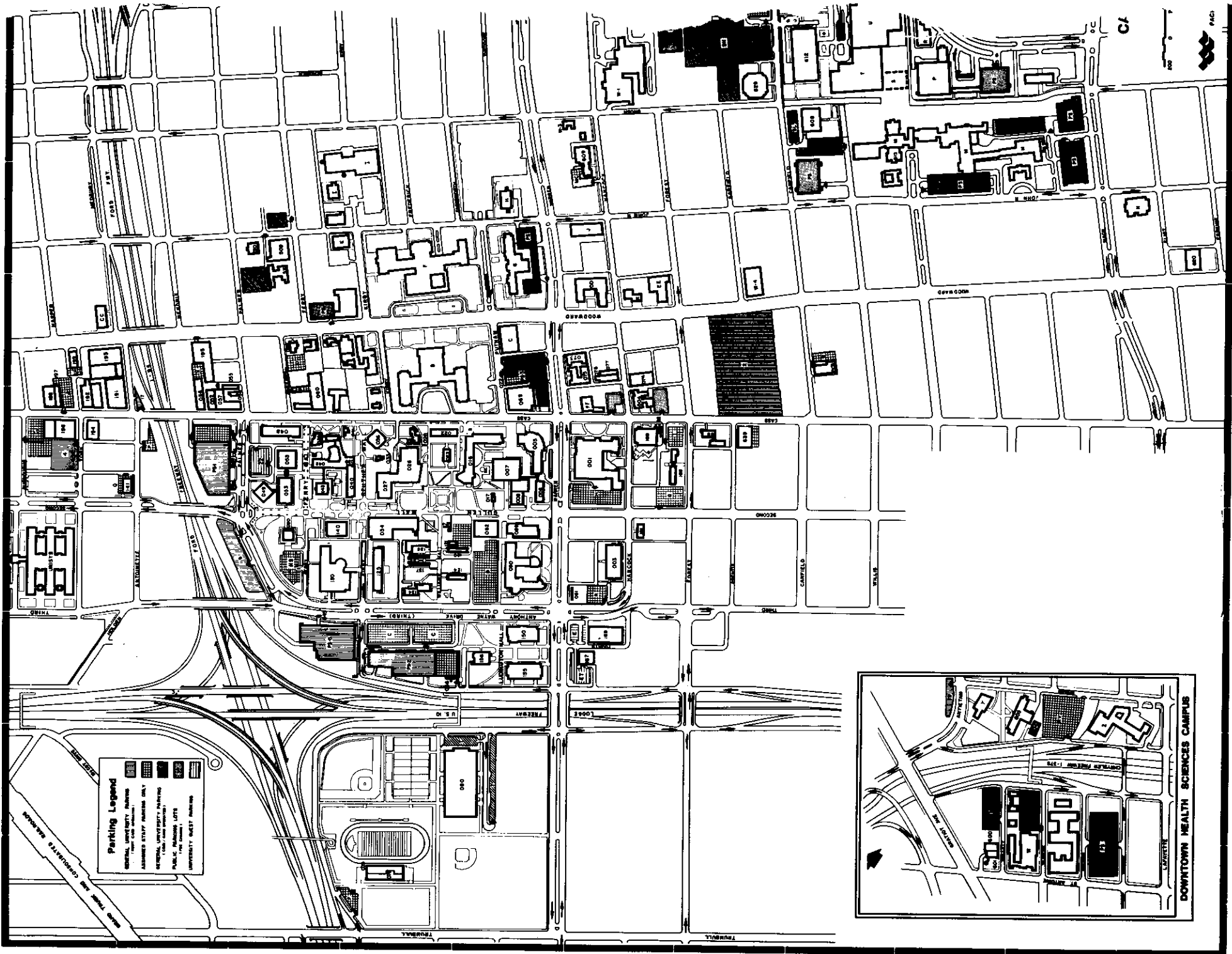


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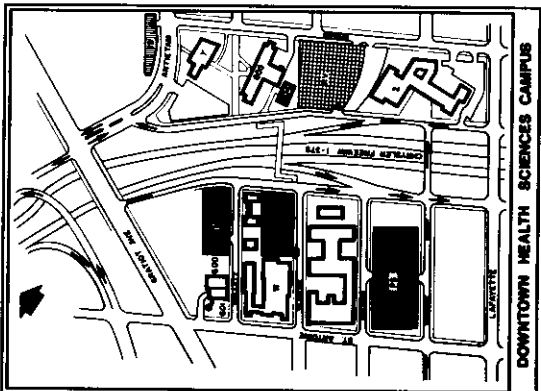


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**Parking Legend**

- Essential University Parking
- General University Parking
- Admitted Student Parking Only
- General University Parking
- Public Access Lots
- University Guest Parking



DOWNTOWN HEALTH SCIENCES CAMPUS

# 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. Rands 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 Mattheai 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 Manoogian Hall – 906 West Warren Ave.
- 156 St. Andrew's Church – 918 Ludington Mall
- 167 Engineering Technology Building – 4855 Fourth St.
- 169 Bioengineering Building – 818 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.

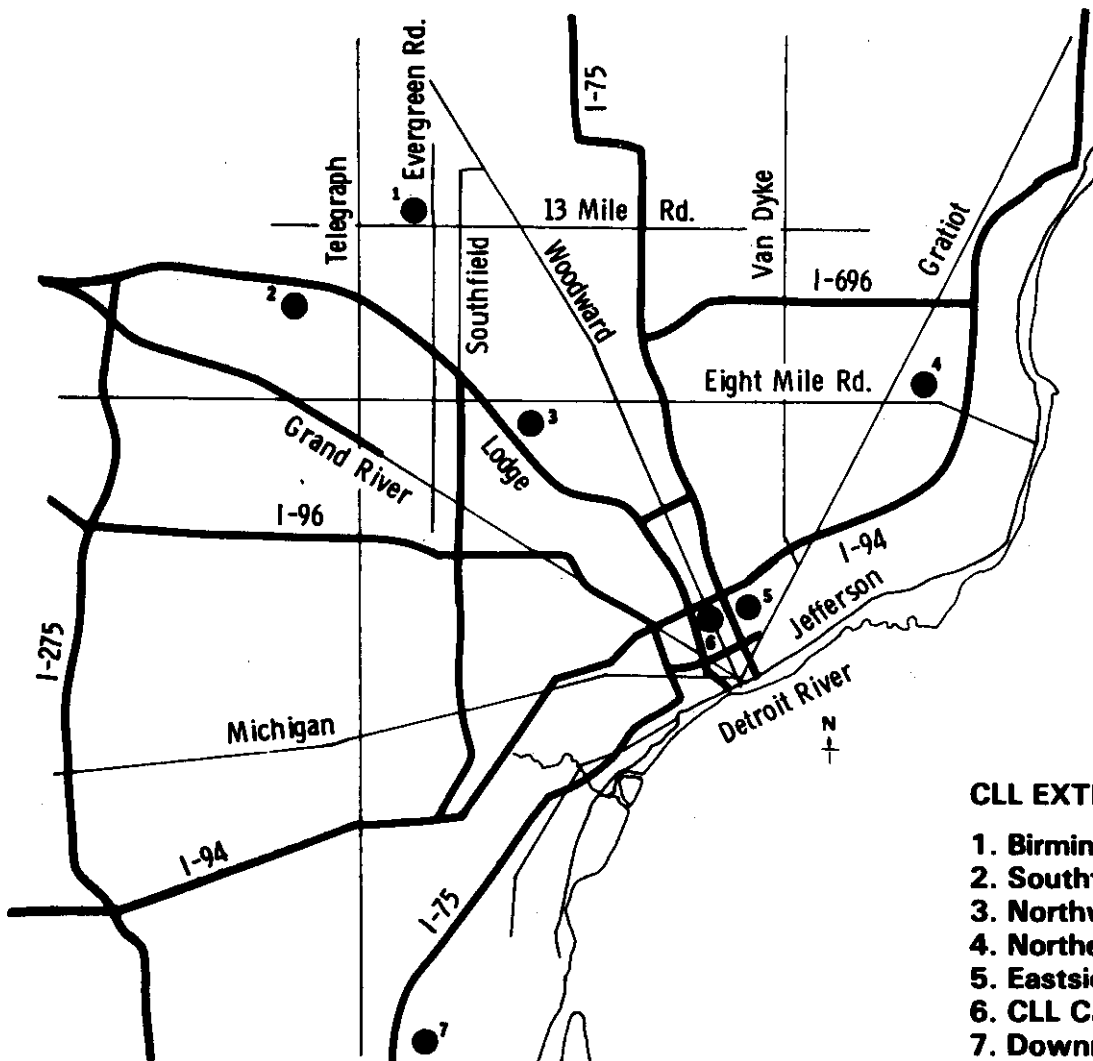
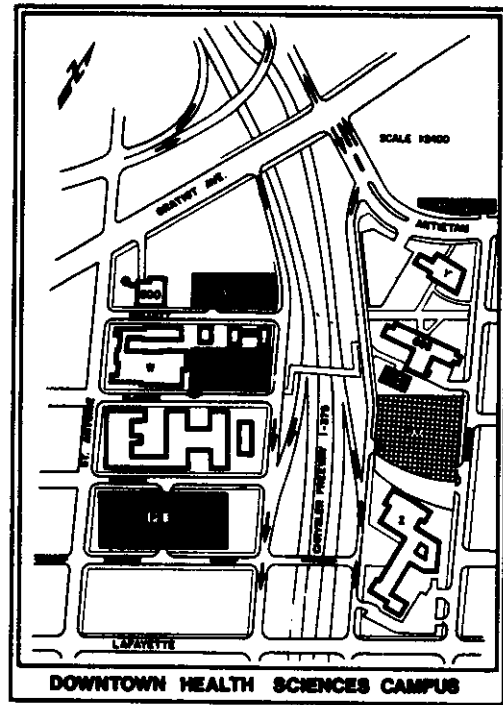
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SEPTEMBER 20, 1998

UNIVERSITY  
OF MICHIGAN  
SCHOOL OF 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



## CLL EXTENSION CENTERS

1. Birmingham Center
2. Southfield Center
3. Northwest Center
4. Northeast Center
5. Eastside Center
6. CLL Campus Office
7. Downriver Center

# CLL CENTER LOCATIONS

**Bentley Center (Livonia)**  
15100 Hubbard  
Livonia, MI 48154

**Center Hours:**  
Contact the US/WCP  
Office at 577-0832  
(Counseling by appointment)

**Birmingham Center**  
Groves High School  
20500 W. Thirteen Mile  
Birmingham, MI 48010  
642-2661

**Center Hours:**  
M-Th 8:30 a.m. - 10:00 p.m.  
F 8:30 a.m. - 5:00 p.m.  
S 9:00 a.m. - 4:00 p.m.  
(Counseling by appointment)

**CLL Registration Services**  
Criminal Justice Building  
6001 Cass, Room 329  
Detroit, MI 48202  
577-0832

**Office Hours:**  
M-F 8:30 a.m. - 5:00 p.m.

**US/WCP**  
Registration Services  
Criminal Justice Building  
Detroit, MI 48202  
577-0832

**Office Hours:**  
8:30 a.m. - 5:00 p.m.

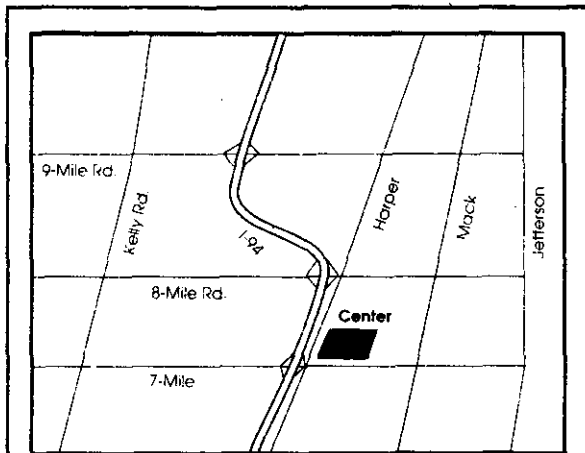
**Eastside Center**  
3127 E. Canfield  
Detroit, MI 48207  
577-4701  
(Counseling by appointment)

**Center Hours:**  
M 8:30 a.m. - 8:30 p.m.  
Tu 8:30 a.m. - 8:30 p.m.  
W 8:30 a.m. - 9:30 p.m.  
Th 8:30 a.m. - 8:30 p.m.  
F 8:30 a.m. - 5:00 p.m.

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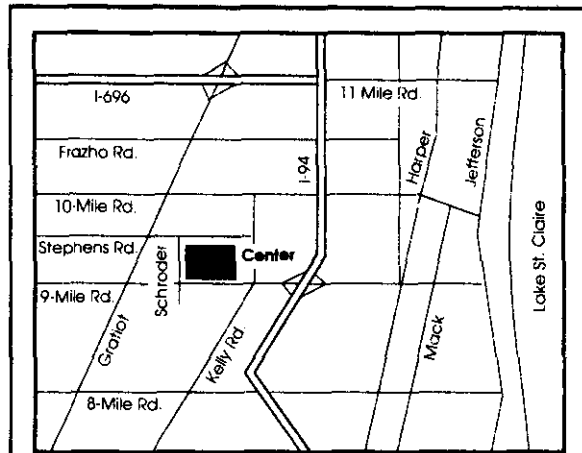
**PLEASE NOTE:** CLL Center office hours and hours of registration ARE DIFFERENT. For information on specific registration hours, please contact any CLL Center.

# CLL CENTER LOCATIONS



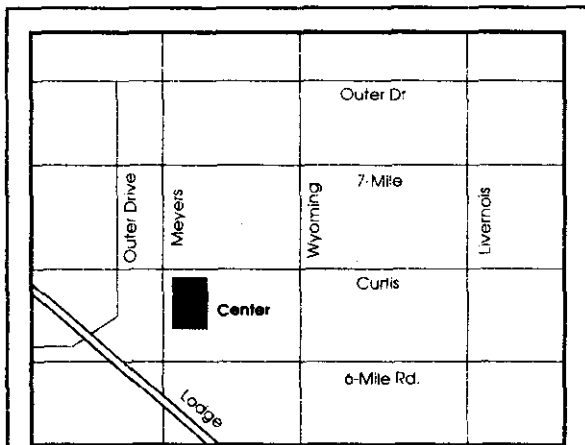
**Harper Woods Center**  
 Bishop Gallagher H. S.  
 19360 Harper  
 Harper Woods, MI 48225  
 881-2438

**Center Hours:**  
 M-Th 5:00 p.m. - 10:00 p.m.  
 (Counseling by appointment)



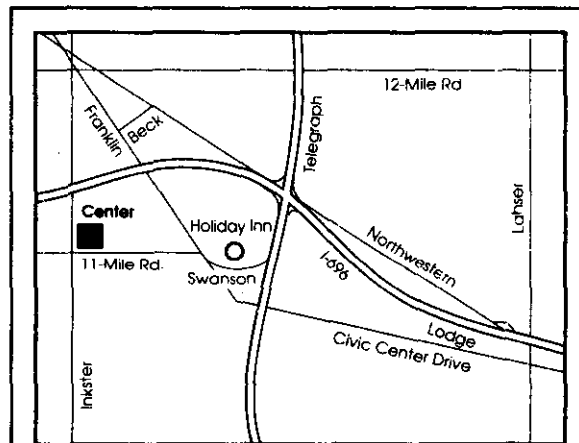
**Northeast Center**  
 St. Basil School  
 22860 Schroeder  
 East Detroit, MI 48021  
 771-3730

**Center Hours:**  
 M-Th 8:30 a.m. - 10:00 p.m.  
 F 8:30 a.m. - 5:00 p.m.  
 S 9:00 a.m. - 4:00 p.m.  
 (Counseling by appointment)



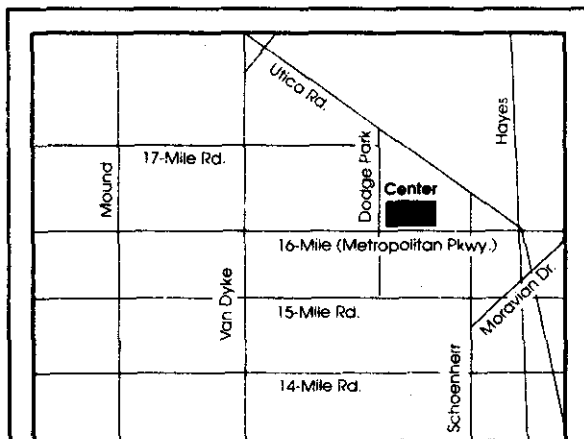
**Northwest Activities Center**  
 18100 Meyers  
 Detroit, MI 48235  
 577-2937

**Center Hours:**  
 M-Th 8:30 a.m. - 10:00 p.m.  
 F 8:30 a.m. - 5 p.m.  
 Sat 8:30 a.m. - 12:30 p.m.  
 (Counseling by appointment)



**Southfield Center**  
 Signature Office Building  
 27300 W. Eleven Mile  
 Southfield, MI 48034  
 358-2104 577-3592

**Center Hours:**  
 M-Th 8:30 a.m. - 10:00 p.m.  
 F 8:30 a.m. - 5:00 p.m.  
 S 9:00 a.m. - 4:00 p.m.  
 (Counseling by appointment)



**Sterling Heights Center**  
 Heritage Junior High  
 37400 Dodge Park  
 Sterling Heights, MI 48312  
 978-7881

**Center Hours:**  
 M-Th 8:30 a.m. - 10:00 p.m.  
 F 8:30 a.m. - 5:00 p.m.  
 S 9:00 a.m. - 4:00 p.m.  
 (Counseling by appointment)

**PLEASE NOTE:** CLL Center office hours and hours of registration ARE DIFFERENT. For information on specific registration hours, please contact any CLL Center.



# 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.*

ACC —Accounting	60	DE —Driver Education	80
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AS —American Studies	(see Undergrad. Bulletin)	GPH —Geography (Undergrad. courses)	(see Undergrad. Bulletin)
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## COURSE NUMBERING SYSTEMS

### For the College of Education

500–699 — Undergraduate or graduate credit.

700–899 — Open to graduate students exclusively.

900–999 — Open to doctoral students exclusively.

### For the Faculty of Pharmacy

600–699 — Undergraduate/Graduate Courses.

700–899 — Graduate Courses.

900–999 — Ph.D. Courses.

### For all other Schools and Colleges

500–699 — Junior- and senior-level courses; also may be taken for graduate credit by students admitted to a graduate program, except where expressly prohibited.

700–899 — Open to graduate/professional students exclusively.

900–999 — 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.

(T) — Offered every term.

(Y) — Offered at least once every academic year  
(Fall or Winter, not Spring/Summer).

(F) — Offered Fall Term.

(W) — Offered Winter Term.

(S) — Offered Spring/Summer Term.

(B) — Offered every other year.

(I) — Offered irregularly.

*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  
TV — Television

**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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