



Wayne State University

GRADUATE BULLETIN 1987-89



A Degree Of Excellence

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Academic Calendar 1987-1989

Spring/Summer — Term III, 1987

Term begins	Wed., May 6, 1987
Final registration	Tues., May 5 - Fri., May 8
Last day for filing degree applications	Fri., May 8
Classes begin	Mon., May 11
Memorial Day recess	Mon., May 25
Day scheduled as a Monday for Spring Session and Spring/Summer Term	Fri., May 29
Early/Mail registration for Fall Term	Fri., June 12 - Fri., July 10
Classes end for Spring Session	Fri., June 26
Examination period for Spring Session	Mon., June 29 - Tues., June 30
Summer Session begins	Wed., July 1
Independence Day recess	Fri., July 3 - Sat., July 4
Classes end for Spring/Summer Term	Fri., July 31
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 III ends	Sat., Aug. 29, 1987

Fall — Term I, 1987

† University year appointments begin	Sun., Aug. 30, 1987
Term begins	Sun., Aug. 30
Final registration	Sat., Aug. 29 - Mon., Aug. 31 - Thur., Sept. 3
Last day for filing degree applications	Thurs., Sept. 3
Labor Day recess	Mon., Sept. 7
Classes begin	Tues., Sept. 8
Mail registration for Winter Term	Fri., Oct. 2 - Fri., Oct. 30
‡ Day scheduled as a Thursday	Tues., Nov. 24
† Day scheduled as a Friday	Wed., Nov. 25
Thanksgiving Day recess	Thurs., Nov. 26 - Sat., Nov. 28
Commencement	Tues., Dec. 15
Classes end	Wed., Dec. 16
Examination week	Thurs., Dec. 17 - Wed., Dec. 23
Holiday recess	Fri., Dec. 25, 1987 - Fri., Jan. 1, 1988
Term ends	Thurs., Dec. 31, 1987

Winter — Term II, 1988

Term begins	Fri., Jan. 1, 1988
Final registration	Tues., Jan. 5 - Fri., Jan. 8
Last day for filing degree applications	Fri., Jan. 8
Classes begin	Mon., Jan. 11
Mail registration for Spring/Summer Term	Fri., Feb. 12 - Thurs., March 10
Spring recess	Mon., March 14 - Sat., March 19
Classes end	Sat., April 23
Examination week	Mon., April 25 - Sat., April 30
Term ends	Mon., May 2
Commencement	Thurs., May 5
† University year appointments end	Sun., May 29, 1988

Spring/Summer — Term III, 1988

Term begins	Tues., May 3, 1988
Final registration	Tues., May 3 - Fri., May 6
Last day for filing degree applications	Fri., May 6
Classes begin	Mon., May 9
Day scheduled as a Monday for Spring and Spring/Summer Sessions	Fri., May 27
Memorial Day recess	Mon., May 30
Mail registration for Fall Term	Fri., June 10 - Fri., July 8
Classes end for Spring Session	Fri., June 24
Examination period for Spring Session	Mon., June 27 - Tues., June 28
Summer Session begins	Wed., June 29
Independence Day recess	Mon., July 4
Day scheduled as a Monday for Summer Session	Fri., July 15
Classes end for Spring/Summer Term	Fri., July 29
Examination week for Spring/Summer Term	Mon., Aug. 1 - Thurs., Aug. 4
Classes end for Summer Session	Tues., Aug. 16
Study Day for Summer Session	Wed., Aug. 17
Examination period for Summer Session	Thurs., Aug. 18 - Fri., Aug. 19
Spring/Summer Term ends	Sat., Aug. 27, 1988

Fall — Term I, 1988*

† University year appointments begin	Sun., Aug. 28, 1988
Term begins	Sun., Aug. 28
Final registration	Sat., Aug. 27 - Mon., Aug. 29 - Thurs., Sept. 1
Last day for filing degree applications	Thurs., Sept. 1
Labor Day recess	Mon., Sept. 5
Classes begin	Tues., Sept. 6
Mail registration for Winter Term	Fri., Sept. 30 - Fri., Oct. 28
‡ Day scheduled as a Thursday	Tues., Nov. 22
† Day scheduled as a Friday	Wed., Nov. 23
Thanksgiving Day recess	Thurs., Nov. 24 - Sat., Nov. 26
Classes end	Wed., Dec. 14
Study Day	Thurs., Dec. 15
Commencement	Thurs., Dec. 15
Examination week	Fri., Dec. 16 - Thurs., Dec. 22
Holiday recess	Sun., Dec. 25, 1988 - Mon., Jan. 2, 1989
Term ends	Sat., Dec. 31, 1988

Winter — Term II, 1989*

Term begins	Sun., Jan. 1, 1989
Final registration	Tues., Jan. 3 - Fri., Jan. 6
Last day for filing degree applications	Fri., Jan. 6
Classes begin	Mon., Jan. 9
Mail registration for Spring/Summer Term	Fri., Feb. 10 - Thurs., March 9
Spring recess	Mon., March 13 - Sat., March 18
Classes end	Sat., April 22
Examination week	Mon., April 24 - Sat., April 29
Term ends	Mon., May 1
Commencement	Thurs., May 4
† University year appointments end	Sun., May 28, 1989

† University year appointments will begin on the first day of the Fall Term and be a full nine months in length. Individual service assignments are the responsibility of the appropriate Dean, or, by delegation, the Department Chairperson.

‡ An equal number of each day of the week is needed for some laboratory courses. To make up for days lost for Thanksgiving recess, these days have been designated as days scheduled for classes which normally meet on Thursday or Friday.

* Tentative.

This publication is for informational 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.

General Information

Contained in the following section are the general rules and regulations of the Graduate School, 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.

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 146,000 living alumni. More than 110,000 of them live in the state and more than 97,000 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 College of Fine and Performing Arts and the College of Urban, Labor and Metropolitan Affairs were established.

Location

Over 100 buildings provide housing for the service, instructional and research needs of the University and its students and staff. Most academic and service units of the University are located on the main campus in the heart of Detroit, largely bounded by York Street on the north, Woodward Avenue on the East, Forest Avenue on the south and Trumbull Avenue on the west. The major classroom, laboratory, library and other academic buildings are located east of the Lodge Expressway while the athletic and recreational facilities are mostly on the west side of the Expressway. (For maps, see pages 456-460.)

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

School of Fine and Performing Arts
 Graduate School
 Division of Health and Physical Education
 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 graduate certificate programs, and the graduate degrees of the Library Science Program.

Credit courses are also offered by the Division of Health and Physical Education. 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.

Wayne State University is accredited as a doctoral degree-granting institution by the North Central Association of Colleges and Schools. In addition, some forty specific programs and curricula are accredited individually by the several professional accrediting associations. The courses, programs and degree requirements of the several units are described in this Bulletin.

Non-credit courses, seminars and programs are offered primarily through the following units:

College of Lifelong Learning
 Center for Urban Studies
 Institute for Continuing Legal Education
 Center for Black Studies
 Center for Peace and Conflict Studies
 Institute of Labor and Industrial Relations
 Institute of Gerontology
 Merrill-Palmer Institute for Family and Human Development

¹ Sponsored jointly with the University of Michigan and the Michigan Bar Association.

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 program review, the Council sets admission standards for graduate programs, establishes criteria and evaluates applications for the Graduate-Professional Scholarship and the Thomas C. Rumble University Fellowship programs, and awards the Ph.D. and interdisciplinary master's degrees.

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

Graduate Faculty

Members of the Wayne State University faculty may be appointed to the Graduate Faculty upon recommendation by their department or division, approval by their dean/director, and by the Dean of the Graduate School on behalf of the Graduate Council. These appointments may be made in one of the following three classifications: regular graduate faculty, associate graduate faculty, adjunct 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.

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.

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, 1044 Mackenzie Hall, 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 38 for description of services extended to disabled students.



Academic Programs and Degrees

The following table 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 an honors major is also available that field at the undergraduate level. Detailed descriptions of the programs may be found in the appropriate sections of the Undergraduate or Graduate Bulletin.

Abbreviations for University Degrees and Certificates

BA Bachelor of Arts	MAIR Master of Arts in Industrial Relations
BAS Bachelor of Applied Studies	MBA Master of Business Administration
BET Bachelor of Engineering Technology	MEd Master of Education
BFA Bachelor of Fine Arts	MFA Master of Fine Arts
BM Bachelor of Music	MM Master of Music
BPA Bachelor of Public Affairs	MPA Master of Public Administration
BS Bachelor of Science	MS Master of Science
BSMS Bachelor of Science in Mortuary Science	MSLS Master of Science in Library Science
EdD Doctor of Education	PBC Post-Baccalaureate Certificate
ESC Education Specialist Certificate	PhD Doctor of Philosophy
GC Graduate Certificate	PMC Post-Master Certificate
JD Juris Doctor	SCP Specialist Certificate Program
LLM Master of Laws	SPL Specialist in Library Science
MA Master of Arts	TC Teaching Certificate

Abbreviations for Columns Indicating Degree Categories

I Baccalaureate or First Professional Degree	IV Master's Degree
II Post-Bachelor or Graduate Certificate	V Specialist Certificate
III Teaching Certificate	VI Doctoral Degree

School/College and Major	I	II	III	IV	V	VI
School of Business Administration						
Accounting		BA, BS.....		MBA		
Finance and Business Economics		BA, BS.....		MBA		
Management and Organizational Studies		BA, BS.....		MBA		
Marketing.....		BA, BS.....		MBA		
College of Education						
Adult and Continuing Education				MEd		
Art Education.....		BA, BS.....	TC	MEd		
Bilingual/Bicultural Education		BA, BS.....	TC	MEd		
Business Education		BA, BS.....	TC			
Counselor Education		BS.....		MA, MEd.....	ESC.....	Edd, PhD
Curriculum and Instruction.....						Edd, PhD
Curriculum and Instruction (Elementary)					ESC	
Curriculum and Instruction (Secondary).....					ESC	
Data Processing		BA, BS.....	TC			
Distributive Education.....		BA, BS.....	TC			
Elementary Education		BA, BS.....	TC	MAT, MEd.....	ESC	
English Education (Secondary)		BA, BS.....	TC	MEd.....	ESC	
Evaluation and Research, Education				MEd.....		Edd, PhD
Family Life Education		BA, BS.....	TC			
Foreign Language Education		BA, BS.....	TC	MEd		
General Administration and Supervision					ESC.....	Edd, PhD
General Education						Edd
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.....	ESC	

<i>School/College and Major</i>	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>V</i>	<i>VI</i>
Mathematics Education	BA, BS		TC	MEd	ESC	
Music Education	BA		TC	MEd		
Nursery School Education	BA, BS		TC			
Pre-School and Parent Education				MEd		
Psychology, Educational				MEd	ESC	EdD, PhD
Psychology, School and Community				MA	ESC	EdD, PhD
Reading				MEd		
Science Education	BA, BS		TC	MEd	ESC	
Secondary Education				MAT, MEd	ESC	
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	BA, BS		TC			
Vocational and Applied Arts Education				MEd	ESC	EdD, PhD
Vocational and Rehabilitation Counseling				MA	ESC	

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	BET					
Electronics and Computer Control Systems				MS		
Hazardous Waste Control		GC				
Industrial Engineering	BS			MS		PhD
Manufacturing/Industrial Engineering Technology	BET					
Mechanical Engineering	BS			MS		PhD
Mechanical Engineering Technology	BET					
Metallurgical Engineering	BS			MS		PhD
Operations Research				MS		PhD
Quality Control Technology	BET					

School of Fine and Performing Arts

Art	BA			MA, MFA		
Art History	BA			MA		
Dance	BA		TC			
Design and Merchandising	BA			MA		
Fine Arts	BFA			MA, MFA		
Museum Practice						PMC
Music	BA, BM			MM		
Music, Choral Conduction				MM		
Music, Church	BM					
Music Composition	BM			MM		
Music Education	BM			MM		
Music Industry Management	BM					
Music, Jazz and Contemporary Media	BM					
Music Performance	BM			MM		
Music Theory	BM			MM		
Music Therapy	BM					
Theatre	BA, BFA			MFA		

Graduate School

Archival Administration	GC					
Child and Family Studies	GC					
Industrial Relations				MAIR		
Library Science				MSLS		SPL

Division of Health and Physical Education

Health Education			TC	MEd		
Health and Fitness Program Management		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>
Physical Education	BA, BS		TC	MEd		
Recreation and Park Service	BS			MA		
Sports Administration				MA		
Law School						
Corporate Finance Law				LLM		
Joint JD/MA in Political Science	JD			MA		
Labor Law				LLM		
Law	JD					
Taxation				LLM		
College of Liberal Arts						
American Studies	BA					
Anthropology*	BA			MA		PhD
Anthropology and Sociology	BA					
Art History	BA			MA		
Audiology				MA		PhD
Biological Sciences*	BA, BS			MS		PhD
Chemistry*	BA, BS			MA, MS		PhD
Classical Civilization*	BA					
Classics*	BA			MA		
Comparative Literature				MA		
Computer Science*	BA, BS	PBC		MA, MS		PhD
Criminal Justice	BS			MA, MS, MPA		
Dietetics, Medical	BS					
East European Studies				MA		
Economics*	BA			MA		PhD
English*	BA			MA		PhD
English, Teaching College				MA		
Film Studies Program	BA					
French*	BA			MA		
Geography*	BA			MA		
Geology	BA, BS			MS		
German*	BA			MA		
Greek*	BA					
Hebrew	BA					
History*	BA			MA		PhD
Honors, College (Co-Major Program)	BA, BS					
Human Development	BA					
Humanities	BA			MA		
Information Sciences	BA					
International Studies (Co-Major Program)	BA					
Italian*	BA			MA		
Journalism*	BA					
Language, Modern Foreign						PhD
Latin*	BA			MA		
Linguistics	BA			MA		
Mathematics*	BA, BS			MA, MS		PhD
Mathematics, Applied				MA		
Mathematics, Teaching College				MA		
Near Eastern and Asian Studies	BA					
Near Eastern Languages	BA			MA		
Nutrition and Food Science*	BA, BS			MA, MS		
Peace and Conflict Studies (Co-Major Program)	BA					
Philosophy*	BA			MA		PhD
Physics and Astronomy	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					
Radio-TV*	BA					
Russian	BA			MA		
Slavic	BA					

<i>School/College and Major</i>	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>V</i>	<i>VI</i>
Sociology.....	BA, BAS			MA		PhD
Spanish*.....	BA			MA		
Speech*.....	BA			MA		PhD
Statistics.....				MA		
Urban Planning.....				MUP		
Women's Studies (Co-Major Program).....	BA					

College of Lifelong Learning

General Studies BGS, BTGS

School of Medicine

Anatomy.....				MS		PhD, MD/PhD
Audiology.....				MS		
Biochemistry.....				MS		PhD, MD/PhD
Community Health Services.....				MS		
Community Health Services Research and Evaluation.....		GC				
Immunology and Microbiology.....				MS		PhD, MD/PhD
Medical Physics.....						PhD
Medicine.....		MD				
Pathology.....						PhD
Pharmacology.....				MS		PhD, MD/PhD
Physiology.....				MS		PhD, MD/PhD
Psychiatry.....				MS		
Radiology.....				MS		

College of Nursing

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					PhD
Nursing Administration.....					SCP	
Nursing, Parenting and Families.....				MSN		

College of Pharmacy and Allied Health Professions

Medical Technology.....	BS			MS		
Medicinal Chemistry.....				MS		
Mortuary Science - Three Year Certificate.....	BSMS					
Nurse Anesthesia.....	BS			MS		
Occupational and Environmental Health.....				MS		
Occupational Therapy.....	BS	PBC		MS		
Pharmaceutical Administration.....				MS		
Pharmaceutical Sciences.....						PhD
Pharmaceutics.....				MS		
Pharmacology.....				MS		
Pharmacy.....	BS, PharmD					
Pharmacy, Hospital.....				MS		
Physical Therapy.....	BS					
Radiation Therapy.....	BS					

School of Social Work

Social Work BSW MSW

College of Urban, Labor, and Metropolitan Affairs

Black Studies (Co-Major Program).....	BA
Chicano-Boricua Studies (Co-Major Program).....	BA
Labor Studies.....	BA
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 the 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.

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. Students presenting less than a 3.0 undergraduate honor point average must pursue a master's program prior to consideration for admission to a doctoral program.

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 (see below for variants), 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.

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 baccalaureate graduates of unaccredited institutions must present a 3.00 (B) or better upper-division honor point average to be considered for graduate admission. If admitted, all such students will be assigned a qualified status unless exempted by the Office for Graduate Admissions. 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.

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

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.

Application Dates

The Office for Graduate Admissions (5980 Cass Avenue, Room 102, (313) 577-3596) will make every effort to process applications in time for the semester of the student's choice. However, only 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	Mid May	March 15

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.

College of Nursing: The deadline date for Summer and Fall doctoral applicants is February 15.

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

GRADUATE NON-DEGREE ADMISSION*

A student who is entering the Graduate School with objectives not related to the pursuit of a graduate degree — to earn credits for a *Continuing Teaching Certificate*, or to elect a limited number of courses for personal reasons — may request admission on a non-degree basis. One must file an *Application for Graduate Admission* but is not permitted to record a major. 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.

No student should select or continue in any of the graduate non-degree admission classifications if he/she has any interest in earning a degree. 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. 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. Depending on the applicant's highest previous degree, he/she may apply for admission to one of the following Graduate Non-Degree Admission 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. Applicants must submit an *Application for Graduate Admission* and request that official transcripts from all previously attended colleges and schools be forwarded directly to the Office for Graduate Admissions.
2. **POST-MASTER'S:** This rank is reserved for those students who evidence an earned master's degree at the time of application. Students holding Wayne State master's degrees should contact the Graduate Officer 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 those students who evidence an earned doctoral degree at the time of application.

Graduate Guest Admission: Graduate students from other accredited institutions may be admitted to elect a limited number of credits at Wayne State University. Interested students are directed to contact the Office for Graduate Admissions to obtain a *Graduate Guest Application*, which must be signed by the graduate dean of 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. Guest students are required to pay the non-refundable graduate application fee EACH TIME THEY APPLY.

Senior Rule Admission: In their last undergraduate semester, Wayne State students with a 3.0 upper division honor point average have the option of taking a limited number of graduate credits to be used

toward a master's degree. 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.

Students who qualify and are recommended by the department will be given a 'temporary' admission to the Graduate School for one semester. A final transcript showing the bachelor's degree must be submitted to the Office for Graduate Admissions before regular status as a graduate student can be authorized.

As a courtesy, the University permits a student admitted to Senior Rule status to pay undergraduate fees for those graduate courses elected toward his master's degree. Students admitted to this status are advised to elect 500-699 courses in their Senior Rule semester that carry both undergraduate and graduate credit. Authorization is made by the individual college or school. Completion of the *Application for Graduate Admission* form is required. Senior Rule status may be granted for one semester only. Students are directed to consult their advisers and the Office for Graduate Admissions. Application deadlines for Senior Rule admission are the same as for regular graduate admission.

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 Office of Student Services, 225 Cohn, Wayne State University, Detroit, Michigan 48202.

Permit to Register: The Permit to Register graduate admission status serves those students who wish an opportunity for one semester of graduate study but are presently not intending to pursue a degree, or who intend to participate in a sponsored institute program.

Eligibility for a graduate Permit to Register requires an earned baccalaureate from an accredited institution. Evidence of completion of the degree (e.g., diploma, transcript) must be submitted along with the Permit application and the processing fee. Approval to enroll on a Permit is valid for only one semester. 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 may 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 offering graduate degree programs to take advantage of educational opportunities at other Michigan public institutions offering graduate

* Applicants are advised that there exists an undergraduate admission classification called 'Post-Bachelor'. Students wishing graduate credit are cautioned not to enroll 'Post-Bachelor', since credits earned while holding that classification do not carry, and may not be converted to, graduate credit.

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 for the services rendered. 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

Holders of bachelor's degrees from accredited institutions who wish to elect only courses open to undergraduate students (numbered below 700) are advised to apply for post-bachelor status. Courses elected while in post-bachelor status will not count toward graduate credit but may be used to fulfill prerequisite requirements for graduate admission. Please check with the Admissions or Registrar's Offices for other regulations regarding this status.

Post-Baccalaureate Programs in Biology, Chemistry, Economics, Mathematics, and Physics

The Post-Baccalaureate Program in the College of Liberal Arts is a new and 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 and Physics. The Program, 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 of approximately \$7,500, 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 Julia Simmons, 1050 Mackenzie Hall, Wayne State University, Detroit, Michigan 48202.

International Students

Students from other countries must contact the Office for Graduate Admissions, 5980 Cass Avenue, 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 made financial arrangements which allow for approximately \$11,000 per calendar year (two semesters or nine months) for minimum tuition, supplies and living expenses; and (3) have a sufficient proficiency in English; for which 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.

Graduate Admission English Proficiency Requirement

Graduate applicants must demonstrate proficiency in English to obtain full admission to the University. To fulfill this requirement an applicant must satisfy one of the following criteria:

- 1) Complete baccalaureate degree requirements at a regionally accredited U.S. institution or at an institution in an English speaking country where English is the medium of instruction.
- 2) Present a Michigan English Language Assessment Battery (MELAB) score of at least 85. Departments may require a higher standard.
- 3) Present a Test of English as a Foreign Language (TOEFL) score of at least 550. Departments may request enforcement of a higher minimum TOEFL score where previous experience and demands of the discipline warrant it.

Exceptions to the above may be made only by the Graduate Dean based upon recommendation from the English Language Institute and/or the applicant's academic adviser.

Since it is not always possible for an applicant to demonstrate proficiency in English prior to arriving on campus, conditional admission may be extended to allow intensive English study or demonstration of proficiency upon arrival. Registration for graduate coursework may be permitted while proof of proficiency is being determined. Such authorization requires the written consent and support of the student's academic adviser and approval by the Graduate Dean. The student's admission status in such cases will remain a temporary one (generally no more than two semesters) until an acceptable test score is received or an exception is granted by the Graduate Dean in the manner described above.

Applicants educated in countries where English is not the native language and who are now permanent residents or United States citizens can be tested by the Director of the University's English Language Institute if they reside near the Wayne State University campus. Procedures for such testing must be initiated through the Office for Graduate Admissions.

Tuition and Fees

Listed below are the Tuition and Fees per semester in effect at the time of publication of this Bulletin. **Tuition and Fees are subject to change without notice by action of the Board of Governors.** Consult the official University *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 Building.

Graduate Tuition and Fees

Resident \$40.00 plus \$84.25 per credit
Non-Resident \$40.00 plus \$182.75 per credit.

Other Fees

Late Registration: A \$30.00 non-refundable late registration fee is assessed for any registration after the Final Registration Period.

Change of Elections (Drop/Add) Fee: A \$10.00 non-refundable fee is assessed any student who files a Change of Elections (Drop/Add) Form after the second week of classes, which increases the number of credit hours scheduled.

Course Materials Fee: A course materials fee may be assessed for registration in certain courses where a relatively large portion of the instructional costs is due to the necessary use of consumable resources.

Special Examination Fee: The fee for a special examination taken to establish credit by examination is \$10.00 per credit; however, additional fees may be authorized by the Registrar in exceptional cases to cover costs for administering the examination.

Examinations are approved under provisions established by each school or college. The Special Examination Fee is not assessed when credit is granted on the basis of transcript entries from another institution.

Music Fee: A music fee is assessed students registering for music courses taken as private lessons. Students should consult the University Official *Schedule of Classes* for the particular courses that require payment of a music fee. In the event of withdrawal, the student will receive a refund of the difference between the tuition 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.

Physical Education Fee: The Division of Health and Physical Education rents a gymnasium uniform and/or lock and storage basket to any student who desires this privilege. For some activities, there is an additional charge for equipment rental or use of special facilities. Students should consult the University *Schedule of Classes* for rental fees and particular courses that require payment of a physical education fee.

Application for Admission Fee: Each application for admission to the University must be accompanied by a non-refundable application fee of \$20.00 for U.S. Citizens and \$30.00 for International Students.

Late Payment Fee: See 'Payment of Tuition and Fees' below.

Significant exceptions in fee policy or in fees are made by the Law School (see page 173) and by the School of Medicine (see page 310).

Graduation Fee: A \$15.00 Graduation Fee must be paid before an application for graduation is filed.

Payment of Tuition and Fees

Checks or money orders should be made payable to Wayne State University Master and Visa 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:

Early Registration

Students must pay the \$40.00 Non-Refundable Registration Fee before registering. The tuition must be paid during the first week of classes. A \$25.00 Late Payment Fee is assessed for any balance after the first week of classes.

Final Registration

Payment of the \$40.00 Non-Refundable Registration Fee plus tuition for four credit hours at the undergraduate credit hour rate for freshmen and sophomores, is required of students who register during Final Registration. Payment of any tuition balance is required by 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.

Late Registration

First Week of Classes: Payment of the \$40.00 Non-Refundable Registration Fee and \$30.00 Late Registration Fee plus tuition for four credit hours at the undergraduate credit hour rate for freshmen and sophomores is required of students who register during the first week of classes. Payment of any tuition balance is required by 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 fees by the end of the first week of classes.

Second Week of Classes: Payment of full tuition and the \$40.00 Non-Refundable Registration Fee plus a \$30.00 Late Registration Fee is required of students who register late during the second week of classes.

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 \$40.00 Non-Refundable Registration Fee is required on the date of registration or no later than the first class meeting date. A \$25.00 Late Registration Fee is assessed students paying their assessment after this date.

Late Payment Fee: (For registration in courses meeting fifteen weeks or more.) A \$25.00 Late Payment Fee is assessed students with a tuition and/or fee balance after the first week of classes. An additional \$25.00 Late Payment Fee is assessed students with a tuition and/or fee balance after the eighth week of classes.

Holds on Records: A 'Hold' will be placed on the records of any student who has past due 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 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 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 Ombudsman at any time, the student may particularly want to utilize the Ombudsman'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 shall become effective November 9, 1979.

Transcript Request Policy

A fee of \$2.00 is charged for each *official* transcript that is sent via U.S. Mail. An additional fee of \$1.00 is charged for an official transcript issued directly to the student. A \$1.00 fee is charged for each *unofficial* transcript issued to the student.

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 at the Records Office and pay the appropriate fee at the Cashier's Office, Administrative Services Building. Requests by mail should be addressed to: Records Office, Attn: Transcripts, Wayne State University, Detroit, Michigan 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, date of birth, last term of attendance, authorizing signature, and the name and address to which the transcript is to be sent.

Requests for official transcripts will not be honored if the student or former student has an outstanding financial obligation to the University.

Cancellation of Tuition

The tables for cancellation of tuition listed below are subject to change at any time without notice by action of the University Administration. For cancellation tables in effect at the time of registration, consult the University *Schedule of Classes*, published in advance of each term.

The \$40.00 Registration Fee is non-refundable. In cases of complete official withdrawal before or during the first two weeks of classes, 100% of the tuition assessment is cancelled/refunded. See Withdrawals and Changes of Program, page 21.

A student who officially withdraws or reduces the number of credits scheduled shall be entitled to a cancellation/refund of the *tuition* applicable to the portion of the number of credits dropped, as follows:

For Classes Meeting 28 or More Weeks Refund

Withdrawal/drops through the sixth week of classes.....	100%
Thereafter.....	0%

For Classes Meeting 16 - 27 Weeks

Withdrawal/drops through the third week of classes.....	100%
Thereafter.....	0%

For Classes Meeting 9 - 15 Weeks

Withdrawal/drops through the second week of classes.....	100%
Thereafter.....	0%

For Classes Meeting 4 - 8 Weeks

Withdrawal/drops through the first week of classes.....	100%
Thereafter.....	0%

For Classes Meeting Less Than 4 Weeks

Withdrawal/drops on or before the first day of class.....	100%
Thereafter.....	0%

For changes from one course-section to another having different beginning or ending dates, consult the university *Schedule of Classes* published in advance of each term.

A *Change of Elections (Drop/Add) Form* will be considered effective on the day it is received in the Registration Office. If a Change of Elections (Drop/Add) Form is duly authorized/completed and sent by mail, the postmark date will be considered the effective date, if legible, for the purpose of adjusting tuition. Saturday and Sunday postal cancellations are accepted as effective the preceding Friday. The date of receipt will be used when the postmark date is illegible.

Special Tuition Assessment Adjustments: The Registrar is authorized to make certain adjustments in the application of the tuition payment policy stated above when, in his/her judgment, unusual circumstances warrant such action. Circumstances which may warrant special consideration include the death or extreme personal illness of the student. A student who wishes to have his/her request reviewed for special consideration should submit a written application with supporting documentation to the Registrar before the conclusion of the term in which special consideration is sought.

Student Records

University Grading System

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

- A *Outstanding* 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 used 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 mark 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 used in the calculation of the honor point average.

In graduate study, 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, School of Medicine: This grading system does not apply to Law School students or students in the four year M.D. program of the School of Medicine.

Graduate Marks

- F *Failure* See note above.
- I *Incomplete* See below for explanation of this mark.
- R *Repeated* (Applies to undergraduate students only.)
- 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 either an undergraduate or a graduate student when he or she has not completed all the course work as planned for the semester and when there is, in the judgment of the instructor, a *reasonable* probability that the student can complete the course successfully without *again attending regular class sessions*. The responsibility for completing all course work rests wholly with the student. The mark of 'I' will be changed to a grade *only* when the student completes the course work as arranged with the instructor or, if the instructor has left the University, with the chairperson of the department or other instructional unit. (The mark of 'I' shall not be changed to an 'F' unless, after receiving the 'I', the student's subsequent work is of such quality that the overall average for the course is below passing.) Work must be completed within one calendar year.

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 will be changed to W, and the student will be assessed tuition and applicable fees for the second registration.

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 'W'—**Official Withdrawal**, is given when the withdrawal is reported to the Registration Office in writing, in accordance with the policy on withdrawals and changes of program. A mark of unofficial withdrawal ('X') may not be changed to a 'W,' see Withdrawals below, page 21.

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 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 the written permission of his/her dean or the dean's representative.

Changes of Grade and Mark

Once recorded in the Office of the Registrar, grades/marks (except 'Y') 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 a numerical index of the student's scholastic average. Points are assigned to each letter grade (see University Grading System, page 19) 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, basic training credit for veterans, courses with a mark of 'W' or 'X,' and courses in which a grade of 'S,' 'U,' 'M,' 'P,' or 'N' have been received.

At the undergraduate level, courses repeated are computed in the honor point average according to the procedure given on page 21 on 'Repeating Courses'.

At the graduate level: See page 21 (Repeating Courses) for the policy on honor points for repeated courses.

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.

Academic Procedures

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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. A formal written application must be approved by the Dean of the college or school in which the student is enrolled and be submitted to the Registration Office for the course;
3. A student is not permitted to take quizzes and examinations in audited courses;
4. A student normally may not change from or to 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 Change of Elections (Drop/Add) Form indicating the desired change.

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

Dual Elections

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 and by the professor teaching the course. This petition must be accepted by the Graduate School before the first meeting of the course. The approved petition must be presented at the time of registration.

With Undergraduate Schools: Graduate students may take undergraduate courses to be posted in 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.

Under the Senior Rule: A student in his/her senior year, who has a good academic record and who desires to earn a limited number of graduate credits, may receive, in his/her final semester, a temporary admission for one semester only to the Graduate School. For further information, see Senior Rule Admission, page 14.

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 his/her own college and also the approval of the dean of his/her college prior to doing so. The election must also be approved by the department of the college which offers the course. Students desiring to participate in Wayne State University-University of Michigan dual elections should obtain the necessary forms from the Registrar and pay the appropriate tuition at their home institution.

Repeating Courses

If a student in post-bachelor status 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, Room 150, Administrative Services Building.

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 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, Withdrawal and Changes of Program

Registration: Each student, except those in the annual medical program, is required to register at the beginning of each term of attendance 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*, available at the Registration Office.

Students wishing graduate credit are cautioned NOT to register 'post-bachelor.' This is an undergraduate classification in which graduate credit may NOT be earned.

Registering and Adding Classes: A student may not attend any class in which he/she is not officially registered. A student may register for courses through the last day of the second week of classes for fifteen-week courses. The tuition and/or fee payment required in advance of registration is dependent upon the date registration is completed. Students are urged to consult the University *Schedule of Classes*, published in advance of each term, for specific regulations pertaining to registration and the payment of tuition and fees.

A registered student may add a course through the last day of the fourth week of classes by submitting a completed Change of Elections (Drop/Add) Form to the Registration Office by the prescribed time. The Change of Elections Form must include the academic approval(s) specified in the *Schedule of Classes* published in advance of each term.

A \$10.00 Change of Elections (Drop/Add) Fee is assessed any student who files a Change of Elections Form after the second week of classes that increases the number of credits scheduled. A student may not change from one section of a course to another section of the same course after the fourth week of classes. Change of Elections (Drop/Add) Forms will be valid for ten calendar days from the date of the earliest signature of approval.

In courses other than those meeting for fifteen weeks, the above rules apply proportionately to the length of the course. The Registrar may approve exceptions to these policies when warranted by extenuating circumstances beyond the control of the student.

Withdrawals: Through the last day of the fourth week of fifteen-week classes, any student may withdraw from any class by notifying the Registration Office in writing. He/she may either make out and sign a Change of Elections (Drop/Add) Form and deliver it to the Registration Office, or write a letter specifying the class or classes to be dropped. The notice must be received in the Registration Office by the last day of the fourth week of classes. It is strongly recommended that students consult with the instructor about options before dropping a class after the second week of classes. The College of Pharmacy and Allied Health Professions requires approval of instructor and adviser to drop a course after the end of the second week of classes.

If a student files a formal withdrawal for a course not later than the last day of the fourth week of classes, that course will not appear on his/her record. The record of the student who has formally withdrawn from all of his/her courses by that date will bear the notation, 'complete withdrawal', for the semester. After the fourth week of classes, a mark of 'W', which will appear on the student's academic record, is assigned for each course from which the student withdraws.

If a student wishes to withdraw from a class after the end of the fourth week and through the twelfth week, he/she must seek the instructor's written approval. Notice of withdrawal reaching the Registration Office after Friday of the fourth week of classes, without the instructor's signature, will not be accepted. A student who wishes to

withdraw from a course or courses after Friday of the twelfth week must obtain the written approval of his/her instructor and Dean.

A student may not change from one section of a course to another section of that course after the fourth week of classes. A student may not drop any courses after the last day of the last week of classes, or, when the calendar includes study days, the last study day. A student may not drop any course for which a grade has been earned.

In courses other than those meeting fifteen weeks, the above rules apply proportionately to the length of the course. Drop/Add (Change of Elections) forms will be valid for ten days from the date of the earliest signature of approval. The Registrar may approve exceptions to these policies when warranted by extenuating circumstances beyond the control of the student. See the sections on Marks (page 19) and Fees (page 16) for additional information.

Advanced Credit 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. *A minimum grade of 'B' must be earned and 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 advanced credit 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 written permission of the Graduate School. Master's students must obtain the written permission of their college Graduate Officer.

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 Students Electing Undergraduate Courses: A graduate student pursuing a teaching certificate and a graduate degree simultaneously should plan a program with both advisers. For information concerning registration for both types of credit, consult the *Schedule of Classes* which may be obtained at the Registration Office.

Graduate Credits

Major credits: credits earned in the student's major field are designated as major credits. The dissertation, thesis, the 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-credit is not acceptable for transfer. Transfer credits must be appropriate to the student's degree program and may not be used to reduce the minimum degree requirement of thirty residence credits (excluding dissertation direction). 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.

College of Engineering: A maximum of six semester credits may be transferred toward a Master's Degree from other 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 during each semester that he/she uses facilities or receives advisory services of the University 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

All 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 adhere to the following policies concerning written work and grades:
 - (a) grade and return written work promptly;
 - (b) submit final grades by the scheduled time;
 - (c) allow students to examine written materials not returned within the semester (e.g., final examination, major term paper) and retain such materials for one academic semester in accordance with unit policy;
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 fulfill conscientiously all assignments and requirements of their courses;
2. To attend classes regularly and punctually;
3. To maintain a scholarly, courteous demeanor in class;
4. To uphold academic honesty in all activities;
5. To notify the instructor as early as possible if prevented from keeping an appointment or carrying out an assignment;

6. To discuss with the instructor any class-related problem and follow established procedures in the resolution of these problems;

7. 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 Ombudsman is not a direct part of the appeal process, students and faculty may consult the Ombudsman at any point during such proceedings.

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.

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 19.

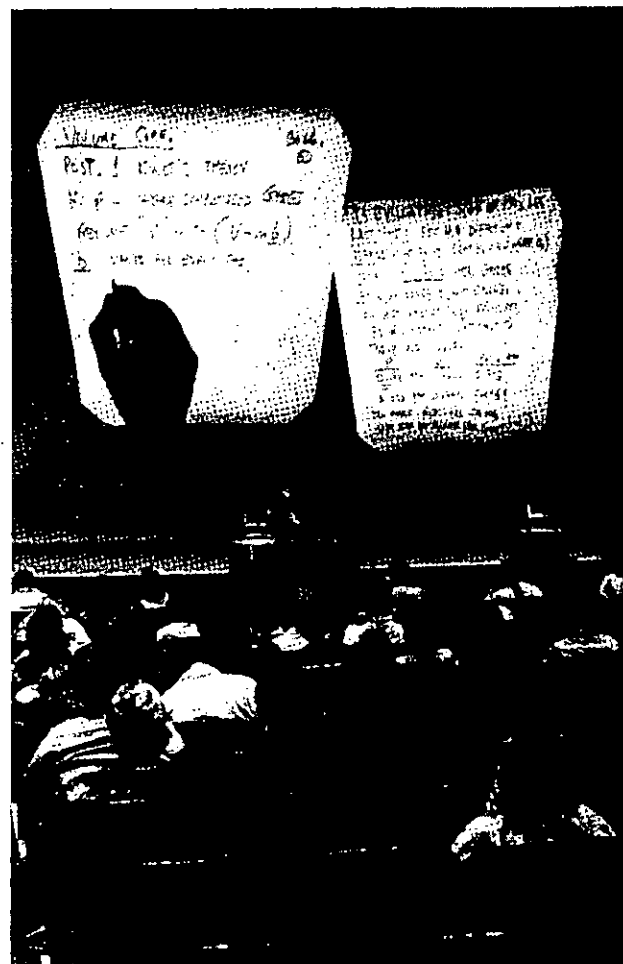
Student Ethics

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

Graduate 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 graduate-credit study or research of a student who is also a close relative. Concomitantly, graduate students are not to take graduate-level 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 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 after completion of forty graduate credits (including Master's degree work).
2. *Report of Oral Qualifying Examination (Examiner assigned by Graduate School)*: Filed by the department within one month after written exam.
3. *Dissertation Outline*: 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, one week before dissertation defense.*
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.

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).

*The last day for the dissertation defense is determined each semester. Check with the Graduate School for Commencement deadlines.

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) thirty credits of dissertation direction; and
- (3) forty credits of coursework, pre-dissertation research and directed study distributed over the major and one or two minors.

The Ph.D. program should provide for effective concentration in a major field with supporting courses in related fields. At least one minor composed of eight or more credits must be elected outside the major department but in a related field. 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 one'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. Following departmental approval, all four copies are forwarded to the Graduate School for the Dean's approval and distribution.

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.*

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.

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; proposals to span more than two departments, or to include a department which does not offer the Ph.D. degree, will require the additional approval of the Graduate Council. 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, 352 Mackenzie Hall.

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. 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 successfully 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 dissertation shall be formally presented in a lecture in which the candidate shall state the methodology, research, and results of the investigation. Conducted by the candidate's committee and presided over by the Graduate Examiner, this final lecture shall be publicized to the entire academic community in advance by the major department. In the discussion following the presentation of a dissertation lecture, other matters which the committee deems relevant may be introduced. The Dissertation Public Lecture Presentation is open to the general University community.

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.

GS oral ex

(2 day hour)

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 style 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 style 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	
Business Administration	577-4510	
Business Economics	577-4520	
Finance	577-4520	
Marketing	577-4525	
Administrative Science	577-4515	
Management	577-4515	

College of Education

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	577-1728	
Educational Psychology	577-1614	577-1614
Educational Sociology	577-1743	577-1743
Elementary Education	577-1615	577-1615
English Education - Secondary	577-0964	
Evaluation and Research	577-1614	577-1614
Foreign Language - Secondary	577-0945	
General Administration and Supervision		577-1729
General Education - Humanities		577-1600
General Education - Physical Science		577-1600
General Education - Social Science		577-1600
Health Education	577-4249	
Higher Education	577-1730	
History and Philosophy of Education	577-1743	577-1743
Instructional Technology	577-1728	577-1728
Mathematics	577-0985/577-0937	577-0985
Physical Education	577-4249	
Pre-School and Parent Education	577-0918/577-0991	
Reading	577-1615	577-1615
Recreational and Parks Services	577-4269	
School and Community Psychology	577-1666	
School Music	577-2622/577-2676	
Science - Secondary	577-1661	
Secondary Curriculum and Instruction	577-1600	
Social Studies - Secondary	577-0909	
Special Education	577-0902/577-0977	577-0902
Sport Administration	577-4269	
Teacher Education		577-1600
Vocational and Applied Arts	577-0946/577-0986	577-0946
Vocational Rehabilitation	577-1617	

College of Engineering

Chemical	577-3800	577-3800
Civil	577-3789	577-3789
Computer	577-3920	577-3920
Electrical	577-3920	577-3920
Electronics and Computer Control Systems	577-3920	
Industrial and Operations Research	577-3821	577-3821
Mechanical	577-3845	577-3845
Metallurgical	577-3845	577-3800

Call up the prof here. This is the number.

COLLEGE and MAJOR	M.S./M.A.	Ph.D.
<i>Fine and Performing Arts</i>		
Art	577-2985	
Dance	577-4273	
Music	577-1795	
Theatre	577-3508	577-3508
<i>Graduate School</i>		
Archival Administration	577-4003	
Industrial Relations	577-4380	
Interdisciplinary		577-2170
Library Science	577-1825	
<i>Law School</i>		
Corporate and Finance Law	577-3930	
Labor Law	577-3930	
Medical Jurisprudence	577-3930	
Tax Law	577-3930	
<i>College of Liberal Arts</i>		
Anthropology	577-2935	577-2935
Audiology	577-1393	577-1393
Biology	577-2899	577-2899
Chemistry	577-2844	577-2844
Classics	577-3032	
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	
Geography	577-2701	
Geology	577-2506	
German	577-3002	
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	
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	
Speech Communication	577-2943	577-2943
Urban Planning	577-2701	
Library Science	577-1825	

COLLEGE and MAJOR	M.S./M.A.	Ph.D.
<i>School of Medicine</i>		
Anatomy	577-1061	577-1061
Biochemistry	577-1511	577-1511
Community Health Services	577-1033	
Immunology and Microbiology	577-1591	577-1591
Pathology		577-1102
Pharmacology	577-1580	577-1580
Physiology	577-1520	577-1520
Psychiatry	577-5298	
Radiological Health	745-9175	
Radiological Physics	745-3460	
<i>College of Nursing</i>		
Adult Psychiatric - Mental Health	577-4084	
Child and Adolescent Psychiatric - Mental Health	577-4084	
Community Health	577-4804	
Institutional Epidemiology	577-4804	
Medical Surgical Nursing - Advanced	577-4804	
Nursing		577-4138
Nursing, Parenting and Families	577-4804	
Primary Care Nursing - Adult	577-4084	
<i>College of Pharmacy and Allied Health</i>		
Anesthesia	745-3610	
Clinical Pharmacy	577-0824	
Hospital Pharmacy	745-4025	
Medical Technology	577-1368	
Medical Chemistry	577-3763	
Occupational and Environmental Health	577-1210	
Occupational Therapy	577-1435	
Pharmaceutical Administration	577-0823	
Pharmaceutical Sciences		577-1737
Pharmaceutics	577-1064	
Pharmacology	577-0813	
<i>School of Social Work</i>		
Master of Social Work	577-4409	

Graduate Directory

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

Graduate School

Ph.D. Programs
Fellowships and Scholarships
352 Mackenzie Hall
Telephone: 577-2170

Graduate Admission

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

Graduate Assistantships

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

International Student Advising

International Student Services and Activities
470 Mackenzie Hall
Telephone: 577-3422

Loans

Office of Scholarships and Financial Aids
222 Administrative Services Building
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

The following is a description of major sources of financial support for graduate students. Interested students are invited to contact the Scholarships and Fellowships Office of the Graduate School, 352 Mackenzie Hall (577-2170); for further information, see page 41.

Thomas C. Rumble University Graduate Fellowship: This fellowship supports doctoral students judged to be exceptionally qualified by the University Graduate Fellowship Selection Committee. The applicant may be either entering a doctoral program or already engaged in a course of graduate study leading to the doctorate. The applicant should be an outstanding student with clearly defined objectives relevant to his/her area of specialization. The Fellowship award includes a stipend, currently \$5500, 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 doctoral study and full-time enrollment. Information concerning the competition deadline date and application forms are available from the Scholarships and Fellowships Office of the Graduate School.

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.

Graduate-Professional Scholarships: Each year the University awards a number of competitive tuition scholarships for students in graduate or professional degree programs. Awards are contingent upon the student's acceptance in a graduate or professional degree program. Information concerning competition deadline dates and application forms are available from the Scholarships and Fellowships 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.

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, 5229 Cass Avenue.

Departmental Awards: Assistantships, fellowships and scholarships are available in many graduate departments. Information concerning these may be obtained by writing to the Chairperson of the department in which the student desires to major.

Date of Acceptance or Appointments: 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 15th, 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 15th commits him/her not to accept another appointment without first obtaining formal release for that purpose.*

Information about the programs listed below may be obtained by contacting the Office of Scholarships and Financial Aids, Room 222, Administrative Services Building:

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

Perkins Student Loan Program: The University participates in the Federal National Direct Student Loan Program amended by the Higher Education Act of 1972. Preference is given to students with exceptional need and priority is given to full-time graduate students (those registered for eight credits per term). Students may borrow up to a maximum of \$4,500 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 effort.

Guaranteed Student Loans (GSL): Loans for eligible students of demonstrable need may range up to \$7,500 and must be arranged through commercial lending institutions such as banks, credit unions, savings and loan associations; repayment and simple interest charges are initiated six months after graduation or termination of academic effort. 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) on file before the GSL can be processed.

Michigan Direct Student Loan Program: This is an alternate source of loan assistance for eligible students unable to secure traditional loans through a commercial lender. These loans may assist in meeting up to half the cost of the student's educational expense and are need-based. Conditions are the same as for a GSL (see above).

PLUS/SLS Loan Program: These loans provide additional funds for educational expenses, and are made by a lender, such as a bank, credit union, or savings and loan association. PLUS loans enable a parent to borrow up to \$4,000 per year, to a total of \$20,000, for each child who is enrolled at least half-time and is a dependent student. SLS loans enable graduate students and independent undergraduates to borrow up to \$4,000 per year to a total of \$20,000. This amount is in addition to the GSL limits (see above).

Graduate Student Travel/Research Fund: Students requesting these funds from the Graduate School must indicate the reason for travel/research and the proposed expenses. Supporting letters/documents should be submitted by the student's adviser and/or department chairperson indicating financial support and the dollar amount of that support by the department. Priority is given to students who are first authors of papers to be presented at major conferences and are receiving some travel support from their department. There are also funds available to aid students with unusual dissertation research expenses.

Library Searches for Graduate Students The Graduate School provides funds for currently enrolled students engaged in research for their graduate degrees. The library issues forms to students which must be signed by an adviser or graduate officer before being forwarded to the Graduate School for approval.

Advising for Fulbright Scholarship and Marshall Scholar Applicants: The Graduate School maintains an up-to-date file of information and applications for graduate study abroad. Undergraduate and graduate students are required to consult with the Graduate School and to submit their applications to the campus screening committee.

INDUSTRIAL RELATIONS

Office: 5165 Gullen Mail at Merrick

Director: Irving Bluestone

This graduate program provides a curriculum leading to the M.A. degree in Industrial Relations (MAIR). Because MAIR is inter-college, as well as interdisciplinary, it is administered by the Graduate School.

MAIR is jointly sponsored by three academic departments: Economics and Psychology in the College of Liberal Arts, and Management in the School of Business Administration. Policy direction is provided by an Executive 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 intends to assist in the appropriate job placement of its graduates. MAIR will also provide knowledge and skills for persons who contemplate entering or who are already engaged in self-employment involving industrial relations, such as labor arbitration.

Admission

Admission 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 four recommendation forms 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 Executive 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 ECO 410 and FBE 540); introductory micro- and macroeconomics (such as Economics 101 and 102 or Finance and Business Economics 608); and one course in college mathematics (equivalent to at least Mathematics 150). A grade of 'C' or better is required for all prerequisite courses.

Curriculum

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: 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. Psychology of Union-Management Relations (PSY 656)
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 the *Essay* to be completed under Plan B must have the prior approval of the Director, who must also approve the appointment of the faculty member who will direct the Essay.

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 Executive 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 Program Request forms will be done by the Director. Students should call the MAIR Office (577-4380) for information on advising hours.

COURSES OF INSTRUCTION¹ (I R)

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. (Y)

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,W)

790. Directed Study. Cr. 1-3 (Max. 4)

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 hours 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)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

University Centers and Institutes

Center for Black Studies

586 Student Center

The Center for Black Studies grew out of the struggles of black students to establish an educational facility committed to filling the serious omissions in knowledge about the black experience. Since its inception in 1972, the Center has combined teaching, research, and service in an effort to enhance the quality of life for students and all residents in the urban environment of Wayne State University.

The Center has assumed the position of an educational catalyst, seeking to play a dramatic role in the growth and development of black people both in America and abroad. As one means of attaining these goals, the Center currently offers an academically substantive and politically relevant co-major curriculum at the undergraduate level. Complete information concerning this program, as well as black studies course offerings, may be found in the undergraduate Bulletin.

Center for Chicano-Boricua Studies

300 Criminal Justice Building

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

Teaching: The Center's academic component consists of the freshman year program, and the CBS Co-Major program. The freshman program extends equal educational opportunity to Latino high school students in the Detroit metropolitan area and offers a curriculum which is socially and intellectually directed to the Latino experience in the United States. The CBS Co-Major program is designed particularly for students who plan to work with Latino communities.

Research: The Center's research effort is in education and the social sciences as they relate to Spanish origin groups in the United States.

Service: The Center serves both the University and the Latino community. Center personnel sit on various local and state committees, task forces and commissions concerned with the Spanish speaking community.

Institute of Chemical Toxicology

Technological advances of the past several decades have significantly improved standards of living, but at the same time a large segment of the population has been and is being exposed to a myriad of chemicals. Such exposure has produced adverse short-range and long-range effects on the health of humans and animals. The Institute of Chemical Toxicology (ICT) at Wayne State University is interdisciplinary in character and addresses some of the fundamental issues raised by the action of toxic chemicals. In addition to its research activity, ICT develops and participates in information and educational activities, so that both employer and employees can be made aware of the adverse effects of chemicals in the workplace. Research at ICT involves the development of new technologies and procedures for toxic substance control and management. The Institute is supported by the University's Research Excellence and Economic Development Fund.

Computing Services Center

5925 Woodward Avenue

The University operates one of the largest computing centers in the Detroit metropolitan area. The Computing Services Center (CSC) is a modern facility dedicated to the service of all university students, faculty, staff and public sector users.

The CSC manages three large mainframes: one IBM 3081GX with 32 megabytes of main memory; one IBM4381 with sixteen megabytes of main memory; and one Amdahl 470V/8 with sixteen megabytes of main memory. The major operating systems are the Michigan Terminal System (MTS), IBM's Multiple Virtual Storage (MVS) and Conversational Monitor System (CMS). All systems run under IBM's Virtual Machine (VM) Operating System. MTS is a general purpose time-sharing system providing a rich command language and a powerful editor. MTS supports the needs of students and the research requirements of graduate students and faculty. MVS is a standard IBM operating system which supports the administrative data processing needs of the University and certain external users. On-line administrative systems run under IBM's Custom Information Control System (CICS). CMS is a standard IBM time-sharing operation system used for programming applications and office automation. CMS is used by both academic and administrative users. Many application programs extend the capabilities of the operating systems. These include statistical and mathematical libraries, graphics, data base management systems and text processing languages. Compilers are available for most programming languages.

Several user areas are located on campus and throughout metropolitan Detroit to allow easy access to the University's central computers. A user area with public terminals and microcomputers is located at the Computing Services Center at 5925 Woodward; this location also contains the documentation library, consulting and billing offices, and output distribution window. Remote service sites are located on campus in the Science Library, the Student Center Building, and the Engineering Building. Off-campus terminal sites operated by the College of Lifelong Learning are located at:

Birmingham Center
20500 W. 13 Mile Road
Room A46
Birmingham, Michigan
577-3605, 642-2661
SCP Access: 258-6811

Northwest Activities Center
18100 Meyers Road
Detroit, Michigan
577-2937

Downriver Center
15100 Northline
Room 200
Southgate, Michigan
577-4680, 284-5535
SCP Access: 283-8822

Southfield Center
25610 W. 11 Mile Road
Southfield, Michigan
577-3590, 358-2104
SCP Access: 827-7600

Eastside Center
3127 East Canfield
Detroit, Michigan
577-4701

Sterling Heights Center
37400 Dodge Park
Sterling Heights, Michigan
577-4470, 978-7881
SCP Access: 939-3370

Northeast Center
22860 Schroeder
East Detroit, Michigan
577-3590, 771-3730

Public terminals may be used by anyone having a valid CSC computer identification. Students, faculty, and staff may also connect their personal terminal or microcomputer to the University computers

through a standard phone call.

Several specialized output devices are attached to the mainframe computers. A four-pen, 36-inch plotter is available for producing high-resolution color graphics. The University's computerized typesetter is used extensively for newsletters, books, journal articles, and dissertations. The CSC's two high-speed laser printers also produce very high-quality output at low cost. Laser printers are the standard printers used at the CSC. Over 1.5 million 8-1/2 x 11 inch pages are printed per month:

The mainframes, software, and specialized output devices are only part of computing at the University. Minicomputers and microcomputers are used campus-wide for research and training. The CSC provides software and consulting support for small machines. It also provides communication support to transfer information between these machines and the mainframes.

The Merit Computer Network connects the University computers to the computing facilities of the University of Michigan (an Amdahl 5860) and of Michigan State University (a CDC 6500). The Merit Computer Network also provides Telenet access from most major cities of the United States, Canada, Europe and Japan; any computer belonging to the Merit Network can be accessed from these cities through a local telephone call.

Users of the CSC are encouraged to use the facilities themselves. The required skills may be learned through courses taught by various departments, including Computer Science, and through free, non-credit seminars offered each semester by the CSC. The CSC operates a telephone consulting service from 9 a.m. to 5 p.m. weekdays and also operates a network control center twenty-four hours per day, seven days per week. Various publications describe the use of CSC programs and systems. Copies of these publications are available for public use at the central and remote service sites. Personal copies may be purchased through the University bookstore. A bi-monthly newsletter keeps users informed of additions and changes in services.

Any WSU undergraduate or graduate student can obtain an MTS computer account at special student rates by applying to the CSC. Accounts are also available during registration. The first \$10.00 of computing is free to all students. Accounts remain active until the student leaves the University.

Institute of Gerontology

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 Specialist Certificate in Aging.

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: The service program of the Institute is designed to meet certain needs not provided for by other agencies. Institute staff serves in an advisory or consultative capacity to local, state and national agencies and organizations concerned with aging and the aged. The Institute also compiles, publishes and distributes *Information on Aging*, a periodic newsletter containing information on events related to the aged such as new and proposed legislation, public programs and community services.

Specialist Certificate in Aging

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13. Eligibility for the Specialist 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 should be made directly to the Institute.

CERTIFICATE REQUIREMENTS include completion of twelve credits in a required course sequence in gerontology, attendance at the Institute-sponsored gerontology colloquia series and a three credit supervised internship. 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, communication and theatre, family and consumer resources. All candidates must complete BIO 575, Biology of Aging (three credits), and one course from each of the following three groups:

<i>I. Psycho-Social Aspects of Aging</i>	<i>Credits</i>
• CED 673 — Counseling of Special Populations: Adults.....	2-6
NUR 741 — Psychological Aspects of the Aged.....	3
PSY 549 — The Aging Individual in Society.....	3
PSY 748 — Psychological Development in the Adult Years.....	3
PSY 749 — Developmental Psychology of Later Life.....	3
SOC 576 — Society and Aging.....	3
<i>II. Public Policy Regarding the Aged</i>	
P S 544 — Politics of the Elderly.....	4
P S 744 — Public Policy and the Aged.....	3
SW 572 — Social Welfare Policy: Services for the Aged.....	3
<i>III. Electives</i>	
ECO 547 — Economics of Aging.....	4
H E 565 — Health and the Aging Process.....	3
NUR 740 — Gerontological Nursing.....	3
NUR 742 — Research in Gerontological Nursing.....	2
P T 500 — Therapeutic Principles and Procedures in Geriatrics.....	3
P S 643 — Politics and Administration of Entitlement Programs.....	3
P S 732 — Health Care Policy.....	3
P S 746 — Policy Analysis and Program Evaluation.....	3
PSY 649 — Psychology of Death, Dying, and Lethal Behavior.....	3
• PSY 876 — Neuropsychology of Aging.....	2
R P 565 — Recreation Services for the Aged.....	3
SOC 677 — Sociology of Institutional Care.....	3

Center for Health Research

315 Cohn Building

The Center facilitates, supports and coordinates research activities in the College of Nursing for humanistic and scientific investigations related to care, health and environmental contexts of nursing phenomena. Some current nursing research investigations include self-care, transcultural care, personalized care, teenage pregnancies, smoking behaviors, oncology care, parent-child care, adolescent self-care, stress and mental health, nursing staff patterns, female drug dependency, economics of nursing care, and advocacy care. Students in the College of Nursing participate with faculty in ongoing research, and the Center brings outstanding nurse researchers to the College to share their discoveries.

* These courses are part of a sequence of topics offered under the same course number, however, only the course topic cited in this list is applicable to the Specialist Certificate.

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; and on strategies for enhancing product reliability. 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 to the materials work in the Institute include a variety of lasers and ion-beam sources (including a 4.75 Van de Graaff accelerator), an infrared imaging system, a scanning tunneling microscope, a wide variety of magnetometers and calorimeters, and a Flowing Afterglow Chemical Vapor Deposition system. Software development is supported by a VAX 780/UNIX Berkeley 4.2 computer, a twelve-station network of SUN-3 Workstations, connected by Ethernet to the VAX, a nine-station network of Micro-VAX II Workstations, also connected by Ethernet to the VAX, a network of twenty IBM PC-compatible personal computers, a variety of expert system software and hardware packages, the College of Engineering's extensive computer graphics and design laboratory, and the University's Amdahl 470/VA.

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.

Graduate 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 13.

Certificate Requirements: 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.

Molecular Biology Center

The goal of the Molecular Biology center is to facilitate and enhance molecular biology research throughout the University. The Center involves research programs in the medical, biological and chemical sciences with faculty in all of these areas participating. A principle area of interest is the application of the basic research to understanding and treating human diseases. Four broad research projects have been defined:

1. **Gene Structure and Function:** Research on the structure and functions of genes in controlling cell proliferation, division, differentiation, and development and the modification of animal, plant and bacterial genes.

2. **Organization of the Human Genome:** The use of recombinant DNA technology to locate and characterize genes responsible for human disease.

3. **Synthesis and Analytical Characterization of New Products:** The custom synthesis and characterization of specific oligonucleotides

followed by synthesis of specific polypeptide:

4. *Protein Structure and Function:* Use of molecular methods to identify domains of proteins critical for particular functions.

An important aspect of the work of the Molecular Biology Center is to aid the development of biotechnology industry in the State of Michigan. Toward this end the Center will work closely with existing State industries, will aid in establishing new ones, and will aggressively seek new products of commercial value.

Center for Peace and Conflict Studies

5229 Cass Avenue

The Center for Peace and Conflict Studies provides programs devoted to the resolution of conflict in all contexts, from the local community to the international system. Under the direction of an interdisciplinary executive committee, projects are developed that contribute to the exploration of the social and political problems of our time. The Center serves as the base for an undergraduate co-major in peace and conflict studies.

Detroit Council for World Affairs: The Council is the community arm of the Center for Peace and Conflict Studies and presents activities for adults 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.

Research Centers

Opportunities exist at both the graduate and advanced undergraduate level for students to participate in the programs of the research centers.

The Research Institute for Engineering Students promotes fundamental multi-disciplinary research programs in science and engineering. This Institute provides a vehicle by which researchers from different departments of different schools and colleges within the University can collaborate on research projects with the assistance of graduate students of any department in the College of Engineering. Some current research programs include fundamental studies on molecular interactions using molecular beams, laser-driven chemical reactions, studies of the non-equilibrium chemical dynamics of atmospheric and combustion systems, advanced computer applications in control and system prognosis, and advanced mathematical, numerical and graphical techniques for the solution of complex engineering problems.

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, 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.

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 Urban Studies

5229 Cass Avenue

The Center for Urban Studies is an interdisciplinary research, training and service organization focusing on contemporary society. The Center's major activities are: (1) research and evaluation in a number of areas related to urban issues, and (2) 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 four 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; and (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. The Center features variety and flexibility in its encouragement of cooperative efforts in urban studies.

UNIVERSITY STUDENT SERVICES

OFFICE OF THE VICE PRESIDENT FOR STUDENT AFFAIRS

573 Student Center; 577-1992

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. 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 Admissions

116 Administrative Services Building II; 577-3577

The Office of Admissions has the primary function of locating, recruiting, and admitting new students to the University. The Office also helps to coordinate the recruitment activities of individual departments, alumni groups, and students; it organizes visits to local high schools and community colleges and develops programs for community groups. Services offered to students include walk-in advising, and visa processing for foreign applicants.

Office of the Registrar

165 Administrative Services Building; 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 Registrar's Office coordinates, supplements and facilitates the activities of the faculty responsible for the implementation of 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: Central Records, Registration, and Room Scheduling. Central Records is responsible for maintaining permanent academic records, graduation processing, issuance of transcripts, student's grades and certifications. The Registration Office is responsible for determining residency status for purposes of computing tuition, processing student's registrations and Drop/Add Forms, and the accurate assessment of tuition and fees. Room Scheduling is responsible for the preparation of the *Schedule of Classes*, assigning classrooms, student enrollment reporting, and athletic eligibility determination.

University Advising Center

242 Mackenzie Hall; 577-2680

The University Advising Center provides academic advising to all students with undeclared majors and to some pre-professional students. The Center is staffed by ten professional advisers supplemented by advanced undergraduate and graduate peer advisers. The major responsibilities and services provided by the University Advising Center include:

Program Advising helps students choose a program of courses designed to fulfill the requirements of their academic program. Courses are suggested and discussed in connection with student's intended academic goals. Advisers are fully informed on degree requirements including group requirements, restrictions on credits, transfer credit, and residency. Advisers monitor the progress of students toward the completion of college and university requirements for graduation.

Curriculum Advising helps students identify the various options and curricula they may employ to achieve particular academic and/or career goals.

Academic Deficiency Advising: Students whose honor point average falls below 2.0 and who are placed on academic probation are urged to discuss their situation with an academic adviser. Advisers counsel probationary students in order that they may better their academic situation. Referrals may be made to other university services where students can find assistance for specific problems or difficulties.

Pre-Professional Advising: Advisers assist students in planning programs which will fulfill requirements for admission to the various professional programs offered by Wayne State University, including those at the School of Business Administration, the College of Education, the College of Nursing, the Faculty of Pharmacy, and the Departments of Physical Therapy, Radiation Therapy, and Mortuary Science.

Health-Careers Advising: Students in pre-medical, pre-dental, pre-osteopathic and pre-veterinary medicine curricula are advised on procedures for applying to post-baccalaureate institutions. Letters of recommendation are sent to professional schools as requested by the student.

Study Abroad Resource Center: Books, brochures, catalogs and advising on academic and travel/study programs in foreign countries are available at the Resource Center, including information on Wayne State's thirteen foreign-study programs and other programs sponsored by American and foreign institutions. Course credit is available on approval for many foreign study programs; credit approval usually must be obtained before entering a foreign study program.

University Orientation Program: A university-wide orientation program, 'Wayne State and You' (WS&U), is offered for entering freshmen during the summer semester. Students learn about university programs and services, receive academic advising, and register for fall semester classes during the one-day program. A Transfer Student Orientation is offered at the beginning of the fall and

winter Semesters.

Student Handbook: Perspectives, the student handbook is published annually for new and continuing students. This book includes information about university programs, policies, procedures, and services as well as activities in the campus area.

University Counseling Services

334 Mackenzie Hall; 577-3398

University Counseling Services have 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 administrators 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.

Achievement Center, 112 State Hall, 577-3398, 577-3491: The Achievement Center is a multi-media 'walk-in' service for students who find an immediate need to improve or refine their academic skills. Mini-workshops are presented daily during fall and winter terms on such topics as test anxiety, note-taking skills, reading, writing, memory improvement and achievement motivation. In addition, individualized help is provided to deal with the wide range of problems which students confront in the University curriculum.

Educational Resources for Students with Disabilities, 450 Mackenzie Hall, 577-2006, TDD only 577-3365: Through this office numerous resources are available to students with physical or perceptual impairments. Services are designed to equalize opportunities for the full participation of students throughout the campus. Resources include pre-admission counseling, orientation to the campus, information about campus accessibility, consultation regarding methods of managing academic coursework and examinations, reading and recording services, interpreters, notetakers, technical aids, study rooms, emergency wheelchair service, alternate testing arrangements, campus transportation, parking, referrals and advocacy, and information for staff and faculty. Students are invited to contact the Office regarding questions related to their individual situations.

Life Career Development Laboratory, 340 Mackenzie Hall, 577-3398: The Laboratory is a 'walk-in' service which offers students consultation, testing and other activities to increase their self-awareness, their background of relevant occupational and curricular information and their decision-making skills so that they can more realistically evaluate potential career and educational direction.

Minority Programs, 428 Mackenzie Hall, 577-2006: Minority Programs and the Minority Resource Center provide individualized personal counseling and advising, role modeling and networking, workshops, seminars, discussions, newsletters, intercultural exchange, graduate and professional school information, and conferences. Activities are oriented to the needs and concerns of minorities; participation is open to everyone.

Psychological and Counseling Services, 334 Mackenzie Hall, 577-3398: These services provide students with special opportunities for consultation about needs or concerns for which highly individualized help is desired. Any facet of experience which affects a student's educational progress may be explored with members of the counseling staff. Counseling may help students to clarify for themselves their own identity and relationship with the educational and occupational

world, to explore opportunities for development, to set and realize goals and to resolve motivational and other personal conflicts. In addition to confidential private consultation, a number of group counseling programs are offered.

Reading and Study Skills, 456 Mackenzie Hall, 577-3398: 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. Service is provided through non-credit courses (see the Undergraduate Bulletin) and individualized laboratory experiences or through programs coordinated with academic departments or special University programs.

Re-Entry to Education Program, 423 Mackenzie Hall, 577-2006: This program offers workshops, programs, and support services to day and evening students. Services and programs are designed to meet the needs of students who have interrupted their education and are now pursuing a degree at either the undergraduate or graduate level.

Testing and Evaluation, 343 Mackenzie Hall, 577-3400: Testing is provided to students for entrance examinations, freshmen tests, qualifying examinations for course selection and tests required by professional associations and graduate schools. Testing and Evaluation services are also provided to faculty and academic personnel and include preparation of class reports based on Scholastic Aptitude Test or qualifying examination data, consultation regarding test programs commercially available, consultation on construction of course examinations, scoring of departmental examinations and student course evaluations. Research studies are undertaken to provide background data for planning adequate services and other resources for the student body.

Women's Resource Center and Program, 423 Mackenzie Hall, 577-2006: This office provides services for University students, faculty, 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

470 Mackenzie Hall; 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.

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

5743 Mackenzie Hall; 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 with cumulative h.p.a.'s below these minima 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 the service-disabled veterans to select, prepare for, and secure work that is in line with the veteran's 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 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

1st Floor, Mackenzie Hall; 577-3390

University Placement Services provide help to students and alumni in defining career and employment goals and assist 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.

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.

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.

Special Student Service Programs (TRIO)

488 Mackenzie Hall; 577-1934

The primary function of this department is to create, establish and coordinate various programs within the University which focus on the needs of economically or educationally disadvantaged students; and to combine the expertise of the faculty, the student body and the community in order to afford these students a realistic chance to pursue academic excellence in post-secondary education.

This department administers the TRIO programs, whose purposes are to identify qualified individuals from low-income families who are potential first generation college students, to prepare these students for post-secondary education, and to provide special supportive services for them while they pursue programs of study.

The TRIO programs funded at Wayne State University are:

The Educational Opportunity Center (EOC), 410 Mackenzie Hall, 577-5050, provides information and assistance concerning admission to post-secondary education and application for financial aid to first generation college students, nineteen years of age and older, who reside in the target area and wish to pursue a program of post-secondary education.

The Higher Education Opportunities Committee — Talent Search (HEOC), 488 Mackenzie Hall, 577-1937, provides information and assistance concerning admission to post-secondary education and availability of financial aid to potential first generation college students, twelve to eighteen years of age, who reside in the target area or attend designated Detroit high schools and who wish to pursue a program of post-secondary education.

Special Services for Disadvantaged Students (Project 350), 5229 Cass, Room 215, 577-1994, provides a program of college orientation, instruction, tutoring, academic advising, and counseling support to students accepted for admission to Wayne State University who are first generation college students from educationally and/or economically disadvantaged backgrounds.

Upward Bound, 701 West Warren, 577-1943, provides a program of instruction, academic and career guidance, personal counseling, and residential life to high school students in the tenth, eleventh, and twelfth grades who are potential first-generation college students and who attend designated Detroit high schools.

Veterans Educational Opportunity Program (VEOP), 4216 McDougal, 577-4690, provides a program of instruction, academic and career guidance, personal counseling, and post-secondary placement to veterans who served in the Armed Forces between December 31, 1955 and December 31, 1976.

Student Center and Program Activities

Director: 341 Student Center; 577-3482

Associate Director: 351 Student Center; 577-3444

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

Student Center

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

Food Service: The Student Center provides a selection of food service options for the campus community. Students, faculty, and staff can dine at 'Little Caesar's,' 'Friar Tuck,' 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, SEMTA 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 sixth and seventh floors of the building. Programs, personal counseling as well as spiritual counseling are available from the various University chaplains.

Program Facilities: Rooms are available for business meetings, seminars, conferences and for special programs. Reservations may be made in the Reservations Office, 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: This 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 3:00 p.m. on Friday. Information available in the Center includes: University academic programs and services; off-campus housing information; campus activities; Share-a-Ride Board; travel information; weekly and monthly calendars; job postings; SEMTA and DOT bus schedules; Ride-Match Carpool program; and community activities.

Leisure Learning School: The Leisure Learning School offers pleasurable learning experiences and opportunities for self development through non-credit courses during the fall and winter semesters.

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 alternate Thursdays. In addition, music videos and movies are shown daily on 'Rockworld's' large-screen television, located at the south end of the lower level.

Health Services

4K, University Health Center; 494-4774

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 by calling G-M Underwriters, Inc., at 652-8404.

Medical visits to the Health Service are by appointment, which can be made by telephoning 494-4774. Transportation from the main campus is via the Three Center Mini Bus.

Office of Scholarships and Financial Aids

222 Administrative Services Building; 577-3378

The Office of Scholarships and Financial Aids assists the student and parents in meeting traditional educational expenses which include tuition and fees, books, room, board, and transportation. Undergraduate and graduate students are encouraged to make early application in order to be considered for available federal, state, and institutional aid. Requests for assistance are reviewed on the basis of demonstrated financial need, academic merit, and available funds.

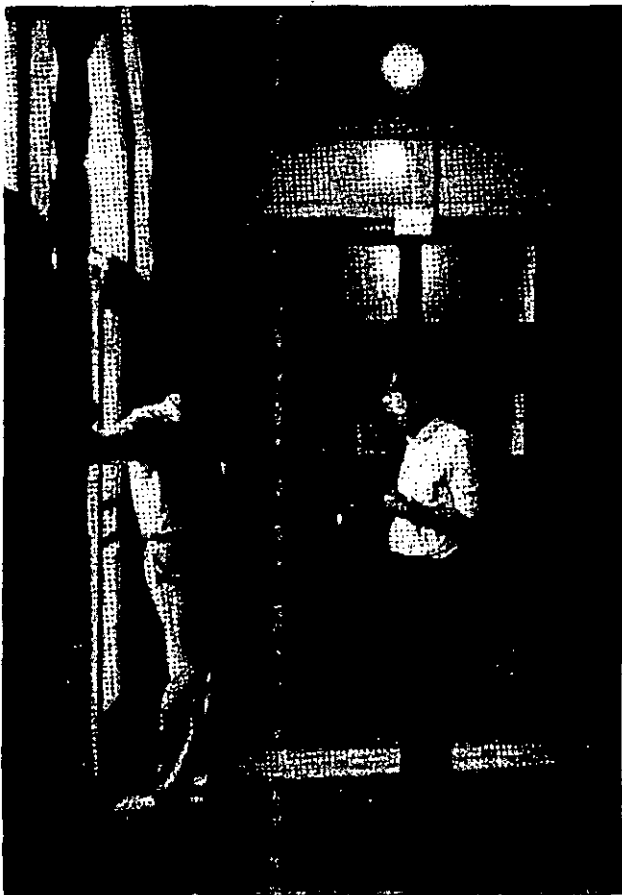
There are two basic forms of aid: loans, and college work-study employment. These may be offered either singly or in combination. The amount of aid that a student may receive depends upon the level of expected family contribution towards the cost of the student's education.

To retain eligibility for financial aid, students must be making satisfactory progress toward a degree. A new application form for financial assistance must be completed each year.

Graduate students seeking scholarships or fellowships should consult the Graduate School; those seeking assistantships should consult their department chairperson.

Law students should apply directly to the Scholarships and Financial Aids Office of the Law School, located in room 317, Law School. Medical School students should apply directly to the School of Medicine Financial Aids Office, room 1112, Scott Hall.

Part-time on-campus work opportunities may be pursued by contacting the Placement Office, located in room 111, Mackenzie Hall.



OTHER UNIVERSITY SERVICES

UNIVERSITY LIBRARIES

The University Libraries are housed in six separate units, five of which are free-standing buildings. As of 1985, the library system reported holdings of 2,084,110 volumes, 20,995 current journals, and 1,554,939 microform holdings, in addition to over 550,000 pamphlets and many maps, films, filmstrips, and sound recordings.

The library system comprises the Purdy/Kresge Library, the Pharmacy and Allied Health LRC, the Arthur Neef Law Library, the Science and Engineering Library and the Vera Parshall Shiffman Medical Library, and the Federal-Mogul Library Annex. Except for items forming special collections and those items in the library annex, the University collections are in open stack arrangement.

These collections are supplemented by the resources of two other major libraries, the 2,000,000-volume Detroit Public Library and the Center for Research Libraries. Access to the Detroit Public Library is available to all Wayne students and faculty. The Center for Research Libraries collects government documents, newspapers and other statistical materials from many areas of the world. Its collections include journals which are of scholarly value but are deemed not to be in sufficient demand to be purchased by a member library, and older research materials.

All University Libraries offer reference and information services, interlibrary loan services, computer search services, photocopying services, and bibliographic instruction programs. The libraries are actively involved in automation of files and processing to provide state-of-the-art access to instructional and research materials.

Purdy/Kresge Library

The Purdy/Kresge Library contains the collections for the humanities, social sciences, and education, serving the College of Liberal Arts, the College of Education, the School of Business Administration, and the School of Social Work. The library contains the University's major microfilm collection and the larger of its two government document depository collections.

The Purdy/Kresge Library is the largest of the University's libraries, and houses the library administration, central materials processing departments, and Media Services.

Science and Engineering Library

The Science and Engineering Library contains the collections for the science disciplines of the College of Liberal Arts, as well as serving as the primary library for the College of Engineering and the College of Nursing. The library now contains over 335,000 volumes and is currently receiving over 2,700 journals.

Vera Parshall Shiffman Medical Library

This library, serving both the School of Medicine and the College of Pharmacy and Allied Health Professions, is located in the Detroit Medical Center. Its collections include over 170,000 volumes and it receives over 2,800 journals covering the intellectual content of the world's medical scholarship. The Shiffman Library serves as a medical resource library for the Detroit metropolitan area as well as for the Greater Midwest Regional Medical Library Network. Additional information may be found in the School of Medicine section of this Bulletin, page 307.

Arthur Neef Law Library

The Law Library, named in honor of the late Dean, Arthur Neef, who served as Dean of the Law School from 1936 to 1967, is located in the Law School building at the north end of the University campus. The Neef Law Library contains over 330,000 volumes, making it the second largest law library in the state of Michigan. Approximately 1,500 periodicals and 1,000 looseleaf services are received regularly. The Neef Library is one of the official depositories of U.S. Government publications. Additional information may be found in the Law School section of the Wayne State University Graduate Bulletin.

University Archives

Walter P. Reuther Library; 577-4024

The University Archives was established in 1958 to collect, preserve, organize 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 *Wayne Report*, *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. The Archives Newsletter is published periodically to describe recent acquisitions, research in progress and other topics.

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.

University Ombudsman

652 Student Center; 577-3487

Interim Ombudsman: Asa Brown

The Office of the Ombudsman, established by the Board of Governors, is charged with helping students solve University-related problems. While Ombudsman means 'grievance man' in Swedish, the student's problem does not have to be a clear-cut grievance; issues may be brought to the attention of the Ombudsman which have been formulated in the student's mind as questions, doubts, or anxieties about a University matter.

The student's problems may be academic or nonacademic. Examples of academic problems are issues about admission, registration, records, grading, course content, conduct of an instructor and requirements for graduation. Nonacademic problems include such matters as financial aid, accounts receivable, student services and the physical plant.

Many other University-related problems exist which the Ombudsman can help the student solve. The Ombudsman acts as an information source on all student matters, attempts to resolve problems when students become entwined in academic or bureaucratic red-tape, and acts as counsel for the student in appropriate circumstances. Additionally, the Ombudsman seeks to change those policies and practices of the University which have become outmoded, irrelevant, or otherwise unfair.

In any case, whenever the student is unsure about anything relating to the University, he/she is invited to consult the Ombudsman.

Frederick C. Matthaei Physical Education Center

Athletics: The Department of Intercollegiate and Intramural Sports is housed in the Frederick C. Matthaei Physical Education Center. Students may participate in a full range of sports as athletes and as spectators. Tickets at student rates and information on intercollegiate and intramural sports are available at 101 Matthaei Building, 577-4280.

Recreation: The facilities and services of the Division of the Health and Physical Education are available to students, faculty and staff for 'drop-in' recreation whenever unscheduled for instruction or formal athletic programs. Areas available include: swimming pool, handball-racquetball courts, squash courts, weight training room, basketball courts, volleyball court, tennis courts and playfields for softball, touch football and soccer. 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 any time during open hours on weekends. A guest fee is charged as posted. For additional information, telephone 577-4295.



School of Business Administration

DEAN: WILLIAM 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, and to develop new knowledge through research and 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 adult 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 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, see 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-three graduate credits beyond the pre-program foundation requirements. Graduate courses are offered primarily during the evening hours, with limited course offerings on Saturday mornings. Undergraduate foundation course equivalents are offered as both day and evening classes.

Graduate Degrees

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 13. 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 such as relevant employment and leadership experience.

The Graduate Committee is authorized to review the credentials of each applicant. 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. 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.

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 designed to test ability to read, understand, and reason. Publications including samples of 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 and 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, 343 Mackenzie Hall. 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-four 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 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-three 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 attainment 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 20-28 and 49, respectively.

Course Distribution Requirements

The master's degree program provides the common body of knowledge in business and 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 four phases of course work required: foundation, core, concentration and elective.

— Foundation Requirements

The following nine foundation courses¹ 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.) **All foundation requirements must be completed before a student begins core, concentration and elective courses.**

ACC 301	Elementary Accounting Theory I
ACC 302	Elementary Accounting Theory II
ACC 605	The Legal Environment of Business
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 the above nine courses, ACC 563, Business Information Systems, and one college-level mathematics course are required. These two courses, along with ACC 301 and 302, may be taken by

¹ Equivalent courses offered at the undergraduate level may be taken to satisfy foundation requirements prior to or following graduate admission. Information regarding such courses is available in the Office of Student Services, 103 Prentiss Building.

students who have not yet been admitted to graduate program status. Graduate courses ACC 601, Financial Accounting, and ACC 602, Managerial Accounting are occasionally offered as alternates to ACC 301 and 302.

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.² If courses proposed to satisfy the foundation requirements of the M.B.A. program are over three 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. The Graduate Committee will take into consideration the applicant's relevant course grades, nature of present occupation, and GMAT score before exercising this option.

A cumulative honor point average of 3.00 ('B') is required for foundation requirements taken following completion of the bachelor's degree.

— 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, business economics, finance, management or marketing, a more advanced course in a subject area may replace the pertinent core course cited above. The Graduate Committee or its designee will make the course substitution after consultation with the appropriate departmental chairperson.

— Concentration Requirements

The purpose of a concentration area is to provide depth in a specialization that will contribute to the student's attainment of his or her career objectives. A concentration area consists of two courses selected to meet the particular professional needs of the candidate.

The choice of a specific concentration area should be made at the time of application or as soon as possible after the student has been admitted to the program. The choice must be made before the completion of twelve credits in course work at the 700 level or higher. The student may wish to consult one or more graduate advisers before making a selection; however, after choosing a concentration area, the selection of specific courses must be approved prior to registration by the graduate adviser assigned to the student and by the Graduate Officer (Associate Dean for Academic Affairs).

² The Graduate Committee is composed of the four Departmental Chairpersons, and is chaired by the Associate Dean for Research and Academic Programs.

Listed below are *illustrative* courses in the concentration areas. Students may, with their adviser's prior approval, select different combinations of concentration courses within a department as well as concentration courses in more than one department.

Accounting

Elect ACC 712 and 713, or ACC 714 and 719

ACC 712	Tax Problems in Business Affairs
ACC 713	Cost Accounting Control, and Analysis
ACC 714	Advanced Tax Problems
ACC 719	Advanced Auditing

Business Economics

FBE 783	Business Conditions Analysis
FBE 709	Money and Capital Markets

Management Information Systems

ACC 751	Data Base Systems
ACC 752	Information Systems Design

Finance

Two courses from the following including either FBE 722 or FBE 723.

FBE 709	Money and Capital Markets
FBE 722	Advanced Managerial Finance
FBE 723	Investment Policies
FBE 752	Financial Modeling and Strategic Planning
FBE 787	International Business Finance

Industrial Relations

MGT 775	Labor Relations and Collective Bargaining
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Plus one of the following:

MGT 777	Union Contract Administration
MGT 898	Industrial Relations and Public Policy

Management and Organizational Behavior

MGT 762	Complex Organizations
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Plus one of the following:

MGT 763	Organizational Change and Development
MGT 766	Entrepreneurial Management
MGT 768	Executive Decision Making
MGT 800	Seminar in Management

Personnel/Human Resources

MGT 764	Management of Human Resources
MGT 769	Executive Development

Marketing

MKT 745	Business Research and Methodology
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Plus one of the following:

MKT 743	Advertising Management
MKT 746	International Business
MKT 747	Consumer and Industrial Buying Behavior
MKT 762	Business Logistics Management
MKT 770	Management of Retail Enterprises

Electives

After selecting a concentration area, each M.B.A. student selects one elective course with the assistance and approval of his/her academic adviser. *The approval of the adviser and the Graduate Officer must be obtained prior to registering for the course.* The purpose of this elective is to provide the student with additional diversity in business administration. *The elective must be taken in a department other than that in which the student concentrates.* Elective courses must meet course level requirements; see page 49.

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 (200 Prentiss Building; 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 PROCEDURES

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 13-28 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 of 700 level course work with a minimum 3.0 honor point average. Failure to do so will result in release from the program.

Students admitted to regular status or those who have attained regular status 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 release 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 graduate adviser is appointed at the time the student selects a concentration area. The adviser assists the student in planning a program of study and initially approves concentration and elective courses on a *Plan of Work* subject to final approval of the Graduate Officer. The student must obtain the adviser's approval before taking specific concentration and elective courses.

Credit will be disallowed for concentration and elective courses taken without prior written approval of the student's adviser and the Graduate Officer.

Advisers have the authority to initially approve concentration and elective courses in order to meet a student's specific career objectives. He or she may, for example, approve a student's taking of one graduate course in three of the School's four academic departments.

The Graduate Officer retains final approval authority for all concentration and elective courses.

For preliminary advising, students should contact the Director of Student Services at 577-4510.

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.

Candidacy

Candidacy is an advanced status authorized by the School of Business Administration upon the satisfactory completion of all foundation requirements, the completion of the first twelve credits in approved graduate course work with a cumulative honor point average of 3.0 or higher, and the submission of an approved *Plan of Work*.

Change of Concentration

Students wishing to change concentrations or *Plans of Work* within the School of Business Administration should contact the Student Services Office at 577-4510. A *Plan of Work* for the requested concentration will then be issued. Students are advised that such changes occurring late in their program may require the election of additional courses beyond those originally assigned.

Conduct

Each student is subject to official regulations governing student activities and student behavior. Furthermore, it is the responsibility of each student to adhere to the principles of academic integrity. Academic integrity means that a student is honest with him/herself, fellow students, instructors, and the University in matters concerning his or her educational endeavors. Thus, 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.

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.

Course Level Requirement

M.B.A. students are required to take all core, concentration and 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 his or her graduate adviser and 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 approvals have not been obtained.**

School Residence Requirement

M.B.A. students who wish to take a graduate course in a department outside the School of Business Administration must obtain the prior written approval of their adviser and the Graduate Officer. This approval is not routinely granted. Credit will not be allowed if prior approval has not been obtained.

Course Repeat 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 Director of Student Services (577-4510).

Normally, when repeating a graduate course, the repeat grade and the grade earned in the first attempt are both included in the calculation of the graduate honor point average. The Graduate Committee, however, at its discretion or upon petition by the student, may authorize the repetition of *one* graduate course 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 21.

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 total of no more than five credits of directed study may be used to fulfill degree requirements.

Grievance Procedure

Students with a course-related grievance should first contact the instructor of the course. Should the grievance remain unresolved, the student should contact the chairperson of the department in which the course is offered. If the problem remains unresolved at this level, the student should refer it to the Associate Dean for Research and Academic Programs.

Non-classroom-related grievances should be brought directly to the appropriate departmental chairperson or to the Office of the Dean. Additionally, the University Ombudsman (see page 42) is available to all students for assistance in the resolution of University-related problems.

A copy of the School of Business Administration's grievance procedure is available in the Office of the Dean, or in the Office of Student Services, 103 Prentis Building.

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 considered a withdrawal ('W'), unless *prior to the end of that year* the student requests and the instructor agrees in writing to the University Records Office that additional time is needed for the removal of the Incomplete.

Maximum Credit Load

A student with a strong academic record who is devoting full-time to graduate study and who is carrying no outside employment may register in a program *not to exceed twelve credits per semester*. The student who is engaged in part-time work should limit his/her registration in proportion to the amount of his/her outside work. A student employed full-time will normally not register for more than six to nine graduate credits. A student working full-time who desires to carry more than nine credits, must obtain permission from the Associate Dean for Research and Academic Programs. *Graduate assistants are required to register for at least eight credits each semester.*

Passed/Not Passed Registration

Graduate students may *not* take foundation requirements or final 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. The graduate adviser's authority is limited to concentration and elective courses, and is subject to final approval of the Graduate Officer.**

Retention of Records

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 or destroyed by the department.

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 course work which applies toward meeting the final thirty-three credit requirement of the degree. Students whose course work is expected to exceed the time limitation must file a written request for revalidation with the Director of the Graduate Program. Upon receipt of the student's *Application for Degree*, the School reserves the right of revalidation of credits which are over-age and which represent courses completed at Wayne State University. Students are not permitted to revalidate credits earned at other institutions. 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. Time extensions beyond these conditions may be authorized only for conditions clearly beyond the student's control.

Transfer of Credits

Graduate transfer credit for core, concentration, or 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 Director of the Graduate Program, 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 or the student's adviser.

5. The course may not be more than five years old.
6. The course cannot have provided credit towards 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 Director of the Graduate Program 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.

Withdrawals from Class

Consult the General Information section of this bulletin, page 21, for policy on withdrawal.



FINANCIAL AIDS AND AWARDS

Scholarship Awards

The scholarships listed below give preference to students in the School of Business Administration. While the School of Business Administration, through its scholarship committee, a departmental committee, or a joint committee of the School and an external organization, foundation, or agency, is 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.

American Production and Inventory Control Society Scholarship. Open to business students interested in careers in production or operations management.

Becker C.P.A. Scholarship. Awarded to an accounting major with high academic achievement, intending to pursue a career in public accounting.

Betty Brown Scholarship (ASWA). Awarded through the American Society of Women Accountants to female accounting students with high academic achievement.

Morris Blumberg Memorial Scholarship. Awarded to students involved in or intending to pursue careers in the area of small business.

Business/Professional Advertising Association Scholarship—Detroit Chapter. Annually awarded to undergraduate marketing majors with high academic achievement (formerly IMD Scholarship).

Chrysler Corporation Minority Scholarship. A combined scholarship/internship award designated for minority students demonstrating high academic achievement.

College Women's Club Scholarship. Open to undergraduate women in business administration.

Crain's Detroit Business Scholarship. Established in 1986 in conjunction with Crain's Executive Newsmaker of the Year Award, this scholarship is designated for an outstanding student in business administration.

Detroit Corporate Cash Management Association Scholarship. Designated for finance majors of high academic achievement.

Dow Corning Scholarship for Minorities and Women. Open to minorities and women in business administration.

Sam and Leonard Fink Memorial Scholarship. Awarded to business administration students demonstrating high academic achievement.

First of America—Detroit Minority Scholarship. Awarded to minority students in business administration demonstrating high academic achievement.

Golden State Minority Foundation Scholarship. Annually awarded to minority business administration students demonstrating high academic achievement.

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 Mitchell and Co., this award is designated for accounting majors demonstrating high academic achievement.

Price Waterhouse Minority Scholarship in Accounting. Established in 1986, this scholarship is designated for minority accounting students demonstrating high academic achievement.

Slocum Foundation Scholarship. Awarded to students of high academic achievement majoring in advertising/public relations.

Volkswagen of America Minority Scholarship. A scholarship/internship award designated for minority students in business administration demonstrating high academic achievement.

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 Director of Student Services, School of Business Administration, Wayne State University, Detroit, Michigan 48202.

Recognition Awards

Alpha Kappa Psi Scholarship Award. Awarded annually to the student in business administration who has attained the highest scholastic average.

American Marketing Association Award. Awarded by the Detroit Chapter to the outstanding student in marketing.

Dean's List. Each semester undergraduate students who have excelled in their academic studies are honored by placement on the Dean's List.

Delta Sigma Pi Scholarship Award. Awarded annually to the senior with the highest scholarship in business administration.

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.

SUPPORT SERVICES AND ORGANIZATIONS

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, administers the Consumer Panel, and provides professional services to the community.

Professional Development Division

In addition to its degree programs, the School also offers non-credit programs through its Professional Development Division. The primary of this division is to provide seminars and courses to interested individuals and/or community groups (i.e., companies, professional associations, and local governments) when credit programs are not desired or appropriate. These courses are designed to provide a working knowledge of a specific area and are based on the latest methods and concepts in business administration. For information, contact Dr. Edwin Harris, Director; telephone: 577-4353.

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.

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

The SBDC also serves as the coordinating agent for present and proposed small business assistance programs throughout the State of Michigan. 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.

The director of the Michigan SBDC is Dr. Norman J. Schlafmann; telephone: 577-4848. The Wayne State SBDC (subcenter) is headed by Dr. Raymond M. 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 small business owners/managers. Selected seniors and graduate students are invited to participate in this program in conjunction with their course work 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 800 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; telephone: 577-4517 and 577-4515.

Office of Student Services

The Office of Student Services is responsible for credential evaluation, admissions processing, initial advising, and graduation certification of business administration students. In addition Student Services personnel prepare and distribute the *Plan of Work* for students enrolled in both the undergraduate and graduate degree programs.

Any student seeking academic, vocational, or personal counseling should make an appointment to see the Director of Student Services (telephone: 577-4510) or a member of the undergraduate counseling staff (telephone: 577-4505).

Placement Services

The School of Business Administration works with the University Placement 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

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.

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 masters degrees. Membership is by invitation only.

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.

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.

The National Association of 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.

The Student Senate is the official student government body of the School of Business Administration and is composed of two representatives from each recognized Business Administration student organization, at-large members elected from the student body, Student Council representatives, other students appointed by the Dean, the faculty or School adviser, *ex officio*, and the Dean of the School of Business Administration, *ex officio*.

Administration and Faculty of the School

Dean: William H. Volz

Assistant to the Dean: Gary J. Reggio

Business Manager: Gloria M. Anderson

Chairperson (Acting), Department of Accounting:
Adrienne Slaymaker

*Chairperson (Acting), Department of Management
and Organizational Sciences:* Edwin F. Harris

Chairperson, Department of Marketing: Edward A. Riordan

Director, Bureau of Business Research: David I. Verway

Director, Professional Development Division: Edwin F. Harris

Director, Management Center: Rodney B. Beaulieu

Director, Professional Development Division: Edwin F. Harris

Director, Michigan Small Business Development Center:
Norman J. Schlafmann

Director, W.S.U. Small Business Development Subcenter:
Raymond M. Genick

Director, Student Services: H. Robert LaBuda

Professors

Gerald Alvin, Victor C. Doherty, John G. Maurer, Fred W. Morgan, Jr., Richard O. Osborn, Milton H. Spencer, William H. Volz

Associate Professors

Robert C. Bushnell, Hugh M. Cannon, David R. L. Gabhart, Jone R. Goldstein, Donald E. Gorton, Edwin F. Harris, George C. Jackson, K. Gregory Jin, J. Patrick Kelly, K. S. Krishnan, James T. Low, James E. Martin, Harvey Nussbaum, Barbara Price, Kelly R. Price, Edward A. Riordan, Ronald D. Schwartz, Louis L. Stern, Myles S. Stern, Harish L. Verma, David I. Verway, Frank L. Voorheis, David L. Williams, Attila Yaprak

Assistant Professors

Ishmael P. Akaah, Fouad Al-Najjar, Theodore C. Alex, Blake E. Ashforth, Cynthia J. Campbell, Yitzhak Fried, Barbara C. Goodman, Mahmoud Haddad, Ronald H. Humphrey, Matthew R. Hyle, Sharon M. Moody, Thomas J. Naughton, William W. Poffenberger, Jack D. Schroeder, Adrienne L. Slaymaker, Linda B. Wright, Janich H. Zahrlly

Lecturers

Susan D. Garr, George W. Gregory, Michael Grose, Meryl C. Hirschland, Edward F. King, Albert D. Spalding, Jr., Yu-Wen Elizabeth Sun, Margret A. Yourz

Faculty Emeriti

Francis J. Brown, John N. Cadaret, Lyda E. Chamberlin, Walter J. Chamberlin, Bruce E. DeSpelder, Alice Wolfram Herge, Mary S. Irwin, H. Webster Johnson, Leon R. Klein, Ferdinand F. Mauser, Donald H. Palmer, Irving Paster, Edward T. Raney, John J. Rath, Fred P. Unruh, James F. Wallis

Directory of the School

Dean.....	226 Prentis Building; 577-4501
Associate Dean for Academic Affairs	226 Prentis Building; 577-4503
Assistant to the Dean	226 Prentis Building; 577-4472
Business Manager	226 Prentis Building; 577-4502
Director, Bureau of Business Research	209 Prentis Building; 577-4213
Director, Professional Development Division	105 Prentis Building; 577-4353
Director, Management Center	105 Prentis Building; 577-4449
Director, Michigan Small Business Development Center	2727 Second Avenue; 577-4848
Director, W.S.U. Small Business Development Subcenter	2727 Second Avenue; 577-4850
Director of Student Services	103 Prentis Building; 577-4510
Student Senate Office	6 Prentis Building; 577-4783
Department of Accounting.....	200 Prentis Building; 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

COURSES OF INSTRUCTION¹

Accounting (ACC)

510. Advanced Accounting Theory I. Cr. 3

Prereq: ACC 302. Conceptual foundations of accounting principles. Analysis of various accounting theories concerning asset valuation. (T)

511. Advanced Accounting Theory II. Cr. 3

Prereq: ACC 510. Interpretation of equities in corporation assets and measurement of income. (T)

512. Advanced Accounting Theory III. Cr. 3

Prereq: ACC 511. Consideration of advanced concepts pertaining to consolidated statements, analysis of funds flow and liquidity, and supplemental financial disclosures of the effects of changing prices. (T)

513. Accounting Systems Design and Control. Cr. 3

Prereq: ACC 511 and 563, CSC 100. Student computer account required. Principles of design, control, and evaluation of computer-based systems for processing accounting information. Techniques for data base design and information systems auditing. (T)

514. Auditing. Cr. 3

Prereq: ACC 511, FBE 540. Principles and procedures of auditing; professional standards and responsibilities of the certified public accountant. (T)

516. Cost Accounting. Cr. 3

Prereq: ACC 302. Theory and practice of cost accumulation and analysis to facilitate managerial decisions and cost control systems. (T)

517. Taxes on Income. Cr. 3

Prereq: ACC 302 or 601. Theory of taxes on income and practical application of related laws and regulations. (T)

550. Survey of Accounting. Cr. 3

Prereq: junior standing. Not recommended for students in the School of Business Administration. No credit after ACC 301. Fundamental concepts of financial and managerial accounting. The flow of accounting information. Interpretation of accounting reports. (I)

563. Business Information Systems. Cr. 3

Prereq: ACC 301 and 302, CSC 100, MAT 150, MGT 550. Student computer account required. Concepts and techniques of design, use and control of computer-based systems for business data processing, office automation, information reporting, and decision-making. (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. (I)

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)

617. Governmental and Not-for-Profit Accounting. Cr. 2

Prereq: ACC 302 or 601. Accounting principles and procedures applied to fund accounting of government units and not-for-profit organizations. (T)

710. Financial Reporting Framework I. Cr. 3

Prereq: ACC 601 and 602 or one year of introductory accounting principles. 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 and consent of adviser. 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 and consent of adviser. 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 517 or 712 and consent of adviser. Problems and cases concerning such areas as gains and losses; corporate organizations, distributions, reorganizations and liquidations; partnerships; and estate and gift taxes. (Y)

715. Information Systems for Planning and Control. Cr. 3

Prereq: ACC 710 and consent of adviser. Student computer account required. Information systems function within the organization. Identifying and satisfying management's needs for information and control. Systems approach to integrating information systems of an organization's functional sub-units. (Y)

718. Auditing. Cr. 3

Prereq: ACC 710 and consent of adviser. 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 514 or 718 and consent of adviser. 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)

751. Data Base Systems. Cr. 3

Prereq: ACC 710, 715, and consent of adviser. Student computer account required. The use of data base management techniques within accounting and management information systems, including a study of internal control in a data base management environment. (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 Graduate 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)

553. Business Law II. Cr. 3

Prereq: ACC 351 and sophomore standing. Law of agency,

¹ See page 461 for interpretation of numbering system, signs and abbreviations

corporations, partnerships and negotiable instruments. Professional liability.

Finance And Business Economics (FBE)

523. Financial Markets, Institutions and Securities. Cr. 3

Prereq: ECO 102; ACC 302 recommended. The framework of our financial system. The role of securities, interest rates, financial markets and intermediaries in promoting savings, investments and other economic goals. The function of the money, capital and equity markets in channeling funds to business. (T)

529. Business Finance. Cr. 3

Prereq: ECO 102, ACC 302, and ECO 410 or equiv. Principles of financial administration, with applications to problems of financial analysis, control, and planning by firms under changing economic conditions. (T)

540. Quantitative Methods II: Statistical Methods. Cr. 3

Prereq: FBE 530 or ECO 410 or equiv. Must be satisfactorily completed in first sixteen credits after admission to the School of Business Administration. Uses of statistical techniques in business. Topics include: sampling, hypothesis testing, confidence interval estimation, regression, analysis of variance and chi-square tests. Application to accounting, market research, finance, production and forecasting. Computer techniques. (T)

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)

621. The Stock Market and Investments. Cr. 3

Prereq: FBE 523 and 540 or equiv. Introduction to the securities markets and how they function. Interpreting market changes; capital building through stock investments; factors influencing stock market prices; sources of investment information; strategies and theories of investing. FBE 529 and ECO 410 recommended as background. (T)

622. Portfolio Management. Cr. 3

Prereq: FBE 540 and 621. Principles of portfolio construction and administration applicable to various institutions including banks, insurance companies, mutual funds, and pension trusts. (T)

627. Advanced Business Finance. Cr. 3

Prereq: FBE 529 and 540. Working capital management, capital budgeting, valuation theories, and long term financing policies. Emphasis on role of financial management in maximizing the value of the firm. (T)

630. Working Capital Management. Cr. 3

Prereq: FBE 529 and 540 or equiv. Advanced financial management principles applied to the administration of corporate cash, marketable securities, receivables, inventory, short-term financing, payables and bank relationships. (I)

631. Capital Budgeting and Long Term Financing. Cr. 3

Prereq: FBE 523, 529 and 540 or equiv. Advanced financial principles applied to the administration of corporate capital budgeting, debt management, cost of capital, dividend policy, lease financing, merger valuation and reorganization. (I)

632. Principles of International Business Finance. Cr. 3

Prereq: FBE 529. Financial management of firms dealing in international money and capital markets. Analysis of international investments, currency problems and financial aspects of exporting and importing functions. (I)

633. Bank Management. Cr. 3

Prereq: FBE 529 and 540 or equiv. Analysis of the functional areas of management of banks and related financial institutions, including deposits, cash, loans and asset accounts. Discussion of current topics including liquidity, capital adequacy, electronic fund transfers and mortgages. (F,W)

634. Seminar in Financial Markets and Investments. Cr. 3

Prereq: FBE 622. Advanced analysis of security pricing and portfolio construction and administration. Analysis of spot, future and options markets for financial securities and for commodities and their instruments. (F,W)

635. Real Estate Finance. Cr. 3

Prereq: FBE 540 or equiv. Analysis of methods and problems of transferring real property. Examination and analysis of financing methods for real estate transactions and real estate investment strategies. (F,W)

637. Risk Management. Cr. 3

Repeat of former FBE 520. The underlying principles of insurance as they apply to the entire field of insurance. Intended for the student who wishes to get a general knowledge of insurance as a management tool in controlling risks. (F,W)

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: FBE 608, 609, 604 or equiv., and consent of adviser. Financial intermediaries; the capital markets; the money market and interest rates. (F,W)

721. Managerial Finance. Cr. 3

Prereq: FBE 529, 604 or equiv. within 3 years of registration, or within 5 years if undergraduate finance major. 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 and consent of adviser. Advanced topics in managerial finance, including leasing, merger valuation, reorganization, interactions of investment and financing decisions, and critical evaluation of alternative firm valuation theories. (T)

723. Investment Policies. Cr. 3

Prereq: FBE 701, 721 and consent of adviser. 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. (Y)

752. Financial Modeling and Strategic Planning. Cr. 3

Prereq: FBE 701, 721, 782. Study of methods and models for financial and strategic planning. Implementation using System W computer language. Examination of loss strategies and corrective procedures. (I)

782. Managerial Economics. Cr. 3

Prereq: FBE 608 or equiv. 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 and consent of adviser. Analysis of current economic conditions and their effects on business. Governmental policies discussed and evaluated. (I)

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 Graduate 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)

636. Financial Modeling. Cr. 3

Prereq: FBE 529, 540; and 630 or 631. Courses for advanced finance majors. Concepts, training and use of major spread sheet and multidimensional computer financial modeling languages. Applications to cash-flows, budget and variance, consolidation (including international), pro forma simulations. Individual project required. (I)

Management (MGT)

550. Organization and Management Theory. Cr. 3

Prereq: PSY 101 or PSY 102 and SOC 200. No graduate credit. May count as repeat of either former MGT 559 or MGT 660. The design and functioning of organizations. Types of formal organization structures, relationships between departments, technology, authority, responsibility and decision-making at all management levels, environmental and international relationships, and organizational effectiveness. (T)

552. Behavior in Organizations. Cr. 3

Prereq: PSY 101 or PSY 102 and SOC 200. No graduate credit. Repeat of former MGT 662. Dynamics of behavior in organizational settings, at the individual, interpersonal, and group levels. A problem-solving approach to management with emphasis on interpersonal and group skills. Topics include: motivation, communication, leadership, organizational development, group functions and processes. (T)

560. Introduction to Production Management. Cr. 3

Prereq: CSC 100, ECO 410, and MGT 559 or MGT 550 or MGT 660. No graduate credit. Analysis of the production system. Identification of problems in a production system and solution of

problems. Topics include: forecasting, production planning and scheduling, quality control, cost control and inventory control. (T)

561. Management Decision Making. Cr. 3

Prereq: ECO 410; and MGT 559 or MGT 550 or 660, and 552 or 662; or consent of instructor. Analysis of managerial decision processes and the nature of decisions. Examination of conditions under which decisions are made. Factors affecting decision problems. The role of quantitative methods in the analysis of decision problems. (T)

565. The Entrepreneur and Venture Creation. Cr. 3

Prereq: ACC 301, FBE 529, MGT 559 or MGT 550, MKT 535. Nature of entrepreneurship and the role of the entrepreneur in American society. Focus on the critical factors and special problems associated with the process of creating new business ventures. Emphasis on development of a business plan. (Y)

566. Managing the Small Business. Cr. 3

Prereq: ACC 301, FBE 529, MGT 559 or MGT 550, MKT 530. Differences between small and large company environments and problems. Focus on knowledge and skills required for efficient and effective small business management. Selected students may replace a library research project with an actual small business consulting project. (T)

567. Entrepreneurship/Small Business Field Studies. Cr. 3

Prereq: MGT 565, 566, senior standing; or senior standing, consent of instructor. Students assigned to act as consultants to entrepreneurs or to small business owner/managers in Detroit metropolitan area. Class meetings focus on the consultative and problem-solving processes. (Y)

570. Personnel Administration. Cr. 3

Prereq: MGT 559; or 550 or 660, and 552 or 662; or consent of instructor. Theory, policies, procedures and practices in employment relationships. Topics include: job design, employment planning, selection, training and development, performance appraisal, compensation, labor relations and affirmative action within the legal parameters set forth by the Federal and state governments. (T)

574. Collective Bargaining. Cr. 3

Prereq: MGT 559; or 550 or 660, and 552 or 662; or consent of instructor. A basic course in labor relations examining the development of union-management relationships; the philosophy and practice of collective bargaining. A bargaining situation is normally used. (T)

577. Advanced Personnel Management. Cr. 3

Prereq: MGT 570 or consent of instructor. In-depth study of selected areas within the personnel function such as selection, performance appraisal and compensation; emphasis on application of human resource management theory. Specific personnel techniques discussed and utilized. (F,W)

589. Social and Political Influences on Business. Cr. 3

Prereq: MGT 559; or 552 or 662; or consent of instructor. No credit after former B A 589. Influence of the external environment on the corporation. Rules and responsibilities of business persons; corporate governance; assessment of social performance; contemporary issues. (T)

600. Introduction to Operations Management. Cr. 2

Prereq: graduate standing; CSC 100 or equiv.; FBE 609 or equiv. 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: graduate standing. Study of organization theory, behavior, and interpersonal communications. (T)

661. Corporate Strategic Planning. Cr. 3

Prereq: MGT 559; or 550 or 560, and 552 or 662; or consent of instructor. Theory and method of corporate strategic planning. Analysis of the processes of strategic search, appraisal, choice and implementation. Examination of strategic planning techniques including model building, MBO, Delphi, forecasting and assessment. (Y)

667. Models in Operations Management I. Cr. 3

Prereq: MGT 560 or consent of instructor. Analysis of problems in production operations management. Application of quantitative models to the solution of these problems. Topics covered are decision analysis, aggregate systems, inventory control, material requirements planning and PERT and CPM. (Y)

670. Labor Relations in the Public Sector. Cr. 3

Prereq: MGT 574 or consent of instructor. Repeat of former MGT 608. Investigation of management-employee relations, unionization and collective negotiations in the public sector. (Y)

674. Administering the Labor Agreement. Cr. 3

Prereq: MGT 574 or consent of instructor. Interpretation, application, and enforcement of labor agreements. Grievance processing and arbitration. Alternative methods of resolving contract disputes. (Y)

678. Current Issues in Employee Relations. Cr. 3

Prereq: nine credits in personnel and industrial relations. A terminal course investigating contemporary personnel, industrial relations, and manpower issues and problems in industrial relations and human resource management. (Y)

689. Business Policy. Cr. 3

No credit after former B A 0690 or former B A 689. To be taken after completion of core curriculum and as one of the last five courses toward bachelor's degree. Development of conceptual and administrative skills required of top-level managers in their strategy determination, policy formulation, and policy implementation roles. Managing the firm as an integrated unit under conditions of uncertainty. Integration of concepts and skills covered in previous specialized courses. (T)

695. Seminar in Management. Cr. 3

Prereq: MGT 561, 570, 662 or consent of instructor. Selected topics in the management and organizational sciences. (I)

696. Models in Operations Management II. Cr. 3

Prereq: MGT 560, FBE 540 or consent of instructor. Analysis of problems in production operations management and their solutions. Topics include quality control, statistical control models, aggregate scheduling and facility layout planning. (Y)

706. Management and the Organization. Cr. 3

Prereq: MGT 606 and consent of adviser. 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 and consent of adviser. 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. (Y)

763. Organizational Change and Development. Cr. 3

Prereq: MGT 706 and consent of adviser. Theory, methods, and skills involved in designing and implementing planned change in organizations toward improving organizational adaptiveness and

effectiveness: examination of the change process, and alternative intervention strategies including techno-structural changes, development of interpersonal skills and team development. (I)

764. Management of Human Resources. Cr. 3

Prereq: MGT 706 and consent of adviser. 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. (F,W)

766. Entrepreneurial Management. Cr. 3

Prereq: MGT 706 and consent of adviser. 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 act as consultants to entrepreneurs or small business owner/managers. (Y)

768. Executive Decision Making. Cr. 3

Prereq: MGT 706 and consent of adviser. 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 use of behavioral and quantitative models, issues of complexity and uncertainty. (Y)

769. Executive Development. Cr. 3

Prereq: MGT 706 and consent of adviser. The nature and evolution of executive development. Objectives of development programs. Identification of executive skills. Design, implementation, and evaluation of development programs. Techniques of development and their relative merits. (I)

774. Business and Contemporary Society. Cr. 3

No credit after former B A 774. 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 and consent of adviser. 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

No credit after former B A 789. To be taken in final twelve hours of graduate program and after all core courses. Policy determination and administrative processes from the perspective of the top level manager. 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 Graduate Student Services prior to registration. Advanced independent readings under the supervision of a member of the graduate faculty in areas of 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 and consent of adviser. Selected topics in the management and organizational sciences. (I)

898. Industrial Relations and Public Policy. Cr. 3
Prereq: two courses in industrial relations and consent of adviser. An advanced course in industrial relations. Examination of public policy and current issues in industrial relations, such as: employment discrimination, OSHA, new techniques in conflict resolution, and changing labor law. (Y)

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

Marketing (MKT)

530. Marketing Management. Cr. 3
Prereq: ECO 102. Planning the marketing program within social, economic and legal environments. Market segmentation and behavior, market systems and strategy, international marketing. (T)

533. Business Communication. Cr. 3
Prereq: successful completion of English Proficiency Examination in Composition. Open only to students admitted to the School of Business Administration. Fundamental principles and skills of business communication, both written and oral. Systematic procedures for designing and preparing professional documents (especially reports) and oral presentations. (T)

535. Marketing Analysis and Decision Making. Cr. 3
Prereq: MKT 530 and FBE 540. Application of marketing principles in the analysis of problems in the areas of marketing objectives, and product, price, promotion and distribution strategy. (T)

545. Consumer Behavior. Cr. 3
Prereq: MKT 530. Concepts and theories to explain consumer and organizational buyer behavior. Application of this understanding to marketing management and public policy decision making. (T)

547. Industrial Marketing. Cr. 3
Prereq: MKT 530 or consent of instructor. The industrial buying process, value and vendor analysis, market analysis, industrial channels and media; problems of leasing, financing, reciprocity and technical service. (Y)

548. Market Forecasting. Cr. 3
Prereq: MKT 530 and FBE 540. Management of the market forecasting operation and selected forecasting techniques and procedures. Uses of forecasting in budgeting, product line decisions, sales activity, promotional mix, inventories, consumer demand, pricing and channel decisions. Simple and advanced time-series, Box-Jenkins, adaptive models and regression models. Managerial decision making in developing the firm's forecasting system. (F,W)

549. Principles of Advertising. Cr. 3
Prereq: MKT 530. Advertising principles relevant to a wide variety of organizations; research, advertising copy, layout; media of advertising; advertising management of departments and agencies; campaign strategy; budgeting, and testing effectiveness. (T)

550. Advertising Copy. Cr. 3
Prereq: MKT 549 or consent of instructor. Principles of effective advertising copy and application in consumer and industrial advertisements. Exercises in writing, criticizing, testing, and revising magazine, newspaper, radio, television, outdoor and direct mail

advertisements. (T)

551. Advertising Media Planning. Cr. 3
Prereq: MKT 549 or consent of instructor. Influence of marketing, creative and media objectives upon media planning. Information systems, budgeting approaches, media characteristics, media models, schedule construction, execution, and auditing. (Y)

560. Transportation and Distribution Management. Cr. 3
Prereq: MKT 530. Management of the movement of raw materials and finished products including the development of transportation strategies and objectives, and the selection of modes and carriers. Emphasis upon the interface of transportation policies with production and marketing plans. (Y)

562. Business Logistics. Cr. 3
Prereq: FBE 540 and MKT 530. No credit after MKT 546. Achieving efficient physical flow of goods to fulfill production and marketing objectives through the integration of transportation, inventory management, order processing, warehousing, packaging, materials handling and acquisition. (Y)

563. Advanced Business Logistics. Cr. 3
Prereq: MKT 562. Utilization of cases in analysis of problems encountered in the design and operation of a logistics system, both domestic and international. (I)

570. Retail Management. Cr. 3
Prereq: MKT 530. Retailing concepts and problems. Competitive structure, store location, organization, buying, inventory control, sales promotion, pricing, credit policy, customer services, research and franchising. (Y)

585. Promotion Strategy. Cr. 3
Prereq: MKT 530. Development of integrated strategies, plans and programs in advertising, personal selling, publicity and promotion, and their implementation in the overall marketing effort. (T)

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)

641. Marketing Research and Analysis. Cr. 3
Prereq: MKT 530, FBE 540. Methods of gathering and analyzing data which will facilitate the identification and solution of marketing problems. Planning the project, data sources for exploratory and conclusive research. Questionnaire construction, sample design, and design of marketing experiments. (T)

644. Sales Management. Cr. 3
Prereq: MKT 530. Organization and direction of a sales organization including selection, training, compensation, supervision, motivation, budgets, quotas, territories, and sales analysis. (T)

646. Public Relations of Business. Cr. 3
Philosophy of public relations of business, history of public relations, study of public opinion, the public relations process, tools of communication, uses of mass media in public relations work, and analyses of methods employed in establishing sound public relations programs. (T)

650. International Marketing Management. Cr. 3
Prereq: MKT 530. The sociopolitical-legal-economic environment of international marketing operations, cross-national consumer behavior, international marketing research, forms of international involvement, direct foreign investment; international product, pricing, distribution and promotion policies; world trade patterns, trade policy, multinational corporations and the world economy. (Y)

703. Marketing Strategy. Cr. 3

Prereq: MKT 603 or equiv. 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)

743. Advertising Management. Cr. 3

Prereq: MKT 703 and consent of adviser. 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)

745. Business Research and Methodology. Cr. 3

Prereq: MKT 703 and FBE 701 and consent of adviser. Study of the objectives and methodologies of research for business decisions. 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 and FBE 721 and consent of adviser. 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. (Y)

747. Consumer and Industrial Buying Behavior. Cr. 3

Prereq: MKT 703 and consent of adviser. 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. (F,W)

762. Business Logistics Management. Cr. 3

Prereq: MKT 703 and FBE 701 and consent of adviser. 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. (Y)

770. Management of Retail Enterprises. Cr. 3

Prereq: MKT 703. Retail mix variables as they relate to products and services, pricing, promotion, place, and operating policies. Merchandising, inventory controls, store operations, and research in monitoring current trends in retail management. (Y)

787. Seminar in Marketing. Cr. 3

Prereq: FBE 701 and MKT 703 and consent of adviser. In-depth exploration of new and important subjects or techniques in marketing. Topics vary by semester; consult adviser. (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 the Office of Graduate Student Services prior to registration. Advanced independent readings under the supervision of member of the graduate faculty in areas of 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: JOSEPH SALES

Foreword

The College of Education of 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 reaccruited periodically 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

Master of Arts in Teaching with majors in

- Elementary Education
- Secondary 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
- English Education (Secondary)
- Evaluation and Research
- Foreign Language (Secondary)
- Health Education*
- History and Philosophy of Education
- Instructional Technology
- Mathematics Education

- Physical Education*
- Preschool and Parent Education
- Reading
- Science Education (Elementary and Secondary)
- Secondary Curriculum and Instruction
- Social Studies Education (Secondary)
- Special Education
- Vocational Education

Education Specialist Certificates with majors in

- Counseling
- Educational Sociology
- Elementary Education Curriculum and Instruction
- English Education (Secondary)
- General Administration and Supervision
- Instructional Technology
- Mathematics Education
- Reading
- Science Education
- Secondary Curriculum and Instruction
- Social Studies Education
- Special Education
- Special Education (Administration)
- Vocational Education
- Vocational Rehabilitation Counseling

Doctor of Education and Doctor of Philosophy degrees with majors in

- Counseling
- Curriculum and Instruction—with emphases in
 - Art Education
 - Bilingual-Bicultural Education†
 - Elementary Education
 - English Education (Secondary)
 - Foreign Language Education (Secondary)
 - K-12 Curriculum
 - Mathematics Education
 - Science Education (Elementary and Secondary)
 - Secondary Education
 - Social Studies Education (Secondary)
- Educational Psychology
- Educational Sociology
- Evaluation and Research
- General Administration and Supervision
- Higher Education—with an emphasis in
 - Adult and Continuing Education
- History and Philosophy of Education
- Instructional Technology
- Reading†
- Special Education
- Special Education (Administration)
- Vocational Education

* Master's degrees with majors in Health and Physical Education, Recreation and Park Services, and Sports Administration are granted through the College of Education but are administered by the Division of Health and Physical Education. See the Division of Health and Physical Education section of this bulletin (page 154) and consult with an adviser in that Division.

† Doctor of Education (Ed.D.) degree only.

Master of Arts Degrees

The Master of Arts degrees offered by the College of Education are administered 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 that section; see pages 91-94.

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 73-80.

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, 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 68-100); 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 13. 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.

An applicant with an undergraduate honor point average below 2.25 must earn a minimum of eight semester credits (three courses) in advanced level post-degree courses with an h.p.a. of at least 3.0 in each course in order to be considered for graduate admission to the College of Education. Course work taken to establish eligibility for admission to graduate study cannot be used toward a graduate degree.

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 68-100.

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 738
Educational Sociology	EDS 763
Evaluation and Research	EER 761
Counseling	CED 670
History and Philosophy of Education	EHP 760

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.

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 each of the College's 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 68-100); 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 13. 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 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 each of the 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 68-100); 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 13. 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 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 64 and 20-28, 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 students 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 Curriculum and Instruction—Bilingual-Bicultural Education, and Reading.

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 25-28) 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.

ACADEMIC PROCEDURES

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 13. The following additions and amendments pertain to the College of Education.

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 Director of the Division of 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 Director of the Division of 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, 150 Administrative Services Building, 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 honor of the degree earned.



ACADEMIC SERVICES

Office: 489 Education

Director: Howard E. Reilly, Professor

Academic Advising: Stuart Itzkowitz, Mary Manion, Toni Nicholas, Leonett White

Teacher Certification: Dolores Stevens

Purposes

The Academic Services Division is responsible for admitting graduate students to the programs of the College of Education, maintaining all student files, and processing and certifying that graduate and teaching certificate requirements have been met. As the initial contact for prospective students at all degree levels, the Division provides information and advice concerning various programs offered by the College, admission procedures, teacher certification and degree requirements, and regulations and policies pertaining to the College and the University.

Counselors in the Academic Services Division may act as temporary advisers for students who have not been assigned permanent advisers or who have special needs. Usually, the counselors act as advisers for in-service teachers working for continuing certification and for those seeking additional certificate endorsements and conversions.

Education Placement Office

This unit serves graduates of the College who have completed initial teacher-preparation or advanced graduate programs and in-service teachers enrolled either now or previously in the University. All persons qualifying for teachers' certificates and those completing graduate programs are urged to register with this office.

Close contact is maintained with school systems in Michigan and in other states. Attempts are made to keep informed of current policies on teacher qualification and selection and trends in teacher supply and demand. College and university staff vacancies for professional positions throughout the United States are listed with this office.

The specific functions of the Education Placement Office are: to assist registrants in preparing their credentials and in securing teaching positions; to assist school administrators in obtaining qualified teachers for the vacancies they may identify; and to assist in-service teachers and graduates who may wish to advance professionally.

Services to Students

Student 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 problems.

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

Dean	Room 441, Education Building; 577-1620
Associate Deans	Room 441, Education Building; 577-1620
Assistant Dean	Room 441, Education Building; 577-1620
Director, Academic Services	Room 489, Education Building; 577-1600
Division Administrator, Administrative and Organizational Studies	Room 441, Education Building; 577-1620
Division Administrator, Teacher Education	Room 441, Education Building; 577-0963
Division Administrator, Theoretical and Behavioral Foundations	Room 441, Education Building; 577-1620

Mailing address for all offices:

Wayne State University
5425 Second Avenue
Detroit, Michigan 48202

ADMINISTRATIVE AND ORGANIZATIONAL STUDIES

Office: 441 Education Building

Division Administrator: Bianca Bernstein, Interim Associate Dean

Professors

Thomas N. Bonner, John W. Childs, Roger A. DeMont, Joella H. Gipson-Simpson, Larry W. Hillman, Wendell M. Hough, R. Duane Peterson, J. Edward Simpkins, Mark H. Smith, Jr., William P. Sosnowsky, Ronald V. Urick

Associate Professors

Burnis Hall Jr., Rita C. Richey, Albert F. Stahl

Graduate Degrees

Master of Education — with majors in Educational Leadership and Instructional Technology

Education Specialist Certificate Programs — with majors in educational administration 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, Educational Administration, Higher Education, and Instructional Technology, are under the guidance of this division.

EDUCATION ADMINISTRATION

In this area the College offers the Master of Education in Educational Leadership, Specialist Certificates and doctoral degrees with a major in general administration and supervision.

The master's degree program is designed to assist teachers in improving their competence in leadership roles in schools and the community. It is a basic, entry-level stage in this discipline.

Individuals aspiring to positions such as assistant principal, principal, director, federal coordinator, assistant superintendent and superintendent should undertake study at the specialist and doctoral levels in general administration and supervision. Within the general administration and supervision specialist and doctoral programs additional areas of emphasis are available, including elementary administration and supervision, secondary administration and

supervision, and special education administration. This latter emphasis prepares persons for positions as special education administrators, directors, supervisors and curriculum resource consultants and specialists.

The educational 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 in Educational Leadership

Admission: see page 63.

DEGREE REQUIREMENTS: General requirements for the Master of Education degree may be found on page 63. This degree in educational leadership is offered only as *Plan B or C* options as defined on page 63; specific requirements are as follows:

The required thirty credits must include EDA 762, 766, 767, 769; 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 63 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 63 of this bulletin.

Education Specialist Certificate in General Administration and Supervision

Admission: see page 63.

Certificate Requirements: A minimum of thirty credits is required for this certificate. Basic requirements are shown on page 64. 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 in General Administration and Supervision

Admission: see page 64.

DEGREE REQUIREMENTS: The general requirements for this degree are stated on page 65. 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 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 64 of this bulletin. The Miller Analogy Test is required for admission.

DEGREE REQUIREMENTS: The general requirements for this degree are stated on page 65; specific requirements are as follows:

Of the thirty credits required for the major, twenty-four must be in educational 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. An emphasis in adult and continuing education is available within the higher education doctoral program.

Doctoral Degrees in Higher Education

Admission: see page 63. Admission to the Ph.D. program in higher education requires completion of the Miller Analogy Test.

DEGREE REQUIREMENTS: The general requirements for the Ed.D. and Ph.D. degrees are stated on page 65; 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 EDA 798, 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 manager, teacher, or trainer.

Students can achieve advanced skill in areas such as:

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

Master of Education in Instructional Technology

Admission: see page 63.

DEGREE REQUIREMENTS: General requirements for the Master of Education may be found on page 63. This degree in instructional technology is offered only as Plan B or C options as defined on page 63. Course requirements in the major area include: I T 611, 710, 711, 715 or 815; and ED 799. Options for the required six credits in General Professional Core courses are shown on page 63.

Educational Specialist Certificate in Instructional Technology

Admission: see page 63.

Certificate Requirements: A minimum of thirty credits is required for this certificate. Basic requirements are shown on page 64. 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.

Doctoral Degrees in Instructional Technology

Admission: see page 63.

DEGREE REQUIREMENTS: The general requirements for these degrees are stated on pages 65-65. Course requirements in the major include IT 611, 710, 711, 715, 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.

COURSES OF INSTRUCTION¹

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. (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. (W)

766. Administrative Leadership in School-Community Relations. Cr. 4

Prereq: EDA 760. Relationships between the school and the community; special reference to social change, community needs and the total school program. (W)

767. Economic Issues in Education. Cr. 3

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

768. Implications of Perception in Human Resource Development. Cr. 4(Max. 12)

Study of recent formulations in perception; implications for uniqueness, cooperation, specialization, self-concept, freedom, creativity. Emphasis on leadership. (F,S)

769. Introduction to Michigan School Law. Cr. 4

Prereq: professional experience. Constitutional and legal factors affecting various educational organizations: local schools, intermediate districts, and state agencies. (F)

771. Organization and Administration of Career Education. Cr. 3

Conceptual framework of career education; organization, implementation and administration of programs. (W)

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 Through In-Service Training. Cr. 2-6(Max. 6)

Planning, design, and implementation of in-service training and of staff development programs. Establishing conditions for effective training and development activities. (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;

¹ See page 461 for interpretation of numbering system, signs and abbreviations

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. 3
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)

875. Planning and Improving School Facilities. Cr. 3
Prereq: EDA 760. Writing educational specifications, developing long range building and curriculum programs, improving and modifying existing buildings; planning for declining enrollments and special education. (F)

888. Workshop in Administrative and Organizational Studies. Cr. 1-10(Max. 10)
Prereq: EDA 760. 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 coordinator of administrative internship programs. 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)

780. Administration of Adult and Continuing Education. Cr. 2
Open only to graduate students. Investigation of processes for building and maintaining sound educational programs; laboratory experience. Determination of individual, organization, and community needs; definition of objectives, establishing policy, selection, and training of leaders, program promotion, interpretation, financing, and evaluation. (I)

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
Prereq: HED 850 or 853. 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 related 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)

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. 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)

512. Instructional Materials Workshop. (L S 637). Cr. 1-3(Max. 3)
Prereq: I T 510 or 511. Design and development of audiovisual materials for use in educational, industrial, and/or human services programs. Students produce an audiovisual presentation. (Y)

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

- Prereq: I T 512. 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. (Y)
- 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 experience in planning and producing films and slides, with and without a camera, for artistic expression and educational communication. Preparing a storyboard, animation in Super 8mm, marking on 16mm film, titling, recording and synchronizing sound tracks, marking on 2x2 slides, photographing 35mm slides. (Y)
- 611. Systems Techniques in Educational Planning and Management. Cr. 4**
Prereq: I T 511. 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. (Y)
- 613. Individualized Instruction. Cr. 3**
Individually paced course in the design and organization of individualized instruction. Current systems of individualized instruction, common individualized designs (including open curriculum), different bases for individualization, and specific designs in the preparation of individualized materials. (Y)
- 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. (Y)
- 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. (Y)
- 711. Instructional Design. (L S 735) (H E 754). Cr. 4**
Prereq: I T 511 or L S 636 and 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)
- 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. (Y)
- 713. Designing Learning Games and Simulations. Cr. 3**
Prereq: I T 613. Role of learning games and simulations in instruction; individual and group uses in individualized instruction. Students design and develop a learning game and a simulation. (Y)
- 714. Seminar in Computer Assisted Instruction. (SPR 857). Cr. 2**
Application and evaluation of command languages, files, and programs of computer-based or controlled instructional languages to the communication media. (Y)
- 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. (Y)
- 716. Computer Managed Instruction. Cr. 3**
Prereq: I T 616. 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. (Y)
- 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. (Y)
- 811. Advanced Instructional Design. Cr. 4**
Prereq: I T 511, 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. (Y)
- 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. (Y)
- 813. Individual Projects in Instructional Technology. Cr. 1-6(Max. 6)**
Prereq: I T 613 or 711 or 713. Students develop instructional technology material packages and devices through individual design and production. (Y)
- 815. Needs Assessment and Program Validity. Cr. 3**
Prereq: I T 715 and admission to doctoral program. 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. (Y)
- 816. Educational Management Systems. Cr. 2**
Prereq: I T 716 and admission to doctoral program. Approaches to instructional management: total system involvement, use of decision-making models. Students develop and apply a management system for a given instructional setting. (Y)
- 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. (Y)
- 911. Advanced Research Seminar and Practicum. Cr. 3**
Prereq: EER 763 and EER 764 or I T 818. 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. (Y)
- 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. (Y)

TEACHER EDUCATION

Division Administrator: Mark H. Smith Jr., Associate Dean
Office: 441 Education Building

Teacher Education Advising: James Boyer
Office: 289 Education Building

Art Education Advising Office: 163 Community Arts Building

Professors

Donald J. Bissett, Asa J. Brown, Kenneth A. Hanninen, Polly Mosteller Hughes, Leonard Kaplan, Peter L. Sanders, Eugene P. Smith, Gary R. Smith, Samuel B. Stone, Frank O. Youkstetter

Associate Professors

Rudi Alec, Fred G. Attebury, Daniel E. Behmer, James Boyer, John S. Camp, Sharon W. Elliott, Annamarie Hayes, Tommie U. Johnson, Bette H. LaChapelle, Stella S. F. Liu, David H. Makinson, Rodolfo Martinez, John T. Norman, 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, Edward Walker, Jr., Marshall Zumberg

Graduate Degrees and Certificates

Master of Arts in Teaching Degree Majors

Elementary Education
Bilingual-Bicultural Education
Science Education
Secondary Education
Bilingual-Bicultural Education
Business Education
Distributive Education
English Education
Family Life Education
Foreign Language Education
Health Occupations Education
Industrial Education
Mathematics Education
Science Education
Social Studies Education

Master of Education Degree Majors

Adult and Continuing Education
Art Education
Bilingual-Bicultural Education
Elementary Education—also provides opportunity for emphasis in childhood education, language arts and reading, literature for children, mathematics education, science education, and social studies education
English Education—Secondary
Teaching English as a Second Language/Foreign Language
Language Education—Secondary
Mathematics Education
Pre-School and Parent Education
Reading
Science Education

Social Studies Education
Special Education
Developmental Disabilities
Emotionally Impaired
Gifted Child Education
Learning Disabilities
Visually Impaired
Vocational Education

Education Specialist Certificate Majors

Elementary Curriculum and Instruction
Mathematics Education
Reading
Science Education
Secondary Curriculum and Instruction
Secondary English Education
Teaching English as a Second Language/Foreign Language
Social Studies Education
Special Education
Vocational Education
Business/Distributive Education
Family Life Education
Industrial Education

Ed.D. and Ph.D. Majors

Curriculum and Instruction—with emphases in
Art Education
Bilingual-Bicultural Education (Ed.D. only)
Elementary Education
K-12 Curriculum
Mathematics Education
Science Education (Elementary and Secondary)
Secondary Education
Secondary English Education
Secondary Foreign Language Education
Secondary Social Studies Education
Reading (Ed.D. only)
Special Education
Vocational Education

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:

- competent in both school and other educational settings;
- competent 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 unique advantages and problems of urban and non-urban settings and are therefore accepting of and knowledgeable about those differences which include exceptionalities;
- able to understand and critically analyze the values and contributions of various racial, ethnic, linguistic, sex and age groups as well as to understand which persons are best able to fulfill the educational needs of

these groups;

capable of promoting an understanding of the dynamics of cultural and linguistic pluralism in our society and are able to fulfill the educational needs of these groups;

able to promote collaboration between teachers, schools, community and students and to make known to these students a variety of professional resources within their community;

capable of creative thought and able to critically stimulate and promote creative thought in their students;

able to identify and use the cumulative results of educational research so they will be better able to build their own unique styles of teaching and evaluate their efforts in solving professional problems;

capable of generating their own ethical behavior and creating an environment such that their students can create their own code of ethics;

capable of serving 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 75 of this bulletin.

Admission to the Master of Arts in Teaching is contingent upon admission to the Graduate School; for requirements, see page 13. Students without appropriate teaching majors and minors 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 University English Proficiency Examination.

Persons interested in the elementary or secondary education M.A.T. should consult with an admissions counselor, Room 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 in course work.

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 66 and 20-28, 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
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.

A professional field experience (student teaching or internship) is an integral part of all M.A.T. programs, for which students register in TED 578; bilingual-bicultural majors must complete an additional field experience: BBE 660. Information on the student teaching phase of the program is presented on page 76 of this bulletin.

Major Requirements: Course requirements for individual majors are presented under the elementary education and secondary education major requirements, as follows:

– Elementary Education Major Requirements

ELEMENTARY EDUCATION: Courses which must be completed prior to entering student teaching include the general professional sequence, shown above (except EHP 760), as well as ELE 629, 631, 639, 650, 660, and 722 or 724; and RDG 712. Courses required for the M.A.T. degree following completion of the certification phase of the program are selected in consultation with an adviser, and must include ED 799.

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 502, 550, 553, 656, 660, 785; ELE 629, 631, 639, 660, and 722 or 724; RDG 712; TED 700; ED 799; 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 cognate 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; ED 799; twelve credits of science education course work including ELE 650; and ELE 629, 631, and 639. Additional courses required for the M.A.T. degree are selected in consultation with an adviser.

— Secondary Education Major Requirements

BILINGUAL-BICULTURAL EDUCATION: Students in an M.A.T. program in secondary education with a bilingual-bicultural endorsement must complete BBE 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 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 700; LED 652, 653; RDG 712; ED 799 and four courses selected from LED 652, 721, 722, 723; and ED 790.

MATHEMATICS EDUCATION: Requirements for this major include TED 700; ED 799; RDG 712; and four courses selected from: MAE 605, 805, 810, 815, or TED 602. Additional courses are selected in consultation with an adviser.

SCIENCE EDUCATION: Requirements for this major include TED 598, 602, 700; ED 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; TED 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 74) 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, the 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, special education, 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.

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 continuing certificates 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. Continuing certificates lapse if the holder does not engage in teaching for a period of five consecutive years or more. 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.

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 Endorsement for Kindergarten through Grade Eight*

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, or three minors. 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.
3. Completion of a professional education sequence is required.

* The candidate for the elementary provisional certificate may be recommended for nursery school approval upon completion of designated requirements including student teaching contacts at Wayne State University Nursery School and other selected sites. Please consult with an adviser.

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, 489 Education Building.

Continuing Certificates

The State Board of Education provides the following two methods by which the continuing certificates can be granted:

Eighteen-Hour Continuing Certificate

For 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.¹

Thirty-Hour Continuing Certificate

For information regarding the Thirty-Hour Continuing Certificate, please consult with the Certification Officer, 469 Education Building.

The additional required credit, as well as the requisite teaching experience must follow the date of issue of the original provisional certificate. The teaching experience of holders of the elementary certificate must be in the elementary school grades (K-8); the teaching experience of holders of the secondary certificate must be in the secondary school grades (7-12).²

Teachers of K-12 subjects: art, dance, music, physical education, and special education may present experience at any grade level from kindergarten through grade 12.

Continuing certification with vocational endorsement requires a planned program. *Students should consult the appropriate area adviser regarding certification for an approved program leading to continuing certification with a vocational endorsement.*

All candidates for an elementary continuing 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, in order to qualify for a continuing certificate. Consult a counselor in Room 489, Education Building, for requirements.

All candidates for a secondary continuing certificate must have completed in their undergraduate or post-graduate preparation a three-credit course in reading in the content areas, in order to qualify for a continuing certificate.

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 212 Education Building.

Early Childhood Endorsement

Early Childhood Endorsement is a nursery school—kindergarten (pre-primary) endorsement for teachers holding the K-8 certificate. 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 a counselor in Room 489 Education Building for information.

Middle School Endorsement

Middle School Endorsement is a grade 5 through 9 endorsement for teachers holding certificates that are K-8 (pre-1970 Michigan Elementary) or 7-12 (Michigan Secondary). The endorsement requires eighteen credits earned *after* the granting of the Provisional Certificate. Students should consult a counselor in Room 489 Education Building for further information.

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 periods are as follows:

Fall semesterthe preceding October, November, December, January
Winter semesterthe preceding April, May, June, July

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.

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, 211 Education Building, during application period.

English Proficiency Examination

All students seeking admission to a teacher certification program are required to pass the English Proficiency Examination of the University prior to admission to the College of Education.

¹ Students not wishing to complete the M.A.T. program should consult with a counselor in 489 Education Building regarding an appropriate planned course of study.

² 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.

Master of Education

Generic admission and degree requirements for the Master of Education degrees offered by this department are presented on page 63. 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 63.

DEGREE REQUIREMENTS: see page 63. This program is offered under Plans B or C (as defined on page 63).

Major Requirements: A minimum of thirty credits is required in this program. Course requirements include ACE 710, 711, 712, HED 780, 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 63. 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 63. 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 a artist, scholar, and 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 in that degree program (see above), students must submit letters of recommendation, an autobiographical statement, and a slide portfolio. A personal interview is also required.

DEGREE REQUIREMENTS: see page 63. This program is offered as a master's Plan B or Plan C, as defined on page 63. 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 a specific area of concentration. A related essay or project

of high 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 63. Students entering this program must possess language proficiency in English and the cognate language of their individual program.

DEGREE REQUIREMENTS: see page 63. The Master of Education in this area is offered under Plans B or C, as defined on page 63. 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 Continuing Certificates.

A large number of courses are available to students in this degree program, to develop a professional specialization in elementary curriculum and instruction. Students may elect to have a general specialization allowing them to choose from many curriculum subject areas or to emphasize the areas of children's literature, early childhood education, reading and language arts, mathematics, science or social studies.

Admission Requirements: see page 63.

DEGREE REQUIREMENTS: see page 63. The Master of Education in this area is offered under Plan C, as defined on page 63. All M.Ed. students in elementary education must demonstrate proficiency in curriculum development by completing successfully two of the following: ELE 610, 726, or 780.

— with a Major in English Education

This degree 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 63. Admission to this program requires a teaching certificate and at least twenty-one credits in English.

DEGREE REQUIREMENTS: see page 63. The Master of Education is offered in this area under Plans A, B, or C, as defined on page 63. 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, those who intend to teach abroad or at community colleges in the United States, 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. Interested students are invited to contact the advising secretary in Room 212, Education Building, for specific information regarding programs and advisers.

— with a Major in Language Education

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 63.

DEGREE REQUIREMENTS: see page 63. The Master of Education in this area is offered under Plans B or C (as defined on page 63), and requires a minimum of thirty credits. Course requirements for the program include TED 700; ED 790 and 799; LED 658, 721, and 722; general professional sequence election of EDS 765, CED 670, and EDP 548; and a minimum of six elective credits selected in consultation with an 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 63.

DEGREE REQUIREMENTS: see page 63. This degree is offered under Plans B or C (as defined on page 63), 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-9 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 63); and six to twelve credits in electives.

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. 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 63); and six to nine credits in electives.

— with a Major in Preschool and Parent Education

This master's program enables students to qualify for a teaching endorsement in early childhood 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 field experiences in a preprimary setting are required. Students without experience 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 63.

DEGREE REQUIREMENTS: see page 63. This degree is offered under Plans A, B, or C (as defined on page 63), and requires a minimum of thirty credits. Required courses include: TED 700 and ED 799; twelve credits in the major field, selected in consultation with an adviser; six credits in general professional courses (see page 63); 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 63.

DEGREE REQUIREMENTS: see page 63. This degree is offered under Plan A, B, or C (as defined on page 63), 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 63); 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 63.

DEGREE REQUIREMENTS: see page 63. This degree is offered under Plans A, B, or C (as defined on page 63), requiring a minimum of thirty credits. Required courses include: TED 700 and ED 799; six credits in general professional courses (see page 63); 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

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 63.

DEGREE REQUIREMENTS: see page 63. This degree is offered under Plans A, B, or C (as defined on page 63), requiring a minimum of thirty credits. Required courses include: SSE 673, 778, 874, and ED 799; six credits in general professional courses (see page 63); and elective courses selected in consultation with an adviser.

— with a Major in Special Education

Students who have completed 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 teachers, approved in special education at the undergraduate level, may continue their preparation in other areas of specialization.

Initial certification (approval) 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 certification (approval) in the program for the learning impaired is secured at the master's level.

Preparation programs for the developmentally disabled (mentally impaired) and visually impaired prepare specialists in classroom intervention, resource teachers, teacher counselors, program consultants, program directors, and college and university teachers.

As interest has grown in the education services for gifted and talented students, the Special Education unit has developed and implemented a graduate specialization in Gifted Child Education. Admission to this area is open to both teachers and administrators with or without previous training in special education. Specific course requirements for this major area may be applied to both master's degree and education specialist certificate programs, and may be relevant to curricular areas. No certification or endorsement is awarded as none currently exists at the state level.

Graduate advisers are:

Developmentally disabled Virginia Pearson, Marshall Zumberg
Emotionally impaired Asa Brown, Paula Wood
Gifted child Beverly Parke
Learning impaired Virginia Pearson, Richard Parres
Visually impaired Kenneth Hanninen

Admission Requirements: see page 63.

DEGREE REQUIREMENTS: General degree requirements for Master of Education programs are presented on page 63. This degree program in special education is offered under Plans A, B, or C, as defined on page 63. Courses required for the various major concentrations available are as follows:

Developmental Disabilities: A minimum of thirty-two credits is required for this concentration including SED 701, 714, 715, 784, and ED 799. The general professional course requirements are EDP 738, EER 761, and EDS 763.

Emotionally Impaired: A minimum of forty-seven credits is required for this concentration including SED 776, 777, 779, 782, 783, 784, 785, and ED 799. The general professional course requirements are EDS 765, EER 761, and EDP 622. Electives should include EDP 749.

Gifted Child: A minimum of thirty-three credits is required for this concentration including TED 602, 614, 700; ED 799; ELE 785; SED 602; and SCE 607. The general professional course requirements are EER 761; EHP 760; and EDP 738. Six credits are to be elected in consultation with an adviser.

Learning Impaired: A minimum of thirty-five credits is required for this concentration including SED 776, 777, 779, 782, 783; 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.

Visually Impaired: A minimum of forty-one credits is required for this concentration, including SED 503, 560, 561, 562, 563, 564, 665; TED 798; and ED 799; six credits in general professional courses (see page 63); and six elective credits chosen in consultation with an adviser.

— 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 continuing 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 continuing secondary certification, and full vocational endorsement.

Admission Requirements: see page 63.

DEGREE REQUIREMENTS: see page 63. The program consists of a minimum of thirty credits. Required courses include: V E 782, 783, 898, 699; 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.

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 63.

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 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 profession development.

Admission Requirements: see page 64.

DEGREE REQUIREMENTS: see page 65. 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; IT 611; EDA 865; and ACE 711.

Advising Offices

Information, written descriptions of programs, and referrals to advisers may be obtained from the following advising offices: Art Education, Room 163, Community Arts Building; Business Education, Distributive Education, Room 273, Education Building; Family Life Education, Health Occupations Education, Room 273, Education Building; and Industrial Education, Room 281, Education Building; all other programs of the Division from Room 212, Education Building.

COURSES OF INSTRUCTION¹

Teacher Education Division (TED)

- 515. Analysis of Elementary School Teaching. Cr. 1-3**
Overview of structure and purposes of American education; analysis of teaching including classroom management and unit and lesson planning in relation to the elementary school. Three semester credits are required for admission to an internship or student teaching experience. (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)
- 525. Teaching the Emerging Adolescent in Middle School. Cr. 3**
Prereq: teaching experience. Assessment of the psychological and social development of middle school students. Implications for instructional group organization, classroom ecology, planning, student-teacher relationships, classroom climate, and individual learning behavior. Alternative approaches to curriculum and instruction in middle school. (I)
- 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)
- 544. (DNC 544) Movement and Dance in the Music Class. Cr. 2**
Exploration of the common basis for music and dance and the provision of a range of movement experiences for the music teacher. The philosophy of Orff Schulwerk which stresses the elemental relationship between language, music, and movement. (W)
- 565. Pre-Student Teaching Field Experience for Secondary Majors. Cr. 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)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

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

704. Role of the Team Leader. Cr. 3

Prereq: consent of instructor and selection as a team leader in a special teacher education program. Role and responsibilities of team leaders in the teacher corps or master teacher in related programs. (I)

811. Supervision of Student Teachers. Cr. 3

Prereq: teaching experience. Program of teacher-education and of student teaching as it operates to further the development of pre-service teachers. Research and recent developments in the field. (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. 2

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)

829. Research Seminar: Curriculum and Instruction II. Cr. 1-3

Prereq: TED 828. Application of principles of research design. Presentation of illustrative research proposals: reviews and critiques. (I)

851. Theory and Process of Teaching. Cr. 3

Prereq: admission to doctoral or education specialist program. Analysis and evaluation of selected theories of teaching. Critique of research on questioning strategies, teacher influence patterns, teacher roles, teacher personality patterns, management of instruction in polycultural settings. (I)

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)

875. Issues in Adult Education. Cr. 2

Prereq: doctoral candidate with 18 credits completed beyond the master's degree. Required of all doctoral students in higher education concentration. Evaluation of differing goals in adult and continuing education. Review of current literature in adult learning, study of contrasting organizational structures and styles. (I)

890. Seminar in Adult and Continuing Education Cr. 3

Prereq: ACE 875. Preparation and evaluation of research papers in adult and continuing education. (I)

Art Education (AED)

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)

511. Art for Occupational Therapy. Cr. 2-3

Material fee as indicated in *Schedule of Classes*. Studio-shop experiences with wood, metal, and plastics. Use of hand and power tools in cutting, shaping, forming, connecting, and finishing. Background for planning or production of adaptive devices and understanding of materials and processes in therapeutic activity. (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)

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 experience in planning and producing films and slides with and without a camera. Preparing a storyboard, marking on film, animation, titling, editing, splicing, producing slides without a camera, photography for color slides, recording and synchronizing sound tracks. Methods, materials and processes suitable for teaching film in schools, producing visual aids, or producing film for artistic expression. (F)

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

Prereq: I T 512. 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: AED 118 or 522. 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)

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)

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)

659. Culture and Language in Bilingual/Bicultural Education. Cr. 1-3

Prereq: BBE 656. Research and application of multicultural activities for designing processes to bring language and culture, and instruction in English, into the classroom. (I)

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)

902. Public Policy and Bilingual/Bicultural Education. Cr. 3

Prereq: BBE 901. Evolution of bilingual education policy. Program implementation against background of the culture of the school, community and state. (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)

904. Analysis of Second Language Acquisition in Bilingual Education. Cr. 3

Principles, philosophy, and problems involved in teaching linguistically different children. Emphasis on bilingualism as a world problem. (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)

532. Business/Distributive Education Methods: Typewriting. Cr. 3

Prereq: TED 355, BDE 530 or consent of instructor; coreq: VE 541 or BDE 553. How to determine and develop necessary typewriting (keyboarding) skills for office occupations. Methods, materials, and equipment for teaching typewriting (keyboarding) and related skills. (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)

538. Business/Distributive Education Word Processing IV. Cr. 3

Principles and procedures for designing, teaching and evaluating a competency-based word processing program in a business or educational setting. (I)

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)

633. Special Problems in Business Education. Cr. 1-6(Max. 6, M.Ed.; max. 12, other advanced degree programs.)

Prereq: business teaching experience. Special workshops and short term seminars in business subjects. (S)

Elementary Education (ELE)

602. Seminar in Early Childhood. Cr. 4

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)

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. 2

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)

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 - 8. 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-8. Cr. 3

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

631. Reading Instruction: Preprimary - 8. 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-8. 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-8. 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-8. Cr. 3

Developing competence in school mathematics programs: objectives, procedures, materials, organizational patterns, evaluation. (T)

650. Science Curriculum: Preprimary-8. Cr. 3

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-8. 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)

670. Fostering Creativity in the Elementary School Child. Cr. 3

Ways and means of developing children's creative abilities in the teaching-learning process. The implications of creativity in educational experiences of children. (I)

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)

612. **English Composition in Secondary Schools. Cr. 3**
Prereq: directed or regular teaching. 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. (LS 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: teaching experience or directed teaching. 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)

550. **Introduction to Modern Languages in Secondary Schools: Methods I. Cr. 3**
Prereq: or coreq: TED 355 and EDP 331 or TED 515 and EDP 531. Fundamental theory and practice of modern foreign language instruction. Basic classroom management techniques and preparation of teaching devices. Students micro-teach lessons which emphasize the listening and speaking language skills. (I)

551. **Teaching Modern Languages in Secondary Schools: Methods II. Cr. 3**
Prereq: LED 550; coreq: TED 356. Foreign language teaching techniques and the preparation of teaching devices for student teaching. Students micro-teach lessons which emphasize the reading and writing language skills. (I)

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**
Prereq: LED 652. 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)

661. **Internship in Teaching English as a Second/Foreign Language. Cr. 1-12**
Prereq: admission to TESL/TEFL Internship. Offered for S and U grades only. Internship in a TESL/TEFL setting; assessment of cultural, educational, and linguistic needs of students with limited English-speaking ability; implementation of programs to meet those needs. (I)

720. **Advanced Workshop in English as an International/Intranational Language. Cr. 1-8(Max. 8)**
Special aspects of English used as both an international and intranational language; general theory and specific practices; English-language problems and practices of countries which are geographically associated. (Y)

722. **Linguistics in the Language Classroom. Cr. 2-4**
Relationship of theoretical and applied linguistics to the goals and teaching techniques of language teachers. (Y)

723. Transnational/Transcultural Aspects of TESL/TEFL Teaching. Cr. 1-6

Problems and approaches of individual countries, and among countries, in teaching English as a second language or as a foreign language. (I)

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 graduate credit; credit only in College of Education. Basic concepts of elementary school mathematics; set, systems of numeration, mathematical systems, real numbers and their applications, introduction to algebra. (F,W)

506. (MAT 517) Mathematics for Elementary School Teachers II. Cr. 3

No graduate credit; credit only in College of Education. Introduction to geometry, topics in algebra, topics in probability and statistics, computer applications in elementary school mathematics. (F,W)

510. (MAT 518) Mathematics for Middle and Junior High School Teachers I. Cr. 3

No graduate credit; credit in College of Education only. Basic concepts of geometry; elementary concepts of topology; introduction to elementary functions and their applications. (F)

511. (MAT 519) Mathematics for Middle and Junior High School Teachers II. Cr. 3

Elementary functions and their applications; analytical geometry; intuitive concepts of differential and integral calculus; computer applications in middle and junior high school mathematics. (W)

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

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

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. 3

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

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. 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

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)

607. Science Education for the Gifted, K-12. Cr. 3

Prereq: SED 602. The impact of science instruction on the development of gifted learners at the elementary and secondary school levels. Appropriate areas of scientific investigation with criteria for selection and evaluation of learning strategies, activities, and materials for the gifted. (B)

608. Teaching Environmental Studies. Cr. 3-6

For teachers of all academic disciplines and from all school levels, as well as persons of other occupational interests. Environmental problems, possible solutions, and their implications for classroom teaching and curriculum. (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)

805. Recent Research in Curriculum Development and Instruction in Science Education. Cr. 3

Analysis of recent research in science education, K-12, and consideration of implications for curriculum designing in science and for improvement of classroom teaching. Consideration of research tools needed by teachers of science. (I)

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)

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

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). 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. (SPD 514) Introduction to Speech Science. Cr. 3

Prereq: SPD 508, SPD 509. An overview of the basic processes of speech production; presentation of the principles of psychology acoustics, phonetics, linguistics, semantics, and neurology involved in normal speech production. (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: MR/POHI. Cr. 3

Specialized instructional approaches, evaluation, techniques, curriculum and instructional aids for the mildly- to profoundly-impaired learner. (Y)

514. Behavior Management: MR/POHI. 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. (SPD 530) Introduction to Speech Pathology. Cr. 3-4

Development of speech correction in education; classification, basic principles, methods of diagnosing and treating speech deficits; clinical observations required for majors only. (F,S)

531. (SPD 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. (SPD 508) Phonetics. Cr. 3

Multisensory study of sounds of the English language, emphasizing acoustic, physiologic, kinesiological approaches. (F)

533. (SPD 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. (SPD 536) Clinical Practice in Speech Pathology. Cr. 2 (Max. 8)

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. (SPD 532) Normal Acquisition and Usage. Cr. 3

Language development in children and the associated areas of emotional and motor development; language stimulation techniques and programs. (F)

540. (SPM 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. (S)

541. (SPM 544) Practicum in Audiology. (AUD 544). Cr. 1

Prereq: SPM 450. No credit for graduate students in audiology. Material fee as indicated in *Schedule of Classes*. Supervised training and practice for clinical certification. (I)

550. Introduction to Education of the Deaf. Cr. 2

Prereq: SED 503. History, programs and principles in the education and guidance of the hard-of-hearing and the deaf. Fundamentals of teaching speech, languages and academic subjects; development of speech and language. Observations of community services for the deaf required. (I)

551. (SPM 542) Auditory Training and Speech Reading. (AUD 542). Cr. 3

Prereq: SPM 540. Principles and methods of auditory training and speech reading for the hearing impaired. Observations required. (W)

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. Cr. 1-6(Max. 8)

Prereq: teaching experience. 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)
- 632. (SPD 632) Organization and Methods in Speech Pathology. Cr. 3**
Class organization, management, materials, teaching aids, techniques. (I)
- 636. (SPD 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. (SPD 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)
- 660. (SPD 660) Introduction to Articulation Disorders. Cr. 3**
Prereq: SED 530. An introduction to basic concepts related to acquisition and manifestations of articulation disorders in children and adults. (F)
- 661. (SPD 661) Introduction to Stuttering. Cr. 3**
Prereq: SED 530. An introduction to basic concepts related to acquisition and manifestations of stuttering disorders in children and adults. (F)
- 662. (SPD 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. (W)
- 664. (SPD 664) Language Pathology: Etiology and Diagnosis. Cr. 3**
Prereq: SED 530 and 532. Descriptions, etiology, methods of diagnosis of language disorders in children. (F,S)
- 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)
- 702. Curriculum Planning for the Gifted and Talented. Cr. 4**
Prereq: SED 602. Planning curricular practice for the gifted and talented, K-12; selecting, implementing, evaluating, and modifying curriculum for this population. (Y)
- 703. Research in Gifted Child Education. Cr. 3**
Prereq: SED 602. Methods and procedures of research; the current research in gifted education. Conduct of research; what research says about the gifted. (B)
- 704. Creativity and the Gifted Child. Cr. 3**
Relationship between creativity and giftedness; exploration of these concepts and their implications for program development. K-12, and student assessment. (Y)
- 714. Curriculum Development for the Developmentally Disabled. Cr. 1-12 (Max. 12)**
Prereq: SED 511, 513. Classroom and field experiences in selecting, implementing, evaluating, and modifying appropriate learning curricula for the developmentally disabled (mentally impaired, multi-handicapped), including cognitive, affective, language, self-care, and prevocational and actual vocational skills. Topics to be announced in *Schedule of Classes*. (I)
- 715. Educational Diagnoses and Interventions: Moderately/Severely Impaired. Cr. 3**
Prereq: SED 511. Specific diagnostic educational approaches to motor, affective, and cognitive disabilities of the moderately/severely impaired. Practical assessments, programs and theoretical systems will be investigated at the pre-school, elementary, secondary and post-school levels. (B)
- 730. (SPD 736) Internship in Speech Pathology. Cr. 2 (Max. 8)**
Prereq: written consent of instructor. Advanced professional experience in clinical speech pathology. (F)
- 731. (SPD 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. (SPD 702) Advanced Principles and Methods in Speech Science. Cr. 3**
Prereq: SED 507. Integration of the information from various disciplines involved in the production and measurement of speech and language. (F)
- 736. (SPD 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. (SPD 760) Advanced Clinical Methods: Articulation. Cr. 3**
Prereq: SED 660. The etiology, diagnosis and advanced treatment regimens of articulation disorders in children and adults. (F)
- 761. (SPD 761) Advanced Clinical Methods: Stuttering. Cr. 3**
Prereq: SED 661, SPD 736. The etiology, diagnosis and treatment of stuttering disorders in children and adults. (S)
- 762. (SPD 762) Advanced Clinical Methods: Voice Disorders. Cr. 3**
Prereq: SED 662. The etiology, diagnosis and treatment of voice disorders in children and adults. (W)
- 763. (SPD 763) Advanced Clinical Methods: Aphasia. Cr. 3**
Prereq: SED 663. Assessment and remediation principles designed for the adult aphasic. (Y)
- 764. (SPD 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. (SPD 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. (SPD 766) Advanced Clinical Methods: Neuromuscular Disorders. Cr. 3**
The etiology, diagnosis and treatment of neuromuscular disorders in children and adults. (F)
- 768. (SPD 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)

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
Prereq: SED 570. 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 570. 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 or 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. (SPD 809) Research in Speech Science. Cr. 3 (T)

837. (SPD 839) Seminar in Speech and Language Pathology. Cr. 3(Max. 18)
Topics to be announced in *Schedule of Classes*. (T)

838. (SPD 838) Seminar in Speech Science. Cr. 3 (Max. 12)
Topics to be announced in *Schedule of Classes*. (T)

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)

606. (SPE 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)

Speech Education (S E)

537. (SPC 504) Communication in the Black Community. 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)

THEORETICAL AND BEHAVIORAL FOUNDATIONS

Division Administrator: Bianca Bernstein, Interim Associate Dean
Office: 441 Education Building

Professors

Edward G. Adamek, Jr., Walter J. Ambinder, Bianca Bernstein, Arthur Brown, Louis J. Cantoni, Juanita Collier, John J. DeWitt, Guy T. Doyal, Claire Irwin, Donald Marcotte, Barry S. Markman, Leon T. Ofchus, John J. Pietrofesa

Associate Professors

Arnold Coven, John A. George, Stephen B. Hillman, Alan M. Hoffman, JoAnne Holbert, Elizabeth Hood, Sandra L. Lyness, Paul W. Sullivan, Maurice O. White

Assistant Professor

Henderson Hendrix

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 Certificate Programs — with majors in educational sociology, counseling, 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, 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 fields of counseling. Sub-specializations include school counseling as well as adult/agency counseling and substance abuse counseling.

Master of Arts degree programs are mainly 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 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 in Counseling

Admission: Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13. 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-four credits. These programs are offered under the following master's degree options:

Plan B: Forty-four credits of course work including a three credit essay.

Plan C: Forty-four 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 708, 715, 716, 803; and EDP 749. Gerontology certification 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 year after admission into the program.

Master of Education in Counseling

Admission: For requirements, see page 63. 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 63. 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 forty-six 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 715, 716; SED 503; EDP 545 and 548.

Additional electives and General Professional courses are selected in consultation with an adviser.

Education Specialist Certificate in Counseling

Admission: In addition to meeting the admission requirements for Education Specialist Certificate programs stated on page 63, 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, 704, 708, 715, 716; 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 in Counseling

Admission: In addition to meeting the basic admission requirements stated on page 64, applicants to the counseling doctoral program must take the Miller Analogies Test and submit a counseling interview tape.

DEGREE REQUIREMENTS: Basic degree requirements for the Ph.D. and Ed.D. programs are stated on pages 65-65. 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 the Division of Educational Services and Research of 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 in Educational Evaluation and Research

Admission: See page 63.

DEGREE REQUIREMENTS: A minimum of thirty credits is required for this degree under Plans A, B, or C as defined on page 63. 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 in Educational Evaluation and Research

Admission: Applicants to doctoral program in this area must meet the admission requirements stated on page 64.

DEGREE REQUIREMENTS: Basic degree requirements for Ph.D. and Ed.D. program are stated on page 65. 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: school and community psychology, and a three-year program in marriage and family therapy. 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 therapy program also allows the student to qualify for the Limited License as a Psychologist in the State of Michigan.

Both of these programs serve as a base for further study at the Ph.D. level, which would 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 will complete a form obtained from the Division, complete a testing program, and be interviewed by an admissions committee. All admissions requirements must be completed before the first day of February.

Master of Arts in School and Community Psychology

Admission: Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13. 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 1. 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, 749, 756, 761, 762, 771, 832; EER 563; and ED 799.

Marriage and Family Therapy Requirements:

The Master of Arts degree is offered in this area under the following options:

Plan B: A minimum of fifty-nine credits including a three credit essay.

Plan C: A minimum of fifty-nine credits in course work including a terminal project.

Course work requirements for either plan include: EDP 622, 719, 720, 724, 737, 741, 743, 749, 751, 752, 756, 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 500 clock hours is required.

Master of Education in Educational Psychology

Admission: See page 63.

DEGREE REQUIREMENTS: Basic degree requirements for the Master of Education degree are stated on page 63. A minimum of thirty credits is required for this program and all courses are selected in consultation with an adviser.

Doctor of Philosophy in Educational Psychology

Admission: Applicants to the Ph.D. program must meet the admission requirements stated on page 64. 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.

DEGREE REQUIREMENTS: The basic degree requirements for the Ph.D. degree are stated on page 65. This program requires a minimum of ninety-six credits beyond the baccalaureate degree. All doctoral students must complete EDP 821, 823, 824, 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 in Educational Sociology

Admission: See page 63.

DEGREE REQUIREMENTS: Basic requirements for the Master of Education degree are stated on page 63. 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 Plans B or C as defined on page 63. Students are urged to complete at least six credits in electives outside the major.

Educational Specialist Certificate in Educational Sociology

Admission: See page 63.

CERTIFICATE REQUIREMENTS: A minimum of thirty credits is required for this certificate. Basic requirements are stated on page 64. All *Plans of Work* are individually developed in consultation with an adviser.

Doctoral Degrees in Educational Sociology

Admission: See page 64.

DEGREE REQUIREMENTS: Basic degree requirements for Ed.D. and Ph.D. programs are stated on page 65. All courses in the major are selected in consultation with an adviser.

EDUCATION HISTORY AND PHILOSOPHY

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 in History and Philosophy of Education

Admission: See page 63.

DEGREE REQUIREMENTS: Basic requirements for the Master of Education degree are stated on page 63. A minimum of thirty credits is required including a minimum of twelve credits in the major. This degree is offered under Plans A, B, or C as defined on page 63.

Doctoral Degrees 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. An option in educational policy studies is available for

students majoring in history and philosophy of education.

Admission: See page 64.

DEGREE REQUIREMENTS: Basic degree requirements for the Ed.D. and Ph.D. programs are stated on page 65. 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 in Vocational Rehabilitation Counseling

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13.

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 in Vocational Rehabilitation Counseling

Admission: See page 63.

CERTIFICATE REQUIREMENTS: A minimum of thirty credits is required for this certificate. Basic requirements are stated on page 64. All course requirements are selected in consultation with an adviser.

COURSES OF INSTRUCTION¹

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)

570. Theory and Practice of Interpersonal Helping. Cr. 3
For non-counseling majors. Introduction to theory and practice of interpersonal helping. Practice in interview techniques, basic helping skills, crisis intervention and referral procedures. (I)

604. Student Personnel Work in Higher Education. Cr. 4
An overview of guidance services appropriate for higher education. Variety of student types and the interaction of students and their environment. (Y)

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)

662. Workshop in Career Education. Cr. 1-8
For teachers, counselors, principals and agency personnel who are responsible for career education. Emphasis on developing, evaluating and refining career education strategies (lessons, modules, or units). (I)

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)

675. Introduction to Human Sexual Behavior. Cr. 2
Behavioral and attitude changes in sex behavior as it affects the role of the counselor and sex educator. (I)

677. Behaviorism and Sex Counseling. Cr. 2-3
Prereq: CED 675, 676. A consideration of behavioral approaches to sexual development. Principles of learning underlying diagnosis and treatment of sexual problems provide the foundation for understanding techniques such as desensitization, imagery, and conditioning. (I)

700. Introduction to Group Work. Cr. 2
Prereq: CED 607 or 670 or equiv. Coreq: 601. 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: 600. 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. 3-8(Max. 8)
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 and 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. (F,W)

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. (Y)

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)

710. Internship in Marriage and Family Counseling. Cr. 3-15(Max. 15)
Prereq: CED 721. Offered for S and U grades only. Students counsel in local agencies under the supervision of an experienced therapist three working days each week. A minimum of 15 credits or 1256 clock hours required for the Master of Arts degree. (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,W)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

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. (F,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 Ed.D. 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)

805. Advanced Student Personnel Work. Cr. 2

Prereq: CED 604, 702, HED 854 or HED 850. For students in student personnel work. Current issues and trends in the field; ways to assess impact of college on students; role of student personnel worker; student concerns and issues; innovative personnel programming. (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 Educational and Occupational Information. 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)

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. (T)

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)

767. Small Computer Applications in Research and Evaluation I. Cr. 3

Prereq: EER 765, CSC 501; CSC 637 recommended. Overview of small computers; emphasis on applications in educational setting and on employment of evaluation and research methodology. (I)

768. Small Computer Applications in Research and Evaluation II. Cr. 3

Prereq: EER 767. Understanding small computer systems in depth; emphasis on modifying systems to employ evaluation and research methodology. (I)

861. Measurement Problems in Medical Education I. Cr. 3

Prereq: EER 761 or equiv. Development and validation of achievement tests in medical education. Dimensionality and applied use of tests, profile analysis, cut-off scores, scoring systems, decision making and measurement of interpersonal skills. (Y)

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

Educational Evaluation And Research (EER)

562. Statistical Readings in School and Community Psychology. Cr. 1

Prereq: admission to school and community psychology program. Introduction to readings of descriptive and inferential statistical studies in school and community psychology. (T)

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. (T)

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. (T)

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. (T)

Educational Psychology (EDP)

541. Mental Hygiene and Its Relation to the Problems of Education. Cr. 2-3

Provides understanding of the necessary conditions underlying mental health, and a sense of what teachers can and cannot do to foster emotionally healthy and well-integrated personalities in children and youth. (Y)

545. Child Psychology. Cr. 2-3

Basic concepts, research findings and problems regarding child development as they apply to the school and home. (T)

548. Adolescent Psychology. Cr. 2-3

Basic concepts, research findings and problems regarding adolescent development as they apply to the school and home. (T)

621. Foundations of Educational Psychology. Cr. 3

Introduction to current issues in educational psychology through lecture and field-laboratory experiences. (Y)

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)

631. Behavior Modification. Cr. 2-3

Introduction to the systematic application of behavior modification and operant conditioning principles in the classroom and other social settings. Identifying behavior problems, counting behavior, specifying techniques for either increasing or decreasing the frequency of behavior and evaluating results of those techniques. Primarily for classroom teachers. (I)

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)

649. Mental Health and Sexuality. Cr. 2

Consideration of the role and function sex development plays during childhood, adolescence, and adulthood. Gender identity discussed. (I)

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. (Y)

720. Advanced Marriage and Family Therapy. Cr. 3

Prereq: EDP 719. Advanced development of skills and knowledge of therapy with couples and families. (Y)

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. (F)

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. Seminar on Emotional Disturbances - Treatment and Behavior Control. Cr. 3

Understanding of the processes relevant to emotional maladjustment. (W)

738. Dynamics of Human Behavior. Cr. 2-3

Application of Kurt Lewin's principles of topological and vector psychology to human behavior in educational settings. (S)

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

Prereq: admission to educational psychology/behavioral psychology sequence. 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. (F)

744. Applications II: Behavioral Psychology and Academic Behavior. Cr. 4

Behavioral techniques used in dealing with the academic behavior of both groups and individuals. (W)

745. Experimental Analysis of Behavior. Cr. 3

Analysis and synthesis of the results and methodology of studies in the principles of behavioral psychology. (I)

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. (T)

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 an 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. (F)

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)

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. (S)

761. Comparative Education. Cr. 3
Extant and emerging educational systems of other nations: political, economic, and cultural factors. Orientation for study and research abroad. (B)

762. History of Education in the United States. Cr. 3
Historical background of selected contemporary problems, issues, and movements in education. (B)

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. 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. (S)

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)

752. Sexual Rehabilitation Counseling of the Disabled. Cr. 2
Prereq: master's degree applicant or consent of instructor. Philosophy, objectives, nature, and scope of sexual rehabilitation counseling with the disabled. Information, methods, and procedures that facilitate sexual adjustment. (B)

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. BEAUFIT

Foreword

Continuing education is important to the engineer interested in keeping pace with the rapid growth in science and technology and in preparing for changes in his/her responsibilities. Hence, many engineers recognize the need for graduate education. In the midst of a 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 engineering programs of this College offers opportunities for graduate study at the master's and doctoral level in the traditional disciplines.

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 as well as 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 engineering, and from established engineers pursuing advanced degrees. Criteria for admission are restrictive, and a high standard of performance is expected of successful candidates; in short, the challenges are great, but the potential rewards are equally promising.

Graduate Degree Programs

The College offers the Master's and Doctor of Philosophy Degrees in chemical, civil, computer, electrical, industrial, mechanical, and metallurgical 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. However, after completion of a Bachelor of Science degree in engineering and one or more years of on-the-job experience, additional training at the graduate level is often desirable, with or without participation in a research program.

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.

Interdisciplinary Study: The College offers an interdisciplinary master's degree program in electronics and computer control systems. Completion of this program requires the election of courses in mechanical engineering, electrical and computer engineering, and in computer science. For further information regarding curricular requirements, students should contact the Executive Associate Dean of the College; telephone: 577-3861.

Hazardous Waste Management Certificate Program: The College offers a certificate program in this area through the combined efforts

of the Departments of Chemical and Metallurgical Engineering. For requirements, see page 106.

Graduate Degrees and Certificates

Master of Science in

- Chemical Engineering
- Civil Engineering
- Computer Engineering
- Electrical Engineering
- Electronics and Computer Control Systems
- Industrial Engineering
- Operations Research
- Mechanical Engineering
- Metallurgical Engineering

Doctor of Philosophy in

- Chemical Engineering
- Civil Engineering
- Computer Engineering
- Electrical Engineering
- Industrial Engineering
- Operations Research
- Mechanical Engineering
- Metallurgical Engineering

Certificate in Waste Management

Engineering Graduate Internship Program

A Graduate Engineering Internship Program is available for engineering graduate students. Eligible and interested students should inquire at the Engineering Office, and at the University Placement Office.

Research Centers and Programs

Opportunities exist at both the graduate and advanced undergraduate levels for students to participate in the programs of the research centers.

The Research Institute for Engineering Sciences promotes fundamental multi-disciplinary research programs in science and engineering. This Institute provides a means for researchers from various schools and colleges in the University to collaborate on research projects, with the assistance of College of Engineering graduate students. Current research programs include fundamental studies on molecular interactions using molecular beams, laser-driven chemical reactions, studies of the non-equilibrium chemical dynamics of atmospheric and combustion systems, advanced computer applications in control and system prognosis, and advanced mathematical, numerical and graphical techniques for the solution of complex engineering problems.

The College of Engineering Energy Program provides a focal point for interdisciplinary energy-related research in the College. Major areas of interest include the production and evaluation of alternate fuels ranging from the nuclear production of gaseous fuels, the extraction of oil from shale rock and the characteristics of composite coal-oil mixtures to the effective usage of solar energy and the combustion characteristics of micro-pulverized coal systems. Extensive use is made of advanced numerical techniques in studies of combustion mechanisms. A wide range of experimental facilities are available for investigation of conventional and alternate fuels, and in the study of the energy conservation and environmental impact of alternate fuel systems.

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. Major areas of research include trauma biomechanics, mechanical bases for low back pain, human locomotion studies, orthopedic biomechanics, sleep disorders, chemical assay of anticoagulants in blood, blood-compatible surfaces, and the application of pattern-recognition techniques to biological signals.

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 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 **College of Engineering Health Systems Productivity Program** provides an interdisciplinary environment in which engineering faculty and students can participate in the analysis, design and improvement of a wide array of systems which serve society. Current efforts include work in health care management and planning, police patrol scheduling, and measurement of productivity in city government departments.

The **College of Engineering Manufacturing Engineering Program** coordinates interdisciplinary interests in manufacturing education and research. Combining faculty interests in material properties and behavior, machine design and use, productivity and quality control, and computer-aided manufacturing, the program provides a laboratory forum for studying some of the most important problems facing industry. Students at both undergraduate and graduate levels have access to the courses and facilities of the program.

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. 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, metallurgical measurements, metallurgical processing, electron microscopy, optical metallography, roadway and building materials, soil mechanics, sanitary engineering, structural modeling, supercritical transports, polymers, communications, computers, networks, opto-electronics, semiconductor fabrication (including a class-100 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 PROCEDURES

For complete information regarding academic rules and regulations, students should consult the Graduate School section of this bulletin beginning on page 13. 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 Engineering:

Dr. Haluk Aktan; 577-3825

Electrical and Computer Engineering:

Dr. Robert Barnard; 577-4801

Industrial Engineering and Operations Research:

Dr. Vinod Sahney; 577-3872

Mechanical Engineering:

Dr. Trilochan Singh; 577-3845

Metallurgical Engineering:

Dr. Ralph Kummler; 577-3800

Interdisciplinary Graduate Programs:

Dr. Pieter K. Rol, Executive Associate Dean; 577-3861

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, that is, 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 at least a 'B' (3.0) average to satisfy degree requirements. A maximum of eight credits with 'C' grades may be applied toward a graduate degree, provided that such grades are offset by an equal number of credits earned with 'A' grades. Students receiving a 'C' grade are immediately placed on probation and these students' performances are closely monitored by the Departmental Graduate Committees. Students may be allowed to repeat a maximum of two courses to improve their honor point average, but only if the repeat of a course is approved before taking the course for the second time.

A student with six credits earning grades of 'C' may be terminated from the graduate program, even though his/her honor point average exceeds 3.0.

To be awarded a graduate degree, the student must have achieved at least a 3.0 ('B') average in all major required courses (see departmental requirements for details) and an average of 3.0 ('B') in all other courses used to satisfy degree requirements. In some cases, a minimum grade of 'B' is required in selected core courses; students should refer to specific departmental guidelines for these courses.

All course work must be completed in accordance with the academic procedures of the Graduate School governing graduate scholarship and degrees; see pages 20-28.

Graduation

Final Report: A final report on each candidate certifying the completion of degree requirements, and an updated cumulative record will be submitted to the Engineering Graduate Officer by the major department.

Deadlines: Consult the schedule prepared for each commencement by the Engineering Graduate Office.

Commencement: Information concerning commencement announcement, caps, gowns, invitations, tickets, time and place, assembling and other items of importance will be mailed to the graduate by the Class Board prior to the event.

Attendance at commencement is mandatory for the master's candidate. One may be excused for reasons of personal health, family illness or residence at a considerable distance from Detroit. Request for excused absence should be directed to the Engineering Graduate Office.

MASTER OF SCIENCE PROGRAMS

The degree of 'Master of Science in (major field)' is offered in chemical, civil, computer, electrical, industrial, mechanical and metallurgical 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 13. In addition, applicants to the engineering master's degree programs must 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), an 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 minimum acceptable upper division h.p.a. of 3.0. 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.

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 consists of 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 requires a minimum of thirty-two credits in course work. A thesis is not required.

— 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.

— Minors/Cognates

A minimum of six credits should be taken in areas other than the student's major. This requirement may be waived if the student received an undergraduate degree in a discipline other than his/her graduate degree major.

— Revalidation of Master's Degree Credit

Over-age credits, not to exceed six credits, which are between six and ten years old and which were taken at Wayne State University, may be revalidated upon recommendation of the adviser and approval of the Engineering Graduate Officer. A special examination fee of \$5.00 per credit is charged for course revalidation by examination.

— Candidacy

Candidacy is an advanced rank which is recommended by the departmental adviser and authorized by the Engineering Graduate Officer upon evidence of the applicant's academic progress. The applicant must exercise primary responsibility for advancing his/her rank to 'candidate'. Eligibility for candidacy is contingent upon the student having completed all prerequisites specified at the time of admission, having earned twelve graduate credits with at least a 'B' average, and filing an adviser-approved *Plan of Work* with the Engineering Graduate Officer. In preparing a *Plan of Work*, the student should carefully evaluate personal and professional objectives, as well as all degree and departmental requirements. After the *Plan* has been filed, subsequent major changes must be approved by the adviser or the chairperson of the Departmental Graduate Committee. 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 may be denied. In most departments, candidacy should also be authorized at this time. Approval of candidacy is a necessary, but not sufficient, requirement for a graduate degree.

— 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 28. 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.

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, operations research, mechanical engineering and metallurgical engineering.

Admission to the doctoral programs of the College is contingent upon admission to the Graduate School; for requirements, see page 13. 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.

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.

College of Engineering Directory

<i>Dean</i>	Room 1100, Engineering Building; 577-3775
<i>Assistant Dean—Undergraduate Programs</i>	Room 1100, Engineering Building; 577-3780
<i>Associate Dean—Graduate Programs and Research</i>	Room 1100, Engineering Building; 577-3861
<i>Administrative Officer</i>	Room 1100, Engineering Building; 577-3817
<i>Director, Engineering Technology</i>	4855 Fourth Avenue; 577-0800
<i>Director, Special Programs</i>	Room 1100, Engineering Building; 577-3812
<i>Coordinator, Cooperative Education</i>	University Placement Office, Mackenzie Hall
<i>Manager, Off-Campus Programs</i>	Room 1100, Engineering Building; 577-4707
<i>Chemical Engineering</i>	Room 1100, Engineering Building; 577-3800
<i>Civil Engineering</i>	Room 2100, Engineering Building; 577-3789
<i>Electrical and Computer Engineering</i>	Room 3100, Engineering Building; 577-3920
<i>Industrial Engineering and Operations Research</i>	Room 3100, Engineering Building; 577-3821
<i>Mechanical Engineering</i>	Room 2100, Engineering Building; 577-3845
<i>Metallurgical Engineering</i>	Room 1100, Engineering Building; 577-3800
<i>Research Institute for Engineering Sciences</i>	Room 1200, Engineering Building; 577-3867
<i>Energy Center</i>	Room 1100, Engineering Building; 577-3811
<i>Bio-Engineering Center</i>	Room 418, Health Sciences Building; 577-1344
<i>Health Systems Productivity Center</i>	Room 3166, Engineering Building; 577-3821
<i>Center for Automotive Research</i>	Room 2121, Engineering Building; 577-3887

The Engineering Building is located at 5050 Anthony Wayne Drive.

Mailing address for all offices:

College of Engineering
Wayne State University
5050 Anthony Wayne Drive
Detroit, MI 48202

CHEMICAL ENGINEERING

Chairperson: Ralph H. Kummler

Associate Chairperson: James H. McMicking

Professors

H.G. Donnelly (Emeritus), R.H. Kummler, R. Marriott, E. W. Rothe, S.K. Stynes

Associate Professors

D.A. Crowl, E. Gulari, C.B. Leffert (Emeritus), J.H. McMicking, R.W. Mickelson

Assistant Professor

K.S. Ng, S.O. Salley

Adjunct Professors

R. Edwards, J. Jorne, J. Louvar, R. Powitz

Graduate Degrees

Certificate in Hazardous Waste Management

Master of Science in Chemical Engineering

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.

Certificate Program in Hazardous Waste Management

This program has been developed by the Department of Chemical and Metallurgical Engineering in consultation with the Reginal Examiner for the State of Michigan. The program will prepare technically trained Bachelor of Science-level graduates in engineering, biology, chemistry, or physics to pass the Hazard Control Manager Certification Examination.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13. Applicants must have a Bachelor of Science degree 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 554, 556, and 651; and four credits in electives. For recommendations about electives and additional information, interested students should contact Dr. Ralph Kummler; 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 13. 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: The Master of Science is offered by this department 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 697; and six credits of cognate study (see page 104). 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 20-28 and 103, respectively.

Doctor of Philosophy in Chemical Engineering

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13. 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. In the course of this program the following examinations are required: a preliminary examination (taken within one year after initial registration in the program), a qualifying examination (written and oral, taken after the equivalent of two years 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. Students should consult page 25 for Graduate School regulations governing doctoral study.

Assistantships and Fellowships

Fellowships and assistantships are available for qualified graduate students to provide financial aid as well as valuable learning experiences. Interested students should consult the Graduate School section of this bulletin, page 30. 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.

COURSES OF INSTRUCTION¹ (CHE)

504. (ECE 504) Numerical Methods for Engineers. Cr. 4

Prereq: MAT 204, 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. Chemical Engineering design elective. (F)

509. (MET 509) Physical Ceramics. Cr. 3

Prereq: MET 260 or equiv. 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. Classified as a Chemistry elective. (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. 3

Prereq: M E 420 or CHE 350. 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. Classified as a CHE Design elective. (B)

532. (OEH 732) 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. Classified as a Chemistry elective. (W)

535. Polymer Engineering. (MET 535). Cr. 2

Prereq. or coreq: MAT 204. Material fee as indicated in *Schedule of Classes*. An introductory study and application of fundamental relations between chemical structure and physical properties of high polymers. The preparative processes and manipulation of polymers in the related industrial fields of fibers, plastics, resins and rubbers.

Classified as a Chemistry elective.

(Y)

538. Polymer Solutions. (MET 538). Cr. 3

Prereq: CHE 330, CHM 544. 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)

551. Introduction to Industrial 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. Chemical Engineering design elective. (Y)

552. (OEH 720) 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. Classified as a Chemistry elective. (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. Classified as a CHE design elective. (Y)

554. Law and Administration in Industrial Waste Management. Cr. 2

Prereq: CHE 551. Offered for S and U grades only. No credit in engineering graduate degree programs. 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. Chemical Engineering chemistry elective. (Y)

555. (OEH 705) Environmental Science I: Introduction to Air Pollution. Cr. 3

Prereq: CHE 230 and MAT 204. 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. Classified as a Chemistry elective. (W)

556. Transportation and Emergency Spill Response. Cr. 3

Prereq: CHE 551. Overview of maritime, rail, and tank truck transportation methodology, planning, and regulations. An analysis of procedures for spill cleanup in watercourse, plants and laboratories. Classified as a CHE chemistry elective. (Y)

557. Safety in the Laboratory. 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. Classified as a Chemistry elective. (F)

558. Land and Ocean 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. Classified as a CHE design elective. (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. Classified as a CHE design elective. (I)

560. (MET 560) Composite Materials. Cr. 3

Principles and applications of high strength composite materials, with

¹ See page 461 for interpretation of numbering system, signs and abbreviations

particular emphasis on fiber-reinforced metals and plastics. Design of reinforced materials to replace conventional metals and alloys. Classified as a CHE Design elective. (B)

561. (MET 561) Science of Materials. Cr. 3

Prereq: PHY 218 or equiv. Mathematics of physical models representing solid state phenomena. Wave propagation in a lattice, including elastic, light and electron waves. Includes specific heats, optical phenomena, bond theory, dielectric properties, magnetism and ferro-electricity; classical and quantum statistics and reciprocal lattice concepts. Classified as a Chemistry elective. (I)

563. Tribology. (MET 555). Cr. 2

Prereq: CHM 544, CHE 340. The laws of friction, the nature of polymeric and solid surfaces and their frictional interaction and the process of lubrication. (B)

566. Equilibrium-Stage Separation Operations. Cr. 3

Prereq: CHE 304, 380. Design of units for the principles involved in separation of mixtures with equilibrium stage operations, including distillation and absorption operations. Classified as a CHE design elective. (B)

577. Computer-Aided Design and Graphics Techniques in Chemical Engineering. Cr. 4

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. Chemical Engineering design elective. (Y)

580. Computer-aided Design of Separation Processes. Cr. 2

Prereq: CHE 304 and 380. Application of computer programs to design chemical process operations. Problems include stagewise and continuous operations. Classified as a CHE Design elective. (B)

586. Elements of Nuclear Engineering. (MET 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. Chemical Engineering design elective. (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*. Classified as Design or Chemistry elective depending on selected topic. (F,W)

605. Design of Chemical Process Experiments II. Cr. 3

Prereq: CHE 505. Review of chemical process industry techniques in evolutionary operations, mixture design, regression analysis strategy, critical path methods and time series analysis. Chemical Engineering design elective. (W)

613. (NFS 413) Food Preservation. (NFS 713). Cr. 3 or 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. Classified as a Chemistry elective. (W)

625. Advanced Process Dynamics and Simulation. Cr. 2

Prereq: CHE 460. Adaptation of the principles of process analysis and simulation to complex chemical processing systems. Discussion of topics related to process computer control. Classified as a CHE Design elective. (B)

635. Polymer Processing. (MET 635). Cr. 2

Prereq: MAT 204. Material fee as indicated in *Schedule of Classes*.

A detailed analysis of polymer processing. Rheology of polymers, flow in tubes, calendaring, extrusion, injection molding, surface phenomena and polymer crystallization. Classified as a CHE Design elective. (Y)

640. Optical Spectroscopy in Chemical Engineering Research. Cr. 3

Prereq: CHM 544, CHE 340. Material fee as indicated in *Schedule of Classes*. Principles of operation for laser based techniques to measure physical and chemical properties, such as photon correlation spectroscopy, laser Doppler velocimetry, Fraunhofer diffraction analysis, Raman spectroscopy and Fourier transform infrared spectroscopy. Classified as a Chemistry elective. (I)

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. Classified as a Chemistry elective. (I)

647. Fermentation Technology. Cr. 2

Prereq: CHE 645. Design and operation of fermentors; extends subject matter introduced in CHE 645. Chemical Engineering design elective. (I)

650. Transport Phenomena in Living Systems. Cr. 3

Prereq: CHE 380, 340. Application of momentum and mass transfer to mammalian systems; techniques of modelling of living processes. (I)

651. Public Issues of Hazardous Waste. Cr. 2

Prereq: CHE 551. Offered for S and U grades only. No credit in engineering graduate degree programs. Discussion and analysis of current issues related to hazardous waste control. Topics to be announced in *Schedule of Classes*. (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. (B)

665. Electrochemical Engineering. (MET 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. Classified as a Chemistry elective. (B)

680. Chemical Process Analysis and Improvement. Cr. 3(Max. 6)

Prereq: CHE 420 or equiv. Course may be repeated for different content with consent of chairperson. Case studies of the analysis of existing chemical processes. Visiting industrial representatives will bring actual problems to the classroom and describe the industrial approach to their solution. Students will apply similar methods to real problems posed by their instructor. Chemical Engineering design elective. (I)

685. (MET 685) Corrosion. Cr. 3

Prereq: senior standing in engineering. Material fee as indicated in *Schedule of Classes*. 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. Classified as a 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)

710. Advanced Engineering Mathematics. (MET 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: 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)

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. Laboratory experiments in analysis and disposal techniques concerned with hazardous waste control. (Y)

730. Advanced Thermodynamics. Cr. 3
Prereq: CHE 330. Principles of thermodynamics with emphasis on application of the auxiliary functions to chemical equilibria of fluid states. (F)

740. Advanced Kinetics and Reactor Design. Cr. 4
Prereq: CHE 230, 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)

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)

585. Vacuum Technology. (MET 585). Cr. 2
Prereq: PHY 218. Vacuum techniques, flow of gases through tubes and orifices, operation of pumps and manometers, vacuum materials, vacuum systems. Classified as a CHE Design elective. (B)



CIVIL ENGINEERING

Chairperson: Snchamay Khasnabis

Professors

L.T. Cheney (Emeritus), T.K. Datta, S. Khasnabis, D.S. Ling (Emeritus), J. M. Paulson (Emeritus)

Associate Professors

H. M. Aktan, T. T. Arciszewski, T. M. Heidtke, T. Kagawa

Assistant Professor

R. A. Dusseau, 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 Engineering offers graduate degree programs in which students may specialize in the following areas: structures, geotechnical engineering, environmental engineering, transportation, and public works.

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 13. 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 3.0 for regular admission. Qualified or probationary admission may be granted to students with an h.p.a. marginally below 3.0; 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, 619, 710, 720, 722, and 726.

Geotechnical Engineering C E 551, 652, 751, 752, and 753.

Structures C E 535, 633, 637, 641, and 730.

Transportation..... C E 760, 762, 763, and 764.

Public Works..... C E 629, 689, and 729.

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 104. The credit distribution requirements do not include thesis credit for Plan A candidates.

During the first semester of 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 20-28 and 103, 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), except for public works.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13. 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.

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 25 for Graduate School regulations governing doctoral study.

Assistantships and Fellowships

Fellowship and assistantship support is available for qualified graduate students, see the Graduate School section, page 30. 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.

COURSES OF INSTRUCTION¹ (C E)

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. (I)

525. Sanitary Engineering Laboratory. (Lct: 2; Lab: 4). Cr. 3

Prereq: C E 421. Material fee as indicated in *Schedule of Classes*. Physical, chemical and biological analyses of water and waste water and discussion and interpretation of results as they pertain to treatment processes and stream pollution control. (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. (Y)

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. (W)

558. (CHE 558) Land and Ocean 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. Classified as a CHE design elective. (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. Classified as a CHE design elective. (I)

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. (B)

595. Special Topics in Civil Engineering I. Cr. 1-4(Max. 4)

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. (B)

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)

637. Reinforced Concrete II. Cr. 3

Prereq: C E 436. Student computer account required. Theory and design of two-way and flat slabs, yield line theory, footings and retaining walls, composite beams, box girders. (B)

638. Prestressed and Precast Concrete. Cr. 3

Prereq: C E 436. Material fee as indicated in *Schedule of Classes*. Principles of prestressing and precasting concrete. Design and analysis of statically determinate and indeterminate prestressed concrete members. (B)

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. (Y)

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. (B)

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. (B)

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. (I)

710. Water Resources Systems Analysis and Economics Cr. 4

Prereq: C E 422 or consent of instructor. Student computer account

¹ See page 461 for interpretation of numbering system, signs and abbreviations

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)

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)

729. Environmental Impact Assessment for Public Works. Cr. 3
Prereq: graduate standing. Material fee as indicated in *Schedule of Classes*. Designed for civil engineers specializing in public works management. Techniques, requirements, and constraints associated with the preparation of environmental impact programs as currently required for federally funded projects. (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. (W)

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. (B)

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. Analysis of effects of interaction between structural elements and surrounding soil. Beams on elastic foundation; lateral and pullout capacity of piles; pile group behavior; loads on flexible tunnel linings. (B)

752. Vibrations in Geotechnical Engineering. Cr. 3
Prereq: M E 340. Student computer account required. Pile driving by wave equation analysis; design of machine foundations; effects of pile driving, blasting and earthquakes. (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. Effects of physico-chemical properties. (I)

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. 2
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)

768. Transportation Planning Models. Cr. 3
Prereq: C E 763. Student computer account required. Computer application of various transportation planning models including trip generation and distribution, modal splits and traffic assignment techniques. (I)

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). (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

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

Acting Chairperson: Jerome Meisel

Associate Chairpersons: Robert D. Barnard and Harpreet Singh

Professors

R. D. Barnard, F. E. Brammer (Emeritus), J. Meisel, M. B. Scherba (Emeritus), M. P. Shaw, H. Singh, Y. Wallach, F. H. Westervelt

Associate Professors

R. Arrathoon, J. S. Bedi, R. F. Erlandson, P. Siy, J. R. Woodyard

Assistant Professor

M. Aslam

Adjunct Professors

M. A. Rahimi, C. C. Wang, M. D. Steele

Adjunct Associate Professor

D. R. Schneider

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, 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 systems; 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 growing 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 13. In addition to University and College requirements (see page 104) for regular admission, students must have an honor point average of 3.0 (C = 2.0) 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.)

Students from foreign 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 graduate applicants **MUST** (1) present an acceptable scholastic record (see above for definition), (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.

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. This plan is particularly suited for part-time students with concurrent full-time employment.

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, 577, 703, and 730 or 770

Systems and Control ECE 547, 644, 703, and 744 or 747

Electronics ECE 555, 655, 703, and 753

Power Systems ECE 541, 543, 547, 644, 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 required (see page 104) and a Plan of Work must be filed by the time twelve 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 20-28 and 103, respectively.

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 13. Applicants must have an overall honor point average of 3.5 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 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 25 for Graduate School regulations governing doctoral study.

Assistantships and Fellowships

A variety of financial resources are available to support full-time graduate study, including graduate research and teaching assistantships and various fellowships (see the Graduate School section, page 30). Requests for such support should be included with the Graduate School applications. 1

Electrical And Computer Engineering (ECE)

502. (CSC 662) Matrix Computation I. 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. (I)

510. (M E 510) Engineering Physiology. (Lct: 4). Cr. 4

Prereq: ECE 433 or M E 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. (Lct: 4). Cr. 4

Prereq: M E 340 or ECE 433. 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)

532. Network Synthesis. (Lct: 4). Cr. 4

Prereq: ECE 433. Student computer account required. Introduction to realizability theory. Review of positive real functions. Contemporary techniques for synthesis of prescribed transfer functions. Scattering matrices, reciprocal and nonreciprocal n-ports. (I)

- 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)
- 540. Electrical Machinery: Principles and Applications. (Lct: 4), Cr. 4**
Prereq: ECE 433, 480. Transformers and rotating electromagnetic machines. Steady-state and transient response of d.c. machines, steady-state operation of three-phase induction and synchronous machines, single-phase induction machines. (I)
- 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)
- 546. Electrical Energy by Direct Conversion. (Lct: 4), Cr. 4**
Prereq: ECE 355 and 480. Material fee as indicated in *Schedule of Classes*. Methods of converting thermal, nuclear, solar and chemical energy directly into electrical energy. Characteristics of thermoelectric devices and materials, converters, magnetohydrodynamic engines, photovoltaic devices and fuel cells. (I)
- 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)
- 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 351 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 microprocessor development system. (I)
- 564. (CSC 541) 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. (I)
- 565. (CSC 638) Microprogrammed Computer Design. (Lct: 4), Cr. 4**
Prereq: CSC 531 or ECE 460. Student computer account required. Introduction to microprogramming techniques and discussion of their implementation. Consideration of control word formats and microinstruction coding. Use of microprogrammable computers to emulate other computers. Implementation of microprogramming including control-store timing, capacity and cost. (I)
- 568. Switching Circuits. (Lct: 4), Cr. 4**
Prereq: ECE 468. Minimization of multiple-output switching functions, vector switching algebra, monotonic threshold and symmetric functions, multi-valued and fuzzy logic, complex sequential machine realization, laboratory experiments. (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. (I)
- 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, 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 of 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. Bioinstrumentation. (M E 618) (I E 618). (Lct: 4). Cr. 4
Prereq: ECE 330 and 510. Engineering principles of physiological measurements, signal conditioning equipment, amplifiers, recorders and transducers. Recent advances in instrumentation. (I)

644. Linear Dynamic Systems. (Lct: 4). Cr. 4
Prereq: ECE 448, 547. Student computer account required. General axiomatic formulation of dynamical systems, models using vector differential and difference equations, state variables, canonical forms, input-output descriptions. Linear system response. Controllability, observability. Introduction to stability theory and classical optimal control formulations. (I)

655. Solid State Electronics II. (Lct: 4). Cr. 4
Prereq: ECE 555. Advanced concepts of 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. 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. 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)

665. Fault-Tolerant Computer Architecture. (CSC 632). (Lct: 4). Cr. 4
Prereq: ECE 568 or CSC 531. Student computer account required. Survey of current literature in fault-tolerant design and fault diagnosis of combinational circuits. Use of redundancy in the form of majority logic or interwoven logic to prevent errors in spite of certain types of faults. Consideration of graphical and calculus methods for determining fault-finding experiments. Multi-valued and threshold logic. (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 504. 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. (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)

714. (I E 714) Human Engineering and Product Liability. (Lct: 4). Cr. 4
Prereq: graduate standing in engineering. Human factor considerations in product design. Minimization of health and injury hazards in product use and misuse. Legal considerations in product liability. Case studies. (I)

717. Electrophysiology. (I E 717) (M E 717). (Lct: 3). Cr. 3
Prereq: ECE 510 or M E 510. Mathematical techniques to describe the electrical behavior of nerve and muscle. Natural electrical sources in the physiological system; propagation of energy to various parts of the system. (I)

720. Digital Processing of Speech Signals. Cr. 4
Prereq: ECE 577. The representation and processing of speech signals using digital techniques. Consideration of different coding methods for efficient non-machine communications. (I)

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)

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 541 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)

763. Pipeline Architectures. Cr. 4
Prereq: ECE 666. Study of static and dynamic pipeline architectures suitable for hardware implementations. Comparisons of pipeline and parallel processing techniques. (I)

766. Advanced Design of Digital Computers. (Lct: 4). Cr. 4
Prereq: ECE 666. Student computer account required. SIMD and MIMD machines, array and vector processing, data flow computers, parallel memory organization, architectural considerations for dedicated applications, review and discussion of current research papers in the area of computer architecture. (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)

775. Information Theory and Applications. (Lct: 4). Cr. 4
Prereq: ECE 570. Statistical theory of communication. The entropy concept. Channel capacity theorems. Coding theory: block, sequential, and convolutional codes; encoders and decoders (sequential, threshold, and Viterbi). Speech and language encoding. (Y)

785. Integrated Optics. Cr. 4
Prereq: ECE 587. Student computer account required. Introduction to optical electronics, lasers, and optical signal processing systems leading to the development of integrated optical technology. Ray tracing, optical resonators, fiber optics, gas lasers, semiconductor lasers, distributed feedback, spectroscopy, and current research topics. (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)

804. Mathematical Methods in Engineering III. (Lct: 4). Cr. 4
Prereq: ECE 704. Topological spaces, generalized functions, positive and monotone operators and duality theorems. Engineering applications to nonlinear system, control, signal and field theory. (I)

844. Control of Large Scale Systems. (Lct: 4). Cr. 4
Prereq: ECE 744. Model simplification by aggregation-decomposition, weak coupling approximation, singular perturbations. Stability of interconnected systems. Decentralized stochastic feedback control. Decentralized pole-placement methods. Decentralized strategies for dynamic games. Theory of teams. (Y)

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)

862. Real-Time Processing. Cr. 4
Prereq: ECE 762. Characteristic problems of real-time engineering applications. Software engineering of systems designed for real-time applications. Case studies used to develop systems for real-time processing. (I)

863. Distributed Systems Engineering. Cr. 4
Prereq: ECE 761 or 762. Engineering design, analysis, and synthesis of distributed computer systems. Special considerations of functional partitioning, communications, fault-tolerance and new technologies related to loosely-coupled systems. Hardware and software considerations directed by case studies. (I)

885. Advanced Integrated Optics and Optical Computing. Cr. 4
Prereq: ECE 785. Student computer account required. Examination of integrated optical devices and techniques. Current research topics in optical computing. (I)

897. Seminar. (Smr: 3). Cr. 1
Prereq: consent of graduate adviser. Discussion of topics in electrical and computer engineering. (T)

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 ENGINEERING AND OPERATIONS RESEARCH

Chairperson: Leonard R. Lamberson

Professors

Kailash C. Kapur, H. Allan Knappenberger, Leonard R. Lamberson,
Vinod K. Sahney

Associate Professors

Kenneth R. Chelst, Herbert G. Ludwig (Emeritus)

Graduate Degrees

Master of Science in Industrial 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*

Industrial engineers are involved in the design of systems related to producing a product or providing a service. Industrial engineering is interpreted to include manufacturing, financial, retail, health, governmental and other service industries.

In manufacturing organizations, the industrial engineer is responsible for the design of a wide variety of systems. These systems may be as small as a work station consisting of one man and a machine, or they may involve an entire plant, including the systems to control the production, inventory and quality of complex products.

The skills of the industrial engineer are also useful in the design of better systems to care for hospital patients, provide faster and more accurate mail distribution, provide fast and accurate airline reservations, control large space projects, and reduce air and water pollution. Industrial engineers are being called upon in increasing numbers to design systems which provide services beneficial to a society at a reasonable cost.

The Department maintains laboratories in systems simulation, computer-aided manufacturing, and human factors/work design for research and modeling of physical systems.

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 in Industrial Engineering program offers specialization in engineering management, operations research, reliability and quality control, operations management, and manufacturing systems. Specific course requirements differ for each specialization.

Admission to this program is contingent upon admission to the Graduate School; for requirements see page 13. Applicants must have a baccalaureate degree in engineering from an institution accredited by the Accreditation Board for Engineering and Technology (ABET). Undergraduate honor point average requirements are 2.6 overall and 2.8 for all junior and senior year courses.

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.

Credit distribution for either plan must include the following core courses: I E 643, 752, and 771; as well as six credits in cognate study (see page 104). Students lacking a Bachelor of Science degree in industrial engineering (or comparable undergraduate preparation) may be required to take I E 621 and 631, and complete as many as forty credits beyond the bachelor's degree before receiving a master's degree. All course work must be completed in accordance with the regulations of the Graduate School and the College governing graduate scholarship and degrees; see pages 20-28 and 103, respectively.

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 13. Applicants must have an overall honor point average of 2.8 in an undergraduate program in engineering, mathematics, computer science, or the physical sciences from a regionally-accredited institution, and a 3.0 honor point average in the mathematics courses included in the program. Undergraduate preparation must include courses in (1) mathematics equivalent to an accredited engineering baccalaureate program; (2) computer programming in a higher-level language such as FORTRAN, PASCAL, 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.

Credit distribution for either plan includes a required set of methodology courses: I E 643, 752, and 771; an elective application area; and six credits of cognate study (see page 104). Students lacking sufficient undergraduate preparation may be required to take I E 621 and 631, as well as additional credits to satisfy prerequisites. 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 20-28 and 103, 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 13. 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 is required consisting of a written section given in five half-day sessions, each covering a broad area of study; and an oral section consisting of the student's presentation and defense of a solution to a problem which is assigned two weeks prior to the date of the examination. A written and oral qualifying examination and an oral dissertation defense are also required. Students should consult page 25 for Graduate School regulations governing doctoral study.

Assistantships and Fellowships

A variety of financial resources are available to support full-time study, including graduate research and teaching assistantships and various fellowships (see the General Information section, page 30). Requests for such support should be included with the Graduate School application.

COURSES OF INSTRUCTION¹ (I E)

- 510. (M E 510) Engineering Physiology. Cr. 4**
Prereq: ECE 430 or M E 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. Cr. 4**
Prereq: M E 340 or ECE 433. 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: I E 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)
- 556. Operations Research I. Cr. 4**
Prereq: I E 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)
- 577. Operations Research II. Cr. 4**
Prereq: I E 556. Student computer account required. Advanced concepts in deterministic modeling. Network models and algorithms and formulation of integer and nonlinear programming models. Advanced concepts in applied probability. Decision analysis, Markov chains, and decision processes. (I)
- 587. Engineering Economy. Cr. 4**
Prereq: I E 322. Economic analysis of engineering projects. Selection of appropriate interest rates and methods of analysis, depreciation and tax considerations and use of accounting data in the comparison of investment alternatives. (F)
- 618. (ECE 618) Bioinstrumentation. 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 I E 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: I E 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: I E 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: I E 621. No credit after I E 531 or I E 533. Fundamental theories and concepts in the design and operation of production systems for manufacturing and service organization. (W)
- 642. Computer Aided Manufacturing II. Cr. 4**
Prereq: I E 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: I E 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 required. (F)
- 644. (CSC 618) Simulation Languages and Methodology. Cr. 3**
Prereq: CSC 518 and MAT 221. Student computer account required. In-depth study of simulation languages and software for discrete event and combined models. Issues in simulation methodology including random variate generation, model calibration, model validation and data acquisition in sample systems. (I)
- 710. (M E 710) Mathematical Modeling in Bioengineering. 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)
- 714. Human Engineering and Product Liability. (M E 714) (ECE 714). Cr. 4**
Prereq: graduate standing in engineering. Human factors considerations in product design. Minimization of health and injury hazards in product use and misuse. Legal considerations in product liability. Theories of damage, defense and liability. (B:F)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

717. (ECE 717) Electrophysiology. Cr. 3

Prereq: ECE 510 or M E 510. Mathematical techniques to describe the electrical behavior of nerve and muscle. Natural electrical sources in the physiological system; propagation of energy to various parts of the system. (I)

724. Reliability and Quality Assurance Systems. Cr. 4

Prereq: I E 777. Material fee as indicated in *Schedule of Classes*. Product assurance activities in industry; organization structures, concepts of early design analysis, estimating product life, process capability analysis, process control. (W)

726. Advanced Quality Control. Cr. 4

Prereq: I E 626. Material fee as indicated in *Schedule of Classes*. The theory of variables and attribute sampling plans, analysis of switching procedures in sampling plans, advanced process control concepts, economic design of process monitoring systems. (B)

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)

736. Production Control Systems. Cr. 4

Prereq: I E 756 and 777. Fundamental concepts in the design and operation of manufacturing and service systems such as organization for production, facilities planning, forecasting, scheduling, inventory control, labor control, quality control, materials management, and design of manufacturing systems. (I)

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)

745. Management Information Systems Evaluation. Cr. 4

Prereq: I E 643 or 744 and 531 or 631 or 736. Student computer account required. Material fee as indicated in *Schedule of Classes*. Analysis and design of management information requirements. Analysis of information requirements, design approaches, processing methods, data management and control of operations. (B)

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. (Y)

753. Non-linear Optimization Methods. Cr. 4

Prereq: I E 752. Use of non-linear optimization methods to solve complex systems problems. Kuhn-Tucker necessary and sufficient conditions; non-linear programming algorithms; primal and dual methods; quadratic programming; penalty function methods. Algorithms to solve geometric programming problems. (B)

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)

777. Stochastic Management Systems Analysis. Cr. 4

Prereq: graduate standing in engineering. Analysis and application of probabilistic models including Bernoulli, Poisson, and renewal processes, queueing theory, and decision analysis to study management, production, and planning problems. (I)

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)

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)

819. (CSC 819) Seminar in Advanced Modelling Concepts. Cr. 3

Prereq: CSC 518 or CSC 618 or CSC 719. Seminar for students pursuing research in modelling and simulation. (I)

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)

899. 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)

MECHANICAL ENGINEERING

Acting Chairperson: Kenneth A. Kline

Associate Chairperson: Trilochan Singh

Professors

A. Akay, C. N. DeSilva, N. A. Henein, R. M. Jamison (Emeritus), A. I. King, K. A. Kline, D. P. Lallas, J. P. Lee (Emeritus), L. M. Patrick (Emeritus), D. L. Perkins (Emeritus), R. A. Piccirelli, G. E. Rivers (Emeritus), E. Rivin, T. Singh, A. B. Whitman

Associate Professors

D. Ardayfio, M. G. Koenig, G. P. Loweke (Emeritus), E. C. Zobel (Emeritus)

Assistant Professors

S. Lantz, A. Zeid

Adjunct Professors

R. S. Levine, E. M. Petrick, E. A. Saibel

Adjunct Associate Professors

D. Bowen, W. Bryzik, G. Casey, F. Einaudi, D. Hrovat, J. Melvin, D. Viano

Adjunct Assistant Professors

R. Haut, T. Khalil, J. Tustaniwskyj

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, solar energy, computer graphics, structural analysis, automatic controls, vehicle dynamics and design, continuum mechanics, fluid dynamics, environmental design, mechanisms, acoustics and noise control, and optimum mechanical design. Faculty members in the Department are currently engaged in state-of-the-art research in all of these areas.

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, biomechanics, energy conversion, combustion engines, automatic controls, computer-aided design, vehicle dynamics, fluids, and continuum 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 13.

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 2.8 or above for the upper division (approximately the last eighty semester credits) of undergraduate course work. 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.

Students from foreign countries desiring admission must have complete 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 graduate applicants must (1) present an acceptable scholastic record (see above for definition), (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.

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 credits thesis.

Plan C: a minimum of thirty-two credits in course work.

Credit distribution for either plan includes: at least twenty-four credits in mechanical engineering courses, including a minimum of two courses on the 700-level, and at least one course from: M E 720, 730, 740, 755, 761; and six credits in cognate study (see page 104). 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 790 and 796) can be applied towards the degree. A minimum of four credits in analysis is required, including at least one of the following: M E 500, 501, 504; MAT 507, 522, 523. 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 20-28 and 103, respectively.

Doctor of Philosophy with a Major in Mechanical Engineering

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13. 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 3.0 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. Credit distribution must include: a minimum of thirty credits, exclusive of dissertation credits, in mechanical engineering courses; a minimum of thirty credits in graduate courses numbered 700 and above; and a complete sequence of courses in any two of the following five mechanical engineering areas, totalling at least six credits: controls; dynamics and vibrations; fluid mechanics; solid mechanics; and thermosciences. Transfer credit from other institutions may apply toward the satisfaction of the latter requirement. A maximum of thirty credits in special topics courses are applicable to the Ph.D. program.

Mathematics Requirements: All Ph.D. students in mechanical engineering are required to complete at least sixteen credits in mathematics courses numbered 500 and above. In exceptional cases, a maximum of four credits in other cognate areas may be substituted for the required mathematics minor credits, but only upon recommendation of the adviser. Mathematics credit earned at other institutions may be applicable to the minor requirement.

Examinations: All Ph.D. students must pass the following qualifying examinations:

1. *Preliminary Qualifying Examination:* This is a written examination administered within three semesters after admission as a Ph.D. applicant. The examination is given annually in the Winter semester, and the student elects to be examined in any two of the following fields: (a) Controls, (b) Dynamics and Vibrations, (c) Fluid Mechanics, (d) Solid Mechanics, (e) Thermosciences. The student must register his/her choice of fields with the Chairperson of the Graduate Program Committee at least thirty days prior to the examination date. Students may repeat the examination once. See *Guidelines for Ph.D. Preliminary Qualifying Examination* for details.

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 within three years of graduate study as a doctoral applicant.

An approved *Plan of Work* should be filed with the Office for Graduate Studies before the student has earned approximately forty-five 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 ME 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 at or near the beginning of dissertation work. 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.

Assistantships and Fellowships

Fellowship and assistantship support is available for qualified graduate students, see the Graduate School section of this bulletin, page 30. Specialized areas of research support for graduate students include: manufacturing processes, robotics, computer-aided design, acoustics, vibrations, biomechanics, and automotive engine research.



COURSES OF INSTRUCTION¹ (M E)

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: MAT 204. 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)

505. Applied Finite Element Methods. Cr. 4

Prereq: M E 360 or equiv. Review of solid mechanics, stress-strain relations, Matrix stiffness methods, truss elements, assembly procedures, boundary conditions, stress computation. Energy formulations. Beam, plate and solid elements. (I)

510. Engineering Physiology. (ECE 510) (I E 510). Cr. 4

Prereq: ECE 433 or M E 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: ECE 433 or M E 340. 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)

524. Industrial Combustion Systems. (CHE 524). Cr. 3

Prereq: M E 420 or CHE 350. Introduction to operating principles and design features of modern boilers, furnaces, gas turbine combustors, and advanced continuous combustion systems. Application of basic thermodynamics and heat transfer calculations to testing and design. (B:F)

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. 3

Prereq: senior standing. Material fee as indicated in *Schedule of Classes*. Design, analysis and synthesis of passenger vehicles and their major subsystems. (B:F)

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. 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)

551. Optimum Design of Mechanical Systems I. Cr. 4

Prereq: M E 345 or equiv. Student computer account required. Analytical and numerical methods for the optimum design of mechanical systems. Linear programming, simplex, exhaustive search, method of steepest descent, Lagrange multipliers. Introduction to geometric programming. Practical examples in the design of machines and structures. (B:F)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

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. (B:F)

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)

564. Applied Plasticity. Cr. 4

Prereq: M E 360. Introduction to the theory of plasticity. General approach to stress analysis in plasticity. Empirical equation to stress-strain curves. Three-dimensional stress system. Mohr's circles for three-dimensional stress systems. Yield criteria of metals. Prandtl-Reuss equations. Levy-Mises equations. Methods of determining work-hardening characteristics. Elementary analyses of the elastic-plastic bending of beams, rings and plates. Elastic-plastic problems with spherical or cylindrical symmetry. Mechanics of metal forming. (I)

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)

571. Introduction to Continuum Mechanics II. Cr. 4

Prereq: M E 570. Material fee as indicated in *Schedule of Classes*. Constitutive equations for nonlinear elastic solids and Newtonian fluids: invariance requirements, objectively equivalent motions, polynomial approximations. Continuum thermodynamics: energy, entropy, heat flux. Clausius-Duhem inequality, equation of state, heat conduction equations. General theorems. (B:W)

580. Combustion Engines. Cr. 4

Prereq: M E 320 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: M E 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)

583. Solar Energy Utilization and Energy Conservation in Building. Cr. 4

Prereq: M E 582 or consent of instructor. Solar radiation characteristics of opaque materials and partially transparent material, flat plate solar collector analysis, energy storage, analysis and design of solar water heating, solar heating and cooling systems, solar assisted heat pump system, economics of solar system, energy analysis of building operations; energy conservation by design of building envelope, by design of air conditioning system, by operating practices. (B:W)

595. Special Topics in Mechanical Engineering I. Cr. 1-4

Prereq: consent of chairperson. Maximum of four credits in Special Topics may be elected in any one degree program. Topics to be announced in *Schedule of Classes*. (I)

618. (ECE 618) Bioinstrumentation. 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)

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 702 or equiv. Student computer account required. Study of advanced concepts and current technical literature dealing with finite element analysis in mechanics. Use of the MOVIE, BYU and PLOT 10 graphics packages, and the DEC PDP 11/34 minicomputer. (B:F)

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)

714. (I E 714) Human Engineering and Product Liability. Cr. 4

Prereq: senior standing. Human factors considerations in product design. Minimization of health and injury hazards in product use and misuse. Legal considerations in product liability. Case studies. (I)

717. (ECE 717) Electrophysiology. Cr. 3

Prereq: ECE 510 or M E 510. Mathematical techniques to describe the electrical behavior of nerve and muscle. Natural electrical sources in the physiological system; propagation of energy to various parts of the system. (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)

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. Radiative Heat Transfer. Cr. 4

Prereq: M E 420. The fundamental laws of energy transfer by radiation. Statistical mechanics. Derivation of the black-body function. Radiative transfer through transparent media. The equation of transfer for absorbing and emitting media. Isothermal, variable temperature and radiative equilibrium conditions. Coupling of radiation, conduction and convection. (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 730. 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)

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)

751. Optimum Design of Mechanical Systems II. Cr. 4

Prereq: M E 551 or equiv. or consent of instructor. Advanced methods for determination of globally optimal design of mechanical systems. Monotonicity analysis and partial optimization, logarithmic and semi-logarithmic derivatives and polynomials. Geometric programming, condensation, dual geometric programming. Conditional design and constraint activity, signomials. Conservation and global optimization. Transcendental systems. Problem of standard sizes, lexical arithmetic. (B:W)

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)

761. Theory of Elasticity I. Cr. 4

Prereq: M E 560. 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 360 and MAT 204. 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)

771. Nonlinear Theory of Beams. Cr. 4

Prereq: M E 571 and 770 or consent of instructor. Material fee as indicated in *Schedule of Classes*. Kinematics of a directed curve, strain measures and geometric interpretation, rate measures, anholonomic components. Energy balance and invariance under rigid body motions, balance of mass and momentum. Development of a complete dynamical theory of elastic directed curves. The special case

of Cosserat curves. Reduction to the theory of Green and Laws of Hay. (I:F)

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)

830. Incompressible Flow Theory. Cr. 4

Prereq: M E 730. Perfect flow theory. Conformal mapping, Helmholtz theorems. Linearized potential flow theory, airfoil theory. Introduction to viscous incompressible flow. Stokes and ocean flow. (B:F)

831. Topics in Computational Fluid Mechanics and Heat Transfer. Cr. 4

Prereq: M E 731. Topics of current interest in the numerical techniques for fluid mechanics and heat transfer applications. (B:W)

861. Theory of Elasticity II. Cr. 4

Prereq: M E 570 or consent of instructor. 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)

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)

METALLURGICAL ENGINEERING

Chairperson: R. H. Kummler

Professors

C. L. Corey, L. Himmel, P. K. Rol

Assistant Professor

S. Putatunda

Adjunct Professor

E. Kennedy

Graduate Degrees

Master of Science in Metallurgical Engineering

Doctor of Philosophy—with a Major in Metallurgical 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-resistant 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 metallurgy has been revolutionized in recent years. Metallurgical engineers must master the science that enables them to understand the behavior of metals and 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 extraction of metals from their ores, processing of materials into useful products or controlling and improving the properties themselves.

Master of Science in Metallurgical Engineering

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13. In addition, applicants must satisfy the following criteria.

The Master of Science in Metallurgical Engineering program is open to students with a bachelor's degree in engineering or other mathematics-based 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 mechanical 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 metallurgical 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 twenty-six credits in metallurgical engineering courses, including MET 710, 730, and 740 (and including the thesis credit for Plan A students); and six credits in cognate study (see page 104). 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 20-28 and 103, respectively.

Doctor of Philosophy With a Major in Metallurgical Engineering

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13. 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, and MET 820. Also required are a preliminary examination, taken one year after entering the program; a qualifying examination, taken after the equivalent of two academic years of course work; and a final oral examination, taken after the completion of the Ph.D. dissertation. Students should consult page 25 for Graduate School regulations governing doctoral study.

Assistantships and Fellowships

Fellowships and assistantships are available to financially aid students as well as provide valuable learning experiences; see the Graduate School section of this bulletin, page 30. Assistantships and fellowships are available to do research in the areas of creep and fatigue, corrosion, ion implantation, fracture analysis, fracture growth, phase transformation, thermodynamics, ceramics and diffusion in solids. 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.

COURSES OF INSTRUCTION¹ (MET)

509. Physical Ceramics. (CHE 509). Cr. 3

Prereq: MET 260 or equiv. 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)

535. (CHE 535) Polymer Engineering. Cr. 2

Prereq. or coreq: MAT 204. An introductory study and application of fundamental relations between chemical structure and physical properties of high polymers in the related industrial fields of fibers, plastics, resins and rubbers. (W)

538. (CHE 538) Polymer Solutions. Cr. 3

Prereq: CHE 330, CHM 544. 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)

550. Diffusion in Solids. Cr. 3

Prereq: MET 360, MAT 204. 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: MET 340, 370. Behavior of metals at elevated temperatures from the microstructural point of view; concepts of creep and failure mechanism at elevated temperatures. (Y)

555. (CHE 563) Tribology. Cr. 2

Prereq: CHM 544, CHE 340. The laws of friction, the nature of polymeric and solid surfaces and their frictional interaction and the process of lubrication. (B)

560. Composite Materials. (CHE 560). Cr. 3

Prereq: MET 370. Principles and applications of high-strength composite materials, with particular emphasis on fiber-reinforced metals and plastics. Design of reinforced materials to replace conventional metals and alloys. (B)

561. Science of Materials. (CHE 561). Cr. 3

Prereq: PHY 218 or equiv. Introduction to physical models representing solid state phenomena. Wave propagation in a lattice, including elastic, light and electron waves. Includes specific heats, optical phenomena, band theory, dielectric properties, magnetism and ferro-electricity; classical and quantum statistics and reciprocal lattice concepts. (I)

562. Electron Microscopy. Cr. 4

Prereq: MET 360 or consent of instructor. Theory and practice of electron image formation, sample preparation, diffraction principles and interpretation of effects. (B)

563. Cast Ferrous Alloys. Cr. 3

Prereq: MET 360. Advanced study of the properties of ferrous castings and solidification mechanisms. (B)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

565. Metal Surfaces. Cr. 3

Prereq: MET 260, 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)

580. Powder Metallurgy. Cr. 3

Prereq: MET 360. 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 Metallurgical Engineering I. Cr. 1-4

Prereq: MET 360, 370. Maximum of twelve credits in Special Topics may be elected in any one degree program. Consideration of special subject matter in metallurgical engineering. Topics to be announced in *Schedule of Classes*. (Y)

635. (CHE 635) Polymer Processing. Cr. 2

Prereq: MAT 204. A detailed analysis of polymer processing. Rheology of polymers, flow in tubes, calendaring, extrusion, injection molding, surface phenomena and polymer crystallization. (F)

650. Fatigue and Fracture of Metals. Cr. 3

Prereq: MET 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)

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 I. Cr. 3

Prereq: MET 360. An advanced treatment of phase transformations, based on thermodynamics, kinetics and crystallography. Nucleation, basic mechanisms of transformations, and applications of statistical mechanics. (W)

730. Thermodynamics of Alloys. Cr. 3

Prereq: MET 330. An advanced study of the principles of thermodynamics with emphasis on those having ultimate application to reactions in metal producing processes and to the physical equilibria of alloys. (I)

740. Mechanical Metallurgy. Cr. 3

Prereq: MET 370. Analysis of elastic and plastic deformation of single crystals and polycrystalline materials, emphasizing the relations between metallurgical microstructure and material properties. (I)

750. Advanced Metallurgical Thermodynamics. Cr. 3

Prereq: MET 730. An advanced study of the applications of thermodynamic principles to metallurgical processes and products. (I)

790. Directed Study. Cr. 1-6

Prereq: written consent of adviser. Library investigation of an approved project in metallurgical engineering. Independent study, conferences with supervisor and preparation of a comprehensive report. (T)

795. Special Topics in Metallurgical Engineering II. Cr. 1-4

Prereq: CHE 380, CHE 340. Maximum of twelve credits in Special Topics may be elected in any one degree program. A consideration of special subject matter in metallurgical engineering. 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(Min. 32)

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)

School of Fine and Performing Arts

DEAN: KATHRYN A. MARTIN

Foreword

The School of Fine and Performing Arts conducts instruction, creative activity, and research in the various creative arts disciplines and serves the academic interests of a diverse student population. Degree programs and courses are offered in studio arts and art history; in music performance, theory, composition, conducting, and music education; in theatre performance and technical theatre; and in dance performance and dance education.

An integral part of study in the arts is the opportunity to perform, and the School of Fine and Performing Arts includes various performance ensembles: the Hilberry Repertory Theatre Company, the Jazz Lab Band Group, Men's Glee Club, Symphonic Band, and the WSU Dance Company. The University's Community Arts Gallery is regularly used to exhibit the work of students, faculty and touring exhibits, and serves as an important resource in the areas of curriculum and instruction. Additionally, the School offers students opportunity to work not only with artist/faculty, but also with visiting artists. Contributing to this is the School's unique proximity to major cultural institutions; adjunct faculty from both the Detroit Institute of Arts and the Detroit Symphony Orchestra provide a strong nucleus of visiting artists in the Departments of Music and Art. The Theatre and Dance Departments of the School also work closely with artists resident in the Detroit area.

Students in the School of Fine and Performing Arts are continuously involved in both theoretical and practical training. For example, theatre students perform in student- and faculty-directed works, design and work on sets and perform in music ensembles. They have their work critiqued as well as participate in the critiques of other work; a process of analysis and criticism which is fundamental to the study of the arts. Advanced upper level and graduate performance ensembles are an important aspect of practical application available not only to the School of Fine and Performing Arts students, but to the students of the entire University.

The goals of the School of Fine and Performing Arts are to provide its students with the skills, knowledge, and understanding necessary for personal and professional artistic success, as well as the willingness to experiment, and the flexibility to change as these students personally and professionally contribute to the quality of life in this society.

Graduate Degrees

Master of Arts—with majors in

art	music
art history	theatre
design and merchandising	

Master of Music—with majors in

composition	performance
choral conducting	music education
theory	

Master of Science—with a major in dance

Master of Fine Arts—with majors in

art	theatre
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Doctor of Philosophy—with a major in Theatre

ACADEMIC PROCEDURES

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 13. The following additions and amendments pertain to the School of Fine and Performing Arts.

Regular Admission

— See page 13.

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 20-28) and this school governing graduate scholarship and degrees.

GRADUATE DEGREE REQUIREMENTS

General requirements for graduate degrees may be found beginning on page 25. 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 School of Fine and Performing Arts upon evidence of the applicant's superior scholarship, appropriate personal qualities and promise of professional competence. 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. Ph.D. applicants should file this *Plan of Work* with the Graduate School; all master's applicants should file with the graduate officer of the School of Fine and Performing Arts. In preparing a Plan, students should evaluate with care their personal and professional objectives as well as all degree and departmental requirements.

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

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. The applicant should petition his/her adviser to advance his/her rank to 'Candidate.'

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 School's graduate officer.

It is recommended that an approved Plan be filed by the applicant for the Ph.D. degree 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, Master of Music, and Master of Science degree 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 and Performing 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 and Performing Arts Graduate Officer. Doctoral candidates must prepare four copies which, after receiving departmental approval, will be forwarded to the Graduate School.

Directory

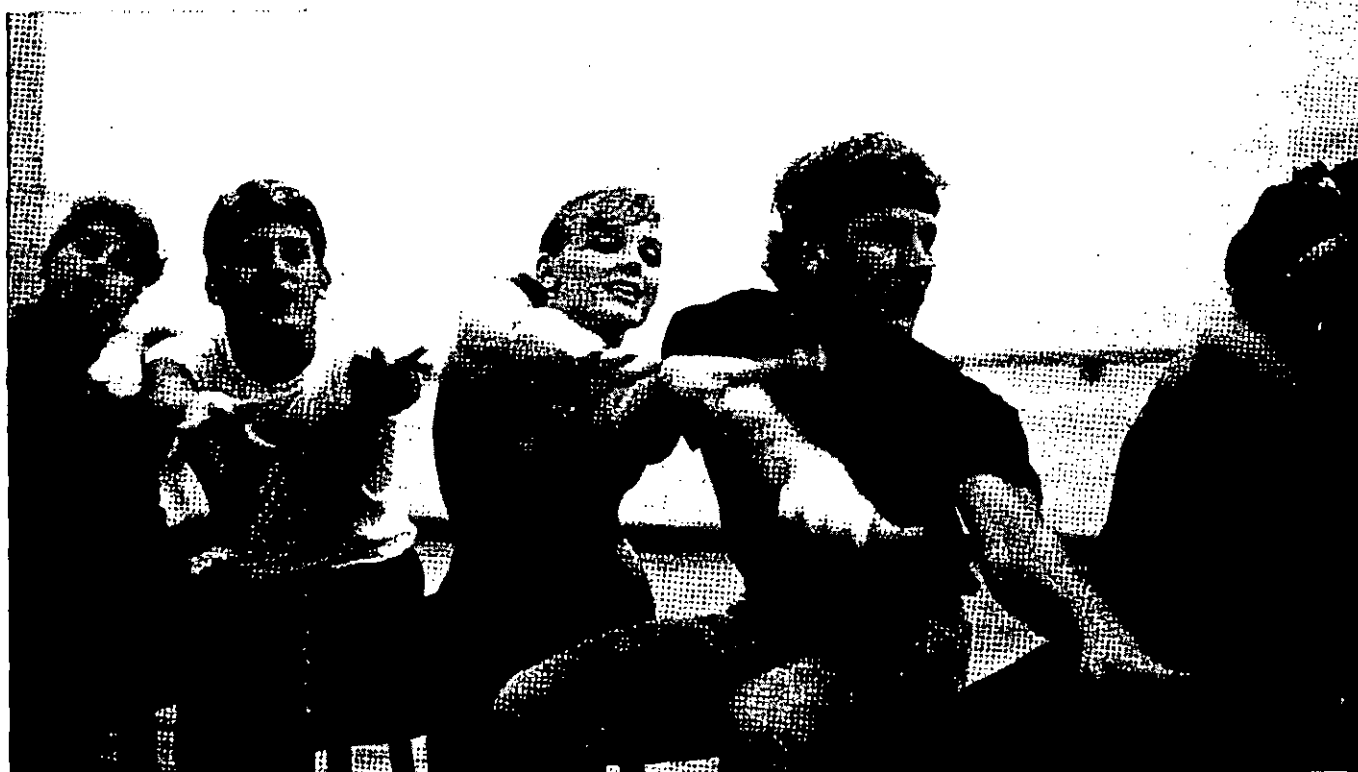
<i>Dean</i>	Kathryn A. Martin	5104 Gullen Mall; 577-5342
<i>Associate Dean</i>		5104 Gullen Mall; 577-5342
<i>Administrative Officer</i>	Joan M. Ferguson	5104 Gullen Mall; 577-5363
<i>Development Officer</i>		5104 Gullen Mall; 577-5362
<i>Degree Certification</i>		5104 Gullen Mall; 577-5364
<i>Personnel Records</i>		5104 Gullen Mall; 577-5365

Departmental Offices

<i>Art and Art History</i>	Richard J. Bilaitis	150 Community Arts; 577-2980
<i>Dance</i>	Georgia Reid	125 Matthaehi Building; 577-4273
<i>Music</i>	Peter J. Schoenbach	105 Schaver Music Building; 577-1795
<i>Theatre</i>	Howard Burman	95 W. Hancock; 577-3508

Mailing address for all offices:

(Department Name)
 School of Fine and Performing Arts
 Wayne State University
 5980 Cass Avenue
 Detroit, MI 48202



ART AND ART HISTORY

Office: 150 Community Arts Center, 450 Reuther Mall; 577-2980

Chairperson: Richard J. Bilaitis

Academic Services Officers: Agnes Aoki, John Slick

Professors

William A. Allen (Emeritus), Wayne Andrews (Emeritus), Mary Jane Bigler (Emerita), Richard J. Bilaitis, Robert Broner (Emeritus), Olga Constantine, John D. Egner, Phillip G. Fike, Peter J. Gilleran, Bernard M. Goldman, Joseph Gutmann, John G. Hegarty, David A. Mitchell (Emeritus), James Nawara, Louise J. Nobili (Emerita), Thomas Parish, William E. Pitney (Emeritus), Patricia A. Quinlan, G. Alden Smith (Emeritus), Robert J. Wilbert, William T. Woodward (Emeritus)

Associate Professors

Thomas P. Fitzgerald, Urban Jupena, John C. Mills, James M. Raymo, Melvin Rosas, Stanley L. Rosenthal, Jeanne A. Stiller, Horst Uhr, Joseph B. Zajac

Assistant Professors

Phyllis A. Ashinger, Robert J. Martin, Mary Jo McNamara, Marilyn Zimmerman

Instructor

Carolyn J. Hooper

Adjunct Professor

Samuel Sachs II

Adjunct Associate Professors

William Peck, Ellen Sharp

Adjunct Assistant Professors

Alan Darr, Linda Downs, Suzanne Mitchell, Nancy Rivard Shaw, Davira Taragin

Graduate Degrees and Certificates

Master of Arts — with a major in art and a specialization in one of the following: advertising design, ceramics, design, drawing, fibers, industrial design, interior architecture, 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

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 13. 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 should include 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 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 School 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 School of Fine and Performing 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 13. 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 and French are preferred).

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 with a broad undergraduate art history background are expected to concentrate in one of the major areas: ancient, medieval, Renaissance-Baroque, or nineteenth and twentieth centuries. The students must pass a comprehensive slide examination before the essay or thesis topic can be approved by the adviser.

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 13. 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.

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 13. 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 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.

Assistantships and Scholarships

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 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: At various times, private donors make scholarship funds available to the Department. Detailed information on scholarships is available in the Art and Art History Office.

Certificate Program 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 13) 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.

COURSES OF INSTRUCTION¹

Only courses passed with a minimum grade of 'C' will satisfy prerequisite requirements for subsequent courses in the Department of Art and Art History.

Advertising Design (AGD)

525. (AGD 325) Advanced Advertising Design. Cr. 3-9(Max. 18)
Prereq: AGD 325. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Advanced projects, layout practice, introduction to view camera used in layout, commercial graphic films. Term project development. Commercial illustration. (F,W)

589. Directed Projects: Advertising Design. Cr. 3-9(Undergrad. max. 15; grad. max. 30)
Prereq: written consent of instructor. Individual problems. (F,W)

725. (AGD 325) Graduate Problems in Advertising Design. (AGD 525). 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). 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. 3-9(Undergrad. max. 15; grad. max. 30)
Prereq: written consent of instructor. 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. Extended problems in ceramics; individual research with eighteen to twenty-seven hours of laboratory per week. (F,W)

Design (ADE)

520. Advanced Design. Cr. 3-6(Max. 6)
Prereq: ADR 106 and ADE 121. Election of more than three credits per semester requires written consent of instructor. Material fee as

indicated in *Schedule of Classes*. Advanced problems in chromatic media to broaden and deepen the understanding of color as a structural component in the visual arts. (I)

521. Experimental Art Processes. Cr. 3-6(Max. 6)
Prereq: ADE 320. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Advanced study in two- and three-dimensional structure with emphasis on multi-media. Development of individual projects which extends the student's conceptual vocabulary. (I)

522. Art Processes. Cr. 3-6(Max. 6)
Prereq: ADE 121 and 220. Election of more than three credits per semester requires written consent of instructor. Studio course techniques not otherwise available in regular course offerings. Process to be announced in *Schedule of Classes*. (I)

583. Directed Projects: Design. Cr. 3-9(Undergrad. max. 15; grad. max. 30)
Prereq: written consent of instructor. Individual problems. (F,W)

720. Graduate Problems in Design. Cr. 3-6(Max. 12)
Prereq: ADE 520. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. (I)

721. Graduate Problems in Experimental Art Processes. Cr. 3-6(Max. 12)
Prereq: ADE 521. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. (I)

722. Graduate Problems in Art Processes. Cr. 3-6(Max. 12)
Prereq: ADE 522. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. (I)

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. (ADR 207) Advanced Life Drawing. (ADR 307). Cr. 3-9(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. Studio work and field trips. (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;

¹ See page 461 for interpretation of numbering system, signs, and abbreviations.

the skeletal and muscular systems and superficial characteristics. (Y)

580. Directed Projects: Drawing.

Cr. 3-9(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 207) Graduate Life Drawing. (ADR 307) (ADR 507). 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. Material fee as indicated in *Schedule of Classes*. Survey of historic costumes, prehistoric to present. (F)

544. Fashion Design: Flat Pattern. Cr. 3

Prereq: AFA 242. Material fee as indicated in *Schedule of Classes*. Original designs from a basic sloper. (Y)

545. Fashion Design: Draping. Cr. 3

Prereq: AFA 242. 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: eight credits in marketing. Application of business theory to merchandising; design and implementation of the merchandise plan. (W)

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)

642. Advanced Problems in Apparel Design and Construction. Cr. 3

Prereq: AFA 542, 544 and 545. Individual problems in advanced design and construction. (I)

643. History of Textiles. Cr. 3

Prereq: AFA 241. Material fee as indicated in *Schedule of Classes*. Study of major historical, decorative textiles and their construction techniques. (I)

685. Seminar. Cr. 2

Prereq: consent of instructor. Topics to be announced in *Schedule of Classes*. (F,W)

693. Study Tour. Cr. 2 (Max. 4)

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)

555. Trends in Consumer Affairs. Cr. 3

Prereq: ECO 101. No graduate credit after former FAC 355 or AFA 355. Research project required for graduate students. Consumer economic problems regarding regulation, responsibility, advocacy and protective legislation, consumer behavior, advertising and marketplace decisions. (F,W)

Fibers (AFI)

565. (AFI 265) Weaving: Senior Project. (AFI 266) (AFI 365) (AFI 366). 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 265) Fibers: Senior Project. (AFI 266) (AFI 365) (AFI 366) (AFI 565). 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 work determined by student; research and written statement. (T)

587. Directed Projects: Fibers. Cr. 3-9(Undergrad. max. 15; grad. max. 30)

Prereq: written consent of instructor. Individual problems. (F,W)

765. Graduate Problems in Weaving. (AFI 766). 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 765) Graduate Problems in Fibers. 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)

887. M.F.A. Studio: Fibers. Cr. 6-9(Max. 36)

Open only to M.F.A. students. Extended problems in fibers; individual research with eighteen to twenty-seven hours of laboratory per week. (F,W)

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. 3-9(Max. 18)
Prereq: AID 331. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. 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. 3-9(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. (I)

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, and 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 Architecture (AIA)

535. Interior Architecture: Adaptive Use. Cr. 3-6(Max. 6)
Prereq: AIA 235, 435. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Imaginative re-design of existing buildings for new uses: drawings, plans, building sections. (Y)

536. Survey of Construction Technology. Cr. 3
Prereq: AIA 235. Introduction to modern structural, air conditioning, plumbing, electrical and acoustical engineering principles as applied to architectural interiors. Designer-engineer relationships. (Y)

537. Environment as an Art Form. Cr. 3-6(Max. 6)
Prereq: AIA 235, 435. Election of more than three credits per semester requires written consent of instructor. Design of interior spaces as sculpture and painting. Emphasis on form, color, light, proportion and emotional impact. Sketches, models, model photography. (I)

538. Interior Architecture: Construction Drawings. Cr. 3-6(Max. 6)
Prereq: AID 435, AID 436, AID 437. Election of more than three

credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Preparation of detailed architectural working drawings for interior spaces. (W)

539. Interior Lighting Design. Cr. 3
Prereq: AIA 235. Light sources, fixtures, selection and application in interiors; energy efficiency, comfort, basic calculations. (F)

591. Directed Projects: Interior Architecture. Cr. 3-6(Max. 9)
Prereq: written consent of instructor. Individual problems. (F,W)

635. (AIA 435) Interior Architecture: Senior Projects. Cr. 3-6(Max. 12)
Election of more than three credits per semester requires written consent of instructor. Complete interior architectural solution to problem chosen by student. (F,W)

735. Graduate Interior Architecture. Cr. 3-9(Max. 24)
Prereq: AIA 635. Election of more than three credits per semester requires written consent of instructor. Individual problems in interior architecture. (I)

Interior Design And Housing (AIH)

560. History of Furniture and Interiors. Cr. 4
Prereq: junior standing or successful completion of two courses in art history or consent of instructor. Material fee as indicated in *Schedule of Classes*. History of furniture and interiors from ancient periods to the present. (F)

565. Interior Design Studio IV. Cr. 3
Prereq: completion of first two years of interior design curriculum, AIH 460 or consent of instructor. Material fee as indicated in *Schedule of Classes*. Materials and systems. Understanding interior design systems and materials, and practical applications to the interior design process. (F)

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)

661. Interior Design Studio V. Cr. 4
Prereq: AIH 460, 461, 565. For interior design majors. Material fee as indicated in *Schedule of Classes*. Advanced problems in residential and contract design. (W)

665. Interior Design: 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. Seminar. 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. Interior Design Studio VI. Cr. 4(Max. 8)
Prereq: successful completion of undergraduate program in interior design or AIH 661. Material fee as indicated in *Schedule of Classes*. Graduate level design experiences allowing typical design specialization. (W)

785. Seminar. Cr. 2

Prereq: consent of instructor. Topics to be announced in *Schedule of Classes*. (F,W)

Metals (AME)

560. (AME 360) Advanced Metal Arts and Jewelry Design. Cr. 3-9(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. 3-9(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)

886. M.F.A. Studio: Metal Arts. Cr. 6-9(Max. 36)

Open only to M.F.A. students. Extended problems in metalsmithing; individual research with eighteen to twenty-seven hours of laboratory per week. (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. 3-9(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. 3-9(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. (Y)

513. (APA 313) Figure Painting Advanced: Water Media. 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. 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. 3-9(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 Medium. 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 Medium. (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 Medium. (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. (L)

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*. (L)

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. 3-9(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)

549. (APR 349) Advanced Lithography. 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 problems in lithography. Black and white, multicolor, transfer methods. (F,W)

550. (APR 350) Advanced Serigraphy. 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. Experimental Printmaking. Cr. 3-9(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)

552. Cliche Verre Printmaking. Cr. 3-6(Max. 15)

Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Image making with light. Traditional and experimental use of light-sensitive materials to produce black and white and color hand-made images. (B)

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)

554. Seminar in Printmaking. Cr. 3-6(Max. 9)

Prereq: any 500-level course in printmaking. Election of more than three credits per semester requires written consent of instructor. Introduction to the professional printmaking activities. Lectures and field trips to publishing workshops, museums and galleries. (I)

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. 3-9(Undergrad. max. 15; grad. max. 30)

Prereq: written consent of instructor. Individual problems. (F,W)

654. The Print Process: History and Technology. Cr. 3

Prereq: any 500-level art course. History and development of the various print media. Lecture and demonstration. (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)

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 215) Advanced Sculpture: Non-Figurative. (ASL 316). Cr. 3-9(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. Cr. 3-9(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. 3-9(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 liasons, equipment. (I)

582. Directed Projects: Sculpture.

Cr. 3-9(Undergrad. max. 15; grad. max. 30)

Prereq: written consent of instructor. Individual problems. (F,W)

616. (ASL 215) Non-Figurative Sculpture. (ASL 316) (ASL 516). Cr. 3-9(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 photofolio of work and professional plans. (T)

**617. (ASL 317) Figurative Sculpture. (ASL 517).
Cr. 3-9(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)

619. Selected Problems in Sculptural Concepts. Cr. 3-9(Max. 18)
Prereq. or coreq: ASL 616 or 617. Open only to seniors and graduate students. Election of more than 3 credits per semester requires written consent of instructor. Material fee as indicated in *Schedule of Classes*. Content varies each term, focusing on one aspect of spatial concepts and forms. Primarily for sculpture majors; open to any senior or graduate art student with consent of adviser. (I)

**716. (ASL 215) Graduate Problems in Non-Figurative Sculpture.
(ASL 316) (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, Special Classes (ACS)

500. Foreign Study in Studio Art. Cr. 6-9
Number of credits to be taken depends on study tour. Studio art offered in a specific geographic area. New perceptive experiences within the cultural environment of a foreign country combined with studio disciplines. (I)

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)

509. Introduction to Art Historical Research. Cr. 3
Introduction to art historical sources and resources, research methods and problems in a variety of fields, including methods of paper writing, publication and presentation. (I)

510. Biblical Archaeology. Cr. 3
The Bible and archaeology in the light of recent research. (B)

514. Art of the Ancient Near East. Cr. 3
Neolithic through Achaemenian art. (B)

520. Classical World: Minos to Alexander. Cr. 3
Art and architecture from the Minoan to the classical period. (B)

521. Hellenistic and Roman Art. Cr. 3
Discussion of the art and architecture of the Hellenistic and the Roman Empires. (I)

530. Early Christian and Byzantine Art. Cr. 3
The evolution of Christian imagery. (B)

540. Art and Architecture of the Early Middle Ages. Cr. 3
Art and architecture in Western Europe from the Dark Ages through the twelfth century. (I)

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)

545. Romanesque Art and Architecture. Cr. 3
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
The pivotal role of the illustrated Christian manuscript from antiquity to the printed book. (B)

550. Early Renaissance in Italy. Cr. 3
Art and architecture from Giotto to Botticelli; transformation of late medieval art prior to Black Death, classical revival in Florence; North Italian artists such as the Bellinis and Mantegna. (B)

551. High Renaissance and Mannerism in Italy. Cr. 3
The art of Leonardo, Raphael, Michelangelo, Titian, and their contemporaries. (I)

**553. Northern European Painting in the Fourteenth and Fifteenth
Centuries. Cr. 3**
Northern painting from its sources in the Franco-Flemish manuscript tradition and Bohemian schools to the great masters of the fifteenth century. (B)

**555. Flemish and German Painting in the Sixteenth Century.
Cr. 3**
Development of Flemish and German painting from c. 1745 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

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

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
Major styles, developments and masters. (B)

571. Trends in Nineteenth Century Art. Cr. 3
Topics to be announced in *Schedule of Classes*. (B)

572. Twentieth Century Art. Cr. 3
Specific topics to be announced in the *Schedule of Classes*. (B)

574. Surrealism. Cr. 3
Literary and artistic history of these movements; their development in Germany, France and America. (B)

576. German Expressionism. Cr. 3
German Expressionist painting and sculpture in Imperial Germany, the Weimar Republic, and the Nazi regime; members of *Die Brucke*, and *Der Blaue Reiter* and the independents such as Beckmann, Kokoshka, and Barlach. (B)

590. Directed Study. Cr. 3
Open only to art history majors. Supervised advanced reading and research in the history of art. (F, W)

670. Nineteenth Century German Painting. Cr. 3
Winkelmann, Goethe, Mengs; Novalis and Schelling; Friedrich and Rubge; the Nazarenes and the revival of panel and fresco painting; the "German Romans", Feuerbach, Bibklin, von Marees; Liebermann and Klimt. (B)

692. Art Archives Practices. Cr. 3-6(Max. 9)
Prereq: consent of adviser and director of Archives of American Art. Open only to majors. Election of more than three credits per semester requires written consent of instructor. On-the-job training in the Archives of American Art, Detroit Institute of Arts. (I)

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)

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)

760. Seminar in Baroque and Rococo 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)

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)

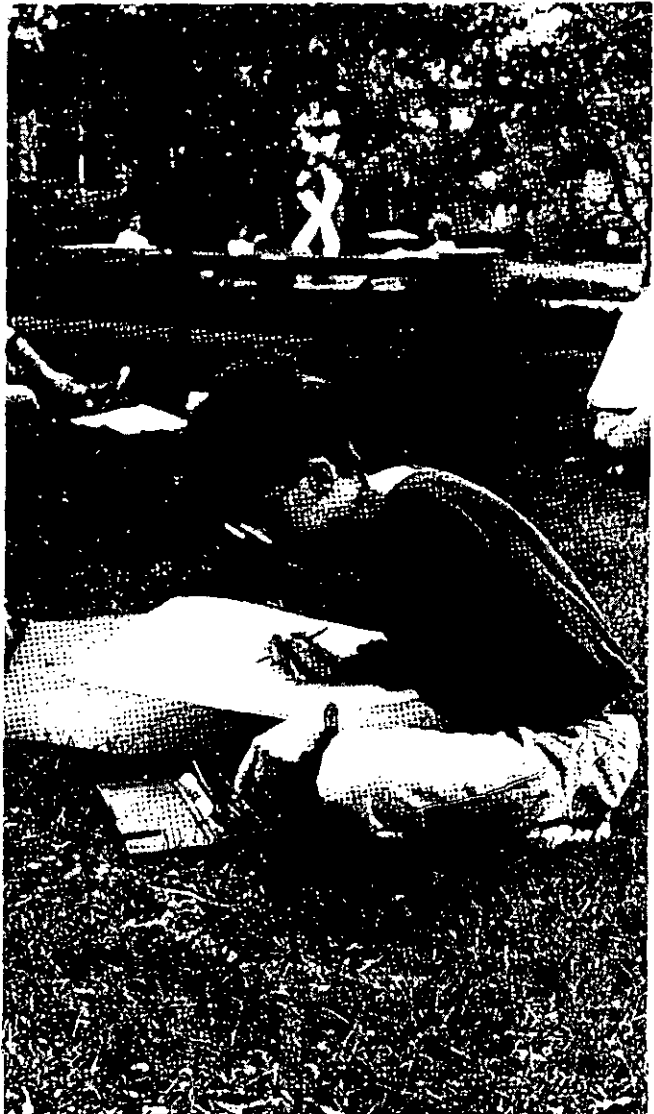
779. Studies in Art History. Cr. 3(Max. 9)
Open only to graduate students in art history. Graduate students attending a scheduled 500-level course pursue advanced research on topics related to the course. (F, W)

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)



DANCE

Office: 125 Matthaei Building; 577-4273
 Chairperson: Georgia Reid

Assistant Professors

Eva Jablonowski-Powers, Georgia Reid, Ann Zirulnik (Emerita)

Lecturer

Anita Surma

Master of Science with a Major in Dance

This program is open to students who have an undergraduate major or minor in dance or the equivalent in dance study. Applicants who wish to earn a teaching certificate must meet state certification requirements in addition to completing the course work required for the master's degree.

Admission Requirements: Admission to any graduate program is contingent upon admission to the Graduate School; for requirements, see page 13. In addition, applicants to the master's degree program in dance must satisfy the following criteria. Minimum requirements for regular admission to the Master of Science degree program include an undergraduate major or minor in dance or equivalent experience in dance and an overall honor point average (h.p.a.) of 2.6. An overall h.p.a. of 2.25 to 2.59 with fulfillment of other requirements allows admission on probationary status.

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 School graduate office. 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.

DEGREE REQUIREMENTS: The degree Master of Science with a major in Dance is offered under Plan B. The degree requires thirty-two credits distributed as follows: twenty credits in dance (including three credits for the essay) and twelve credits in a cognate area that has been approved by the major adviser. All course work must be completed in accordance with the academic procedures of the School and the Graduate School governing graduate scholarships and degrees; see pages 130 and 20-28, respectively.

Major Requirements: Students must take designated courses in an area of emphasis within the department. An audition is required for the performance emphasis.

Required core courses:

	credits
DNC 781 — Teaching Creative Dance.....	2
DNC 783 — Historical Foundations of Dance.....	2
DNC 750 — Research Methods.....	3
DNC 799 — Master's Essay or Project.....	3
DNC 885 — Seminar in Dance Techniques.....	2

Concentrations

Performance

DNC 601 — Technique Laboratory III.....	1-4
DNC 661 — Dance Company II.....	1-10

Choreography and Production

DNC 785 — Laboratory in Choreography.....	2
DNC 887 — Problems in Concert Production.....	2-4

Dance Education

DNC 783 — Historical Foundations of Dance.....	2
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Performance Opportunities: The Dance Company is a performing group composed of skilled dance students who must qualify through auditions. This group presents concerts, lecture/demonstrations and performances on campus and in the community, of work choreographed by visiting artists, by faculty and by exceptionally talented students.

Teaching Certification: Applicants who wish to earn a teaching certificate must meet state certification requirements in addition to completing the course work required for the master's degree. For requirements, see the College of Education section of this Bulletin, page 75.

COURSES OF INSTRUCTION¹

Dance (DNC)

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)

540. Survey of the Dance Discipline. Cr. 2-4(Max. 16)

Examination of the profession, focusing on current practice and professional preparation. (W)

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)

544. Movement and Dance in the Music Class. (TED 544) (MED 554). Cr. 2

Exploration of the common basis for music and dance and the provision of a range of movement experiences for the music teacher. The philosophy of Orff Schulwerk which stresses the elemental relationships among language, music and movement. (W)

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)

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. (S)

580. Repertory. Cr. 1-4(Max. 12)

Prereq: DNC 401 or equiv.; admission-by audition. Learning, for

¹ See page 461 for interpretation of numbering system, signs and abbreviations

performance, of standard modern repertory, dance previously choreographed by instructor, Labanotated dance, work of Artist-in-Residence. (F,W)

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)

582. Creative Dance Movement for the Pre-School Child. (TED 582). Cr. 3
Creative dance activities; manipulative, musical, imaginative and kinesthetic approaches to movement. (F,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 graduate students in the choreography and performance emphasis. Admission by audition. Performing company. Performing, choreographic and/or production responsibilities. (F,W)

750. (P E 750) Research Methods. (R P 760). Cr. 3
Student computer account required. Empirical, philosophical and historical research in dance, health education and recreation and park services. Emphasis on ability to critically distinguish between these areas and the mode of research. Critical analysis of research literature. Research proposal writing techniques. Fundamentals of computer use. (F,W)

781. Seminar in Teaching Creative Dance. (DNE 781). Cr. 2
Investigation of theories of creativity, learning theories and their significance in the teaching of dance. Analysis of the creative aspects of the contemporary dance curriculum. (B)

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)

787. Dance Ethnology. Cr. 2
The study of the functional significance of communal dance in society; its religious symbolism and social purpose; its function as a source in the development of the dance-art of a culture. (B)

790. Directed Study in Dance. Cr. 1-3
Prereq: written consent of adviser and graduate officer. Open only to students in a designated dance curriculum option. (T)

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)

885. Seminar in Dance Techniques. (DNE 885). Cr. 2
Investigation, practice and analysis of classical ballet and modern dance technique; their similarities and differences, through readings,

films and practicals. (B)

887. Problems in Concert Production. Cr. 2-4
Consideration of details of dance production; costume, set design, lighting, organization, management and promotion. Field work component. (B)

Dance Education (DNE)

750. (P E 750) Research Methods. (R P 760) (H E 750) (DNC 750). Cr. 3

Student computer account required. Empirical, philosophical and historical research in dance, health education and recreation and park services. Emphasis on ability to critically distinguish between these areas and the mode of research. Critical analysis of research literature. Research proposal writing techniques. Fundamentals of computer use. (F,W)

781. (DNC 781) Seminar in Teaching Creative Dance. Cr. 2
Investigation of theories of creativity, learning theories and their significance in the teaching of dance. Analysis of the creative aspects of the contemporary dance curriculum. (B)

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)

885. (DNC 885) Seminar in Dance Techniques. Cr. 2
Investigation, practice and analysis of classical ballet and modern dance technique; their similarities and differences studied, through readings, films and practicals. (B)



MUSIC

Office: 105 Schaver Music Building; 577-1795

Chairperson: Peter J. Schoenbach

Associate Chairperson and Liaison for Music Education:

Joseph A. Labuta

Assistant to the Chairperson: Margot Demarais

Professors

Harold Arnoldi, Ray P. Ferguson, James J. Hartway, Joseph A. Labuta, Harry M. Langsford, Peter J. Schoenbach

Associate Professors

Carol J. Collins, Doris Richards, Dennis Tini

Assistant Professor

Michael Zelenak

Visiting Assistant Professor

Deborah Smith

Lecturer

Jeffrey Cooper, Authur Shaw, Andras Szentkiralyi, Mary Wischusen

Adjunct Professors

David DiChiera, Gunther Herbig

Adjunct Associate Professors

Salvatore Rabbio, Paul Schaller, Eugene Wade

Divisional Directors

Joseph Fava (guitar), Ray Ferguson (organ), Mischa Kottler (piano), Harry Langsford (voice), Matthew Michaels (jazz studies), Richard Piippo (strings), Salvatore Rabbio (percussion), Paul Schaller (woodwinds), Eugene Wade (brass)

Affiliated Performance Faculty

Richard Piippo (strings), Salvatore Rabbio (percussion), Paul Schaller (woodwinds), Eugene Wade (brass) Emily Austin (violin), Italo Babini (violoncello), Donald Baker (oboe), Clement Barone (flute), Alvin Belknap (trumpet), Christopher Birg (guitar), Frances Brockington (voice), George Cailotto (free bass accordion), Marcy Chanteaux (violoncello), Douglas Cornelson (clarinet), Jeanette Dagger-Haviaras (voice), Lee Dyament (guitar), Joseph Fava (guitar), Paul Ganson (bassoon), Robert Gladstone (string bass), Marjorie ordon (voice), Nathan Gordon (viola), Lana Gore (bayan), Oliver Green (clarinet), Carolyn Grimes (voice), Morris Hochberg (violin), William Horner (trumpet), Fedora Horowitz (piano), Elizabeth Ilku (harp), Elsie Inselman (voice), David Ireland (viola), Maxim Janowsky (string bass), Robert Jones (trombone and baritone), Edouard Kesner (violin), Muriel Kilby (piano), Edward Kingins (voice), Mischa Kottler (piano), Vladislav Kovalsky (piano), Gale Kramer (organ), Oscar LaGasse (tuba), Laurence Liberson (clarinet), Homer Lindsey (bassoon), David Ludwig (voice), Jose Mallare (saxophone), Boris Maximovich (piano), Ervin Monroe (flute), Ronald Odmark (oboe), Ginka Ortega (flute), Sergio Pezzetti (voice), Richard Piippo (violoncello), Geraldine Powers (voice), Salvatore Rabbio (percussion), Irv Sarin (trumpet), Paul Schaller (clarinet), Toma Schwartz (piano), Joseph Skrzynski (trombone and baritone), Gordon Smith (trumpet), Robert Sorton (oboe), Anna Speck (voice), Gordon Stump (trumpet), Darwin Swartz

(piano), James Tamburini (trumpet), Patricia Terry-Ross (harp), Linda Thorne (voice), Eugene Wade (french horn), Stacey Wooley (violin)

Graduate Degrees

Master of Arts — with a major in music

Master of Music — with a major 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 specialization 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 13. 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 aural perception, 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 of the major 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 major 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.

Candidates for the Master of Arts degree with a major in music, and the Master of Music degree with majors 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 major in performance or choral conducting must elect Plan C.

Oral Examination: An oral examination is required of all students electing Plan A or Plan C.

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 School of Fine and Performing Arts and the Graduate School; see pages 130 and 20-28, 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
Music electives or cognates.....	7
MUH 899.....	8
	32

Master of Music With a Major in Composition

Prerequisite: Bachelor of Music with a major 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 Divisional Director.

DEGREE REQUIREMENTS

	<i>credits</i>
MUT 506, 700, 710, 792.....	15
Music History (other than MUH 530 and directed study courses).....	6
MUH 530.....	3
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 Major in Theory

Prerequisite: Bachelor of Music with a major in theory or composition; acceptance into the program by the Divisional Director.

DEGREE REQUIREMENTS

	<i>credits</i>
Music Theory — from MUT 506, 700, 702, 704, 705, 710 (max. 3 cr.), 792.....	15
Music History (other than MUH 530 and directed study courses).....	6
MUH 530.....	3
MUH 899.....	8
	Total: 32

— With a Major in Choral Conducting

Prerequisites: Baccalaureate degree with a major in voice performance, 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 Divisional Director of the Voice Division. If MED 555, Choral Conducting and Rehearsal Techniques, or its equivalent, has not been taken as an undergraduate, it must be elected for no graduate credit.

DEGREE REQUIREMENTS

	<i>credits</i>
MUH 530.....	3
Music History (except MUH 530 and directed studies).....	6
MUT 702 (and other Music Theory courses except directed studies).....	6
MUA 745, Advanced Conducting: Choral or Orchestral.....	6
MUH 737, Choral Literature.....	3
Directed Studies (MUH 791 or MUT 792).....	5
Electives.....	3
Graduation recital required	
	Total: 32

— With a Major in Performance

Prerequisite: Bachelor of Music with a major in performance; acceptance into the program by the Divisional Director for the performance area.

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
Music Electives.....	4
Graduation Recital required	
	Total: 32

— With a Major in Music Education

Prerequisite: Bachelor of Arts or Science or Music in Music Education; acceptance into the program by the Divisional Director for Music Education.

DEGREE REQUIREMENTS

	<i>credits</i>
Music Education—including MED 757, 799.....	18
Music history (other than directed study courses).....	6
Electives.....	8
	Total: 32

COURSES OF INSTRUCTION¹

Music Theory (MUT)

- 504. History of Music Theory. Cr. 3**
Prereq: junior standing. Comprehensive survey from ancient Greeks to present. (I)
- 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)
- 508. Choral Arranging. Cr. 3**
Prereq: MUT 216. Open only to music majors. (B)
- 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)
- 704. Seminar in Twentieth-Century Composers. Cr. 2 (Max. 6)**
Prereq: MUT 406 or equiv. Compositional techniques and writings of various contemporary composers. (B)
- 705. Seminar in Music Theory Pedagogy. Cr. 2**
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. Introduction to Musicology. Cr. 3**
Prereq: graduate standing in music or consent of instructor. Music bibliography and research techniques. (F)
- 535. Performance Literature. 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)
- 731. Studies in Medieval Music. Cr. 3**
Prereq: MED 757 or MUH 530. Music from its origins to the Burgundian School. Special reports; research projects. (B)
- 732. Studies in Renaissance Music. Cr. 3**
Prereq: MED 757 or MUH 530. Fifteenth and sixteenth centuries, from Burgundian School through Palestrina. Special reports; research projects. (B)

- 733. Studies in Baroque Music. Cr. 3**
Prereq: MED 757 or MUH 530. From Monteverdi to 1750. Special reports; research projects. (B)
- 734. Studies in Classical Music. Cr. 3**
Prereq: MED 757 or MUH 530. From 1750 to 1825. Special reports; research projects. (B)
- 735. Studies in Romantic Music. Cr. 3**
Prereq: MED 757 or MUH 530. Nineteenth century. Special reports and research projects. (B)
- 736. Studies in Twentieth Century Music. Cr. 3**
Prereq: MED 757 or 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. curriculum for which the MUP course is required; written consent of the Department Chairperson; audition for first election.

Corequisite: Additional credits in any subject to equal at least four credits, including MUP election.

Fees: Special fees are assessed for these courses and are indicated in the *Schedule of Classes*.

Contact Hours: Cr. 3: fourteen lessons—one per week; Cr. 1: seven lessons—one lesson per two-week period.

- 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)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

- 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)

Music Applied (MUA)

- 562. Voice Class II. Cr. 2 (Max. 4)**
Prereq: MUA 172 or equiv. Voice building and repertoire; simple art songs. (W)
- 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)
- 571. Influence of Music on Human Behavior. Cr. 3**
Prereq: MUA 568; major in music therapy. Study of the function of music in ethnic groups, society in the United States, and specific handicapped populations. (F)
- 572. Music Therapy Techniques. Cr. 3**
Prereq: MUA 571. Structuring music activities toward specific goals with mentally and physically impaired clients. Role of music therapy in various types of agencies. (W)
- 573. Harpsichord Class. Cr. 2 (Max. 8)**
Prereq: MUA 379 or equiv. (F,W)
- 574. Foundations of Musical Behavior. Cr. 3**
Prereq: PHY 310, junior standing. No graduate credit. Research methods in musical ability, functional music, musical learning, musical preferences, aural responses. (W)
- 575. Pedagogy for Performers. Cr. 3**
Open only to performance majors or by written consent of chairperson. Instrumental or vocal pedagogy for students in the performance curriculum, to prepare them to teach as private or classroom applied music instructors. (I)
- 577. Techniques of Piano Accompaniment. Cr. 2**
Gives the advanced piano student various techniques of accompaniment among various types of literature. (I)

- 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 or MED 757. 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. Chamber Singers. 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)

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)
- 554. (DNC 544) Movement and Dance in the Music Class. Cr. 2**
Exploration of the common basis for music and dance and the provision of a range of movement experiences for the music teacher. The philosophy of Orff Schulwerk which stresses the elemental relationships among language, music and movement provides a major focus of the course. (I)
- 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)
- 557. Music in Special Education. Cr. 3-4**
Teaching techniques and music materials to meet the needs of special education students. (I)
- 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)
- 755. General Music in the Schools.** Cr. 2-3
Materials and aural techniques related to listening experiences. (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)
- 757. Introductory Master's Seminar.** Cr. 2-3
Prereq: consent of adviser or instructor. (Y)
- 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: MED 757; 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, University Theatres: Howard Burman

Professors

Howard Burman, N. Joseph Calarco, Robert T. Hazzard, Leonard Leone (Distinguished Professor Emeritus), Kathryn A. Martin, Robert E. McGill, Russell E. Smith

Associate Professors

Nira Pullin, Anthony B. Schmitt, Von H. Washington, Gary M. Witt

Assistant Professor

Sharon S. Campbell

Lecturers

Victor McQuiston, Robin Ver Hage

Theatre Support Staff

Philip Fox II, Francis Majeske, Margaret E. Spear

Graduate Degrees

Master of Arts—with a major in theatre

Master of Fine Arts—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 13. 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:

Theatre History THR 510 and 521
Development of Drama THR 512 and 701
Graduate Research: 2-3 credit course (elected with adviser's approval)
Electives: 11-12 credits (elected with adviser's approval).

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, or technical theatre.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13. 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.

DEGREE REQUIREMENTS: The Master of Fine Arts with a major in theatre is offered only as a Plan C master's program, requiring fifty-two to sixty credits depending on 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: *fifty-two credits. (Open only to members of the Hilberry Company.)*

Repertory Theatre.....THR 504 and 707. (Max. 12 credits)
 Studio.....THR 601, 602, 705, 706, 711, 712. (Max. 18 credits)
 Development of Drama.....THR 512 and 710.
 Teaching Internship.....THR 819 and 820.
 Seminar in Theatre.....THR 802.
 Graduate Research: 2-3 credit course (elected with adviser's approval)
 Literature/Criticism Sequence:
 THR 704 and 720, or THR 529 and 530, or THR 510 and 521.
 Electives: 4 credits (elected with adviser's approval).

The final project will consist of:

1. A recital demonstrating the student's ability for acceptable performance in a variety of acting styles. A theatre arts faculty committee will evaluate the recital.
2. The student must submit a paper on dramatic literature performed in recital, including a critical analysis and explanation of the creative process leading to performance.

The student is examined on all work done on his/her M.F.A. program.

Direction: *fifty-two credits. (Hilberry Company Fellowship Students)*

Repertory Theatre.....THR 504 and 707. (Max. 12 credits)
 Studio.....THR 601, 602, 705, 706, 711, 712. (Max. 18 credits)
 Development of Drama.....THR 512 and 710.
 Direction.....THR 506.

Teaching Internship.....THR 819 and 820.
 Seminar in Theatre.....THR 802.
 Graduate Research: 2-3 credit course. (elected with adviser's approval.)
 Literature/Criticism/History Sequence:
 THR 704 and 720, or THR 529 and 530, or THR 510 and 521.

Students in Direction NOT connected with the Hilberry Company will take the above curriculum with the substitution of elective credits and THR 505 in place of THR 504 and 707.

The final project will consist of:

1. After consultation with the theatre arts faculty, the student will be required to direct, independently, a 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 504 and 707. (Max. 12 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.
 Graduate Research: 2-3 credit course. (elected with adviser's approval.)
 Literature/History Sequence: THR 512 and 701, or THR 510 and 521.
 Electives: 10 credits (selected in consultation with adviser).

The final project will consist of:

1. A project in the student's area of expertise. The student will work under the close supervision of one or more of the theatre arts faculty.
2. The student will submit a written analysis of the work done on the project.
3. The student will be examined on all work done on the project.

Scenography/Stage Design and Technical Theatre: *sixty credits.*

Repertory Theatre.....THR 504 and 707 (Max. 12 credits).
 Development of Drama.....THR 512.
 Theatre History.....THR 510, 521.
 Direction.....THR 505.
 Seminar in Theatre.....THR 802.
 Teaching Internship.....THR 819.
 Technical Theatre Core.....THR 508, 509, 514, 515, 606, 607, and 703.
 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 504 and 707. (Max. 12 credits)
Development of Drama.....	THR 701.
Theatre History.....	THR 510, 521.
Play Direction.....	THR 505.
Seminar in Theatre.....	THR 802.
Teaching Internship.....	THR 819.
Technical Theatre Core.....	THR 503, 508, 514, 607, 703, 708.
Electives.....	THR 510 and 521.
Cognates.....	PHY 502, CSC 504.

Final project: (see above, under: Scenography/Stage Design and Technical Theatre).

Stage Costuming: sixty credits.

Repertory Theatre.....	THR 504 and 707. (Max. 12 credits)
Development of Drama.....	THR 701.
Theatre History.....	THR 510, 521.
Seminar in Theatre.....	THR 802.
Technical Theatre Core.....	THR 502, 519, 606, 608, 703, 708.
Electives.....	THR 510 and 521; and 10 credits elected in consultation with adviser.
Teaching Internship.....	THR 819.

Doctor of Philosophy with a Major in Theatre

At the Ph.D. level, the primary aims of this Department are to help students develop the analytical skills necessary for the study of theatre history and/or theatre criticism. 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 13. 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 in the Graduate School (see page 13), the applicant for graduate study in theatre should provide three letters of recommendation verifying academic interest and ability. 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.

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.

COURSES OF INSTRUCTION¹ (THR)

501. Theatre Costuming I. Cr. 3

Prereq: THR 101 or 103 recommended. 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)

504. Repertory Theatre. Cr. 1-4 (Max. 6)

Supervised experience in the Hilberry Theatre. (T)

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 full-length play on the University Student Stage. (W)

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. 4

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; 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, Film, and Television. Cr. 3 (Max. 6)

Prereq: ENG 383. Comparative study of scripts for stage, radio, television plays, and motion pictures. Practice in writing either an original script or an essay on some phase of contemporary dramatic form. Actual production of some scripts in experimental theatre and radio studios. (I)

514. Introduction to Scene Painting. Cr. 3

Prereq: THR 213. Laboratory and demonstration course as an

¹ See page 461 for interpretation of numbering system, signs and abbreviations

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. Laboratory and demonstration course for the design or technical theatre student. Materials, techniques, styles of scene painting. (I)

516. Techniques of Musical Comedy. Cr. 3

Analysis of musical comedy styles and techniques; exploration of key directorial and choreographic issues; performance projects emphasizing movement and composition. (S)

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. 3

Prereq: senior B.F.A. standing or M.F.A. Not open to M.A. students. Material fee as indicated in *Schedule of Classes*. Continued study and practice of musical comedy dance styles. (I)

521. Theatre History II. Cr. 4

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)

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. (F)

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. (W)

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)

607. Advanced Stage Lighting Design. Cr. 3(Max. 6)

Prereq: THR 306. Light design, color, optics, instruments, and control as related to advanced problems in stage lighting. Laboratory projects coordinated with University Theatre productions. (I)

608. Advanced Stage and Film Makeup. Cr. 2

Prereq: THR 305. Continuation of basic principles applied in THR 305; emphasis on new makeup materials; experimentation with prosthesis and design for problem makeup. (I)

610. Classical Acting Styles and Theories. Cr. 3

Prereq: three undergraduate acting courses or equivalent experience. A lecture and performance course at an advanced level to develop the actor's process of analyzing, creating, and performing characters from the classical drama for film, television and theatrical media. (S)

611. Special Projects in Design and Technical Theatre. Cr. 1-3

Independent research and practical application of research to specific projects. (I)

701. 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)

703. Advanced Technical Theatre Problems. Cr. 2(Max. 8)

Open only to M.F.A. theatre majors. Advanced study and research in scenic design, theatre architecture, stagecraft, lighting. Projects and reports. (I)

704. Studies in Dramatic Criticism. Cr. 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. Advanced Repertory Theatre. Cr. 1-4(Max. 6)

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)

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

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. (I)

786. (MUA 786) Opera Workshop. Cr. 1 (Max. 8)

790. Directed Study. Cr. 1-2(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, Studio and Children's Theatres. Credit determined by complexity of dramatic role performed. (T)

802. Seminar in Theatre. Cr. 1-3(Max. 6)

Prereq: THR 521, 704. (T)

819. Teaching Internship I. Cr. 1-3

Open only to third year Hilberry Acting Fellows. Assisting faculty members in teaching first-semester undergraduate-level acting. (F)

820. Teaching Internship II. Cr. 1-3

Open only to third-year Hilberry Acting Fellows. Assisting faculty members in teaching second-semester undergraduate-level acting. (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(Max. 30)

Prereq: consent of doctoral adviser. Offered for S and U grades only.

(T)



Division of Health and Physical Education

ACTING DIRECTOR: FREDERICK A. MULHAUSER

Foreword

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 and Physical Education is a separate, autonomous administrative unit of the University. It provides courses of instruction in driver education, health education, physical education and recreation and park services for the general student body. 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.

In addition to instructional courses, provision for further participation in physical education activities is provided by the following co-curricular programs: co-recreational activities in sports and swimming; intramural athletics for men and women; and intercollegiate sports for men and women in team and individual sports.

The College of Education is the degree-granting unit for all students majoring in a professional program.

Graduate Degrees

Master of Education—with a major in Health

and specializations in
school health
clinical/community health

Master of Education—with a major in Physical Education

and specializations in
science of human movement
educational theory and practice

Master of Arts in Recreation and Park Services

Master of Arts in Education—with a major in Sports Administration

and specializations in
interscholastic athletic administration
professional sports administration
commercial sports administration

ACADEMIC PROCEDURES

The College of Education is the degree-granting unit for students in the Division of Health and Physical Education. Thus, students must comply with the academic procedures of that college in pursuing degree programs, and students have access to the academic services of that college. Such procedures and services which are particularly relevant to students in the Division of Health and Physical Education are stated below. Students should also consult the College of Education section of this bulletin, beginning on page 61.

Accreditation

The programs of the College of Education have been accredited by the National Council for Accreditation of Teacher Education since 1959. The College has been reaccredited periodically since that time. Full accreditation for its programs was again granted in 1984 for a seven-year period.

Admission

Admission to the graduate degree programs of the Division of Health and Physical Education is contingent upon admission to the Graduate School, for requirements, see page 13. Students should also refer to the individual degree programs described in the following sections (pages 156-163).

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, 150 Administrative Services Building, 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.

Graduate Qualified Admission

An applicant with an honor point average (h.p.a.) below 2.25 must earn a minimum of eight semester credits in advanced level post-degree courses with an h.p.a. of at least 3.0 in order to be considered for graduate admission. Course work taken to establish eligibility for admission to graduate study cannot be used toward a graduate degree.

Revalidation of Credit

Upon recommendation of the adviser and approval of the graduate officer, a 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.

Attendance

Regularity in attendance and performance is necessary for success in college work. Although there are no officially excused absences by virtue of College policy, the conscientious student is expected to explain absences to the instructor. Such absences may be due to illness, required participation in inter-college activities (certified by the sponsoring faculty member), or other similar types of absence for which the student can present evidence of authorized participation. Each instructor, at the beginning of the course, will announce his/her attendance requirements.

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 Director of the Division of Academic Services, who serves as Graduate Officer.

Candidacy

Candidacy is an advanced status normally established upon completion of nine credits toward a master's degree by filing an approved *Plan of Work* with the College's graduate officer, 489 Education Building. The *Plan* 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.

Graduation

Graduation deadline dates for the semester in which candidates are completing degree or 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 by the Class Board prior to the event.

Academic Services of the College of Education

The Academic Services Division is responsible for admitting graduate students to the programs of the College of Education, maintaining all student files, and processing and certifying that graduate and teaching certificate requirements have been met. As the initial contact for prospective students at all degree levels, the Division provides information and advice concerning various programs offered by the College, admission procedures, teacher certification and degree requirements, and regulations and policies pertaining to the College and the University.

Education Placement Office

This unit serves graduates of the College who have completed initial teacher-preparation or advanced graduate programs and in-service teachers enrolled either now or previously in the University. All persons qualifying for teacher's certificates and those completing graduate programs are urged to register with this office.

Close contact is maintained with school systems in Michigan and in other states. Attempts are made to keep informed of current policies on teacher qualification and selection and trends in teacher supply and

demand. College and university staff vacancies for professional positions throughout the United States are listed with this office.

The specific functions of the Education Placement Office are: to assist registrants in preparing their credentials and in securing teaching positions; to assist school administrators in obtaining qualified teachers for the vacancies they may identify; and to assist in-service teachers and graduates who may wish to advance professionally.

Services to Students

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.

Division of Health and Physical Education Directory

Director	261 Matthaei; 577-4249
Assistant Director	267 Matthaei; 577-4249
Driver Education Department	267 Matthaei; 577-4249
Graduate Office	257 Matthaei; 577-4269
Health Education Department	262 Matthaei; 577-4265
Health Department	262 Matthaei; 577-4265
Physical Education Department	266 Matthaei; 577-4265
Recreation and Park Department	259 Matthaei; 577-4269
Intercollegiate Athletics.....	101 Matthaei; 577-4280
Mailing address for all offices: Wayne State University, Detroit, Michigan 48202.	

HEALTH EDUCATION

Office: 262 Matthaei Building
Chairperson: Amos O. Aduroja

Associate Professor

Robert Samaras

Assistant Professor

Amos O. Aduroja

Lecturer

Mary Paonessa

Graduate Degrees

Master of Education — with a Major in Health Education and specialization in School Health Education or Clinical/Community Health Education

Master of Education With a Major in Health Education

This department offers the Master of Education degree with two specializations in health education: school health, and clinical/community health. 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 13. Applicants to the program must satisfy or complete 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.
3. Successful completion of the Division's Graduate Writing Proficiency Examination before the completion of twelve credits of graduate course work.

The Graduate Record Examination is not required.

DEGREE REQUIREMENTS: The Master of Education degree is offered by this department under the following options:

Plan B: Thirty-six credits including a three credit essay or project.

Requirements for this degree include: eighteen credits in professional core courses; nine credits in a concentration; five to nine credits in

general professional education courses; and four to five credits in elective courses. (Professional education courses and electives should be chosen in consultation with an adviser). All course work must be completed in accordance with the regulations of the Graduate School and the Division of Health and Physical Education governing graduate scholarship and degrees, see pages 20-28 and 154, respectively. A minimum H.P.A. of 3.0 is required for the degree.

Curricula: The curriculum below lists core courses required of all students and the required courses for each concentration. If the student is deficient in health credits or related experience; he/she should consult an adviser for evaluation of his/her status.

Core 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 741 — Current Issues in Health Education.....	3
H E 743 — Health Education Program Administration.....	3
H E 750 — Research Methods.....	3
H E 799 — Terminal Master's Seminar and Project.....	3

School Health Concentration

H E 643 — School Health Curriculum.....	3
H E 644 — Workshop in Health Education.....	3
EER 761 — Evaluation and Measurement.....	3

Clinical/Community Health Concentration

H E 653 — Clinical/Community H E Program Development.....	3
H E 752 — Fieldwork in Clinical/Community Health Education.....	3
EER 763 — Fundamentals of Statistics.....	3

COURSES OF INSTRUCTION¹

Health (HEA)

532. (P E 632) Fitness Leadership. Cr. 4

Prereq: ANA 301, P E 357 or quiv. Material fee as indicated in *Schedule of Classes*. Physiology, anatomy, psychology and methodology of group fitness leadership. (T)

533. (P E 533) Principles of Athletic Training. Cr. 3

Prereq: ANA 301 or equiv. Needs and responsibilities of an athletic trainer-teacher in high school or college setting. Information, skills required in administering athletic training room. (T)

534. (P E 534) Prevention and Care 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, knee, muscle, and other injuries of the locomotor system and of the skin. Application of heat, light, diathermy, water; massage and special exercises. Bandaging, first aid procedures; training table; observation and directed experiences. (T)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

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)
- 565. Health and the Aging Process. Cr. 3**
Dynamics of later life with specific emphasis on health maintenance. Physiological aspects of aging and an overview of chronic conditions of the aged. For preprofessionals and paraprofessionals in the field of services to the aging. (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)
- 644. Workshop in Health Education. Cr. 1-3(Max. 6)**
Content areas in health education; lecture, discussion and individual or group projects. Topics may reflect current interests in health. (I)
- 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. (I)
- 741. Current Issues in Health Education. Cr. 3**
Exploration of current trends and issues in health education in the United States and world. Implications for program planning and development. (B)
- 743. Health Education Program Administration. Cr. 3**
Organizational theories, budget and personnel management and leadership responsibilities of the health educator in any employment setting. (B)
- 750. (P E 750) Research Methods. Cr. 3**
Student computer account required. Empirical, philosophical, and historical research in dance, health education and recreation and park services. Emphasis on ability to critically distinguish between these areas and the mode of research. Critical analysis of research literature. Research proposal writing techniques. Fundamentals of computer use. (Y)
- 752. Fieldwork in Clinical Health Education. Cr. 3**
Prereq: consent of adviser. Open only to Health Education majors. Offered for S and U grades only. Supervised experience in health education program planning, implementation, and evaluation in a health care setting. (Y)

- 754. (I T 711) Instructional Design. Cr. 4**
Prereq: I T 511 or L S 636 and I T 611 or consent of instructor. Principles of instructional design, task and job analysis, hierarchical sequencing, test item construction, and group instructional strategies. 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; large-scale curriculum evaluation; summative evaluation; formative evaluation for review of instructional design. (I)
- 795. Directed Study in Health Education. Cr. 1-3(Max. 3)**
Prereq: written consent of adviser and graduate officer. (B)
- 799. Terminal Master's Seminar and Project. Cr. 3**
Prereq: consent of adviser. Development and review of final project; seminar and exit interview arranged. (Y)
- 899. Master's Thesis Research and Seminar. Cr. 1-8(8 req.)**
Prereq: consent of adviser. (I)

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)



PHYSICAL EDUCATION

Office: 266 Matthaei Building
Chairperson: Mary L. Barnett

Associate Professors

Mary L. Barnett, David L. Bliervnicht, Jane C Fink (Emerita),
Vernon Gale, Frank McBride, Fredrick A. Mulhauser, Robert White

Assistant Professors

Sarah J. Erbaugh, William W. Sloan, John C. Wirth

Lecturer

Molly M. Sapp

Graduate Degrees

Master of Arts in Education — with a Major in Sports Administration, and Specializations in Interscholastic Athletic Administration, Intercollegiate Athletic Administration, Professional Sports Administration, and Commercial Sports Administration

Master of Education — with a Major in Physical Education, and Specializations in Science of Human Movement, and Educational Theory and Practice

MASTER'S DEGREE PROGRAMS

Admission to these programs is contingent upon admission to the Graduate School; for requirements, see page 13. The minimum admission requirements include: 1) an undergraduate major or minor in the respective field (or comparable experience as defined by the Department); and 2) an overall h.p.a. of 2.6 for regular admission, or 2.25-2.59 h.p.a. for qualified admission. An applicant with an honor point average below 2.25 must earn a minimum of eight credits in advanced post-graduate courses with an h.p.a. of at least 3.0 to be considered for graduate admission. Course work taken to establish admission to graduate study cannot be used toward a graduate degree.

Prospective students should apply to the University Graduate Admissions Office specifying a major in physical education or sports administration. All students must make arrangements for a personal interview with an adviser in their selected area of interest.

DEGREE REQUIREMENTS: For either the master of Education or the Master of Arts in Education, students may elect one of 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 of course work (neither thesis, essay, or project is required).

Plan of Work: During the term in which the student completes twelve credits toward the degree, the master's candidate must prepare an outline of his/her program in consultation with an adviser. This plan sets forth both courses completed and courses to be elected to satisfy degree requirements.

Master of Education with a Major in Physical Education and Specialization in Theory and Practice

Admission: See above under Master's Degree Programs.

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.

For each degree plan, A, B, or C (see above), a total of thirty-two credits is required, including a minimum of twenty credits in the specialization, six credits in the General Professional Sequence, and the remainder in electives reflecting the student's area of interest.

Specialization Courses

	Credits
P E 750 — Research Methods.....	3
P E 799 or P E 899 or Plan C Option	
— Master's Essay or Project	3
— Master's Thesis Direction	8
— Plan C option: additional credits to meet minimum requirements	

Three of the following Physical Education Theory and Practice courses:

P E 751 — History and Philosophy of Physical Education.....	3
P E 754 — Organization and Administration of Physical Education and Athletics.....	3
P E 755 — Designing Physical Education and Fitness Programs.....	3
P E 757 — Psycho-Social Aspects of Physical Education.....	3
Total:	20-26

General Professional Sequence: A minimum of six credits are required in education foundation (core) courses. The student must complete one course from each of three different subject areas listed below. 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. Students should consult Dolores Stevens, College of Education, telephone 577-1788, for evaluation of transfer credit.

	Credits
Educational Administration (EDA 760).....	2
Counselor Education (CED 670)	2
Educational Evaluation and Research (EER 761).....	2-3
Educational Sociology (EDS 763)	2-3
Educational History and Philosophy (EHP 760).....	2-3
Educational Psychology (EDP 545, 548, 735).....	2-3
Reading (RDG 712).....	2-3
Total:	6

Electives: A maximum of six elective credits are applicable to this degree. Elective courses may be taken in physical education or other disciplines.

— with Specialization in Human Movement in Physical Education

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: For each master's degree plan, A, B, or C (see page 158), a total of thirty-two to thirty-five credits is required. Students selecting this program will concentrate in one of three areas: biomechanics, exercise physiology, or motor control. Twenty to twenty-three credits are required for the specialization.

Specialization Courses

	<i>Credits</i>
P E 750 — Research methods.....	3
P E 799 or P E 899 or Plan C Option	
— Master's Essay or Project	3
— Master's Thesis Direction	8
— Plan C option: additional credits to meet minimum requirements.....	0-5
Total:	8-11

Concentrations

Biomechanics

P E 632 — Fitness Leadership	3
P E 856 — Exercise Physiology	3
P E 853 — Motor Learning	3
Electives	3-5

Exercise Physiology

P E 632 — Fitness Leadership	3
P E 856 — Exercise Physiology	3
Electives	3-5

Motor Learning

P E 853 — Motor Learning.....	3
P E 758 or P E 856	
— Biomechanical Analysis of Motor Activity	3
— Exercise Physiology.....	3
Electives.....	6-8

General Professional Sequence

EER 763 — Fundamentals of Statistics.....	3
EER 864 — Variance and Covariance	3

Electives (six credits): These courses may be taken in physical education or in other disciplines. RDG 712 is required for students pursuing continuing certification. Questions regarding applicable transfer credit to satisfy this requirement should be addressed to Dolores Stevens, College of Education, telephone: 577-1788.

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 elect courses from three areas of specialization: interscholastic athletic administration, intercollegiate athletic administration, and professional/commercial sports administration.

Admission: See page 13. An undergraduate degree in physical education is recommended for admission to this program, however, students with undergraduate degrees in other relevant areas will be considered.

Degree Requirements: For each master's degree plan, A, B, or C (see page 158), thirty-two credits are required. Courses are to be distributed as follows: fourteen credits in required specialization course work and ten to eighteen credits in courses selected to support the student's concentration area.

Specialization Courses

	<i>Credits</i>
P E 750 — Research Methods.....	3
P E 641 — Introduction to Sports Administration	3
P E 875 — Internship in Sports Administration	4
P E 799 or P E 899 or Plan C Option	
— Master's Essay or Project	3
— Master's Thesis Direction	8
— Plan C option: additional credits to meet minimum requirements	
EDA 762 — Introduction to Administration	4

Concentration Courses

ACC 601 — Financial Accounting.....	3
ACC 602 — Managerial Accounting.....	3
FBE 604 — Financial Administration (Prereq: ACC 601).....	2
EDA 760 — Structure of American Education	2
EDA 861 — Management Planning Techniques in Education	4
EDA 868 — Seminar in Administrative and Organizational Behavior	4
P E 534 — Care and Prevention of Athletic Injuries	3
P E 551 — Principles of Coaching	3
P E 632 — Fitness Leadership	3
P E 754 — Organization and Administration in Physical Education	4
P E 790 — Directed Study in Physical Education.....	2
R P 561 — Facility Maintenance in Recreation/Park Services.....	3
R P 664 — Legal Issues in Leisure Service Systems.....	3
SPR 756 — Seminar in Media Production	3
SPR 757 — Seminar in Educational Mass Communications	3

Electives: Ten to eighteen credits in elective courses may be taken in physical education or other disciplines. Students should consult their adviser regarding program planning.

Endorsement in 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 eleven to fifteen credits in adapted physical education courses.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13. Additionally, applicants must possess a valid Michigan teaching certificate in physical education or any area of special education.

ENDORSEMENT REQUIREMENTS

	<i>Credits</i>
P E 540 — Introduction to Adaptive Physical Education	3
P E 541 — Adaptive Physical Education: Methods & Materials	3
P E 542 — Curriculum Development in Adaptive Physical Education	3
SED 503 — Education for Exceptional Children	3
SED 525 — Techniques in Educating Children with Physical Impairment	2
SED 714 — Curriculum Development for the Developmentally Disabled	3
SED 715 — Educational Diagnosis and Interventions	3
P E 543 — Practicum in Adapted Physical Education	2-6

Total: 22-26

Continuing Certificates

The State Board of Education provides the following two methods by which the continuing certificates can be granted:

Eighteen-Hour Continuing Certificate

For 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.*

Thirty-Hour Continuing Certificate

For information regarding the Thirty-Hour Continuing Certificate, please consult with the Certification Officer, 469 Education Building.

The additional required credit, as well as the requisite teaching experience **must follow** the date of issue of the original provisional certificate.**

Teachers of K-12 subjects: art, dance, music, physical education, and special education may present experience at any grade level from kindergarten through grade 12. All candidates for a continuing certificate must have completed in their undergraduate or post-graduate preparation a three-credit course in reading in the content areas, in order to qualify for a continuing certificate.

Assistantships, Scholarships and Financial Aid

A number of assistantships are available in the Department of Physical Education. Application should be made to the Office of the Assistant Director, 267 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.

COURSES OF INSTRUCTION¹ (P E)

533. Principles of Athletic Training. (HEA 533). Cr. 3
Prereq: ANA 301 or equiv. Specific needs and responsibilities of an athletic trainer-teacher in a high school or college setting. Emphasis on information, skills required in administering an athletic training room. (B)

534. Prevention and Care 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, knee, muscle and other injuries of the locomotor system and the skin. Application of heat, light, diathermy, water, massage and special exercises. Bandaging, first aid procedure; training table; observation and directed experiences. (B)

* For a student who is admitted to a program leading to a master's degree, the first eighteen credits are considered a planned program. Students not seeking a master's degree should consult with a counselor in 267 Matthaei regarding an appropriate planned course of study.

**

W.S.U. students completing degree and certificate programs may not apply graduate credit taken under the Senior Rule toward a continuing certificate.

¹ See page 461 for interpretation of numbering system, signs and abbreviations.

n 540. Introduction to Physical Education for Exceptional Children and Adolescents. Cr. 3

Prereq: admission to senior college in physical education, recreation, or special education. 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: admission to senior college in physical education, recreation, or special education. 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: admission to senior college in physical education, recreation, or special education. 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. (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: admission to senior college. Specific topics on the coach and the athlete in areas of administration, motor learning, physical growth, motor skill acquisition, philosophy, psychology and sociology. (B)

632. Fitness Leadership. (HEA 532). Cr. 3

Prereq: ANA 301, P E 357 or equiv. Material fee as indicated in *Schedule of Classes*. Physiological and anatomical principles of physical fitness. Optimum nutrition for health, weight control and performance. Construction of fitness programs and evaluation of fitness levels. (B)

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)

654. Workshop in Physical Education and Athletics. Cr. 1-4(Max. 8)

Teachers, school administrators and consultants working on current problems in physical education and athletics. (S)

750. Research Methods. (R P 760) (DNC 750) (DNE 750) (H E 750). Cr. 3

Student computer account required. Empirical, philosophical, and historical research in dance, health education and recreation and park services. Emphasis on ability to critically distinguish between these areas and the mode of research. Critical analysis of recent literature. Research and proposal writing techniques. Fundamentals of computer use. (F,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)

754. Organization, Administration and Supervision of Physical Education and Athletics. Cr. 3

Responsibilities and concerns of administrators of physical education and athletic programs in educational institutions. Basic administrative philosophy, program goals, and policies and procedures relative to directing educationally-focused physical education and athletic programs. Problem-solving skills concerning personnel, budgets, program management, and supervision. (B)

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)

790. Directed Study in Physical Education. Cr. 1-8(Max. 8)

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 project outlines. Graduate students present proposed studies for analysis by faculty and students in seminar. (F,W)

841. Current Issues in Physical Education. Cr. 2-4(Max. 4)

Examination of contemporary problematical questions in physical education with emphasis on problem-solving techniques. (S)

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)

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)

875. Internship in Sports Administration. Cr. 1-4

All facets of an assigned organization; interaction with management personnel and the general public. (T)

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

Prereq: consent of adviser. (F,W)



RECREATION AND PARK SERVICES

Office: 259 Matthaei Building
Chairperson: Diane Pick

Associate Professor

Diane Pick

Lecturer

Doris Finlay

Graduate Degree

Master of Arts in Recreation and Park Services

The Master of Arts offered by this department is a non-teaching degree program administered by the Division of Health and Physical Education and awarded through the College of Education. 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 the Department of Recreation and Park Services are automatically enrolled as members of the Student Recreation and Park Association. Twice yearly, professional development seminars are offered by the Department to students and professionals in the area.

Master of Arts in Recreation and Park Services

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13. 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 the graduate coordinator in the Department prior to final approval for admission. Graduation in a bachelor's degree program from a college or university with a 3.0 average is required for regular admission. Students with an average between 2.6 and 2.99 will receive qualified admission for the first nine credits of their graduate program. If a 'B' average is attained during that time, probationary status will be removed. Students with an average below 2.6 must enroll in nine credits of post-degree course work in recreation and park services and must receive all 'A' or 'B' grades. Post-degree course work cannot count toward the graduate degree. 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 contact the Department, telephone: 577-4269.

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-two credits including a three credit project.

The thirty-two required 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 department. Satisfactory completion of the Departmental writing exercise is required prior to filing a *Plan of Work*. The *Plan* must be filed prior to completing sixteen credits toward the degree and is developed in consultation, and with the approval of, the student's adviser.

All course work must be completed in accordance with the regulations of the Graduate School and the Division of Health and Physical Education governing graduate scholarship and degrees, see pages 20-28 and 154, 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 grade point average to a 'B.' All work toward the Master of Arts degree must be completed within a period of six years.

Required Core Courses

	Credits
R P 760 — Research Methods	3
R P 761 — Foundations for Community Recreation Leadership.....	4
R P 768 — Resources Development and Management	3
R P 861 — Current Professional Issues.....	4
R P 799 or R P 899	
— Master's Project Direction.....	3
— Master's Thesis Direction	8

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 34.

Assistantships, Scholarships, and Financial Aids

A limited number of assistantships are available through this department. Application should be made to the Chairperson. Scholarships, loans, work-study programs, and other types of financial aid are available through the University. Students should contact the Office of Scholarships and Financial Aid, 222 Administrative Services Building.

COURSES OF INSTRUCTION¹ (R P)

562. Advanced Field Work. Cr. 1-6(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)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

- 566. Independent Study. Cr. 1-2(Max. 6)**
Supervised research, applied or action, in the student's area of concentration or interest. (F,W)
- 568. Wilderness Leadership. Cr. 3**
Prereq: basic course in first aid. Leadership of groups in wilderness settings; equipment, skills, preparation for trips. Weekend trip required. (B:S)
- 593. Facility Planning and Design. Cr. 3**
Fundamentals of planning and design emphasizing leisure facilities in the urban setting; elementary studio design projects and field inspections. (B)
- 596. 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)
- 598. 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 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)
- 664. Legal Issues in Leisure Service Systems. Cr. 3**
Identification and exploration of legal concepts and issues related to professional leisure and recreational agencies and services. (B)
- 665. Supervision and Management in the Leisure Services. Cr. 4**
Supervision and management of recreation personnel, facilities and services; decision making, communication and public relations techniques. One hour arranged. (B)
- 667. Outdoor Recreation. Cr. 3**
Meaning, significance, historical background; facilities, agencies and programs at the federal, state and local levels; organizations and future projections. (B)
- 669. Workshop in Recreation and Park Services. Cr. 1-2(Max. 6)**
Students and professionals explore current problems in the field or professional challenges. (T)
- 698. 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)
- 760. (P E 750) Research Methods. Cr. 3**
Student computer account required. Empirical, philosophical and historical research in dance, health education and recreation and park services. Emphasis on ability to critically distinguish between these areas and the mode of research. Critical analysis of research literature. Research proposal writing techniques. Fundamentals of computer use. (F,W)
- 761. Foundations for Community Recreation Leadership. Cr. 4**
Basis for community recreation and leisure services; study of related services and programs; professional growth and development

exercises. One hour arranged. (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)

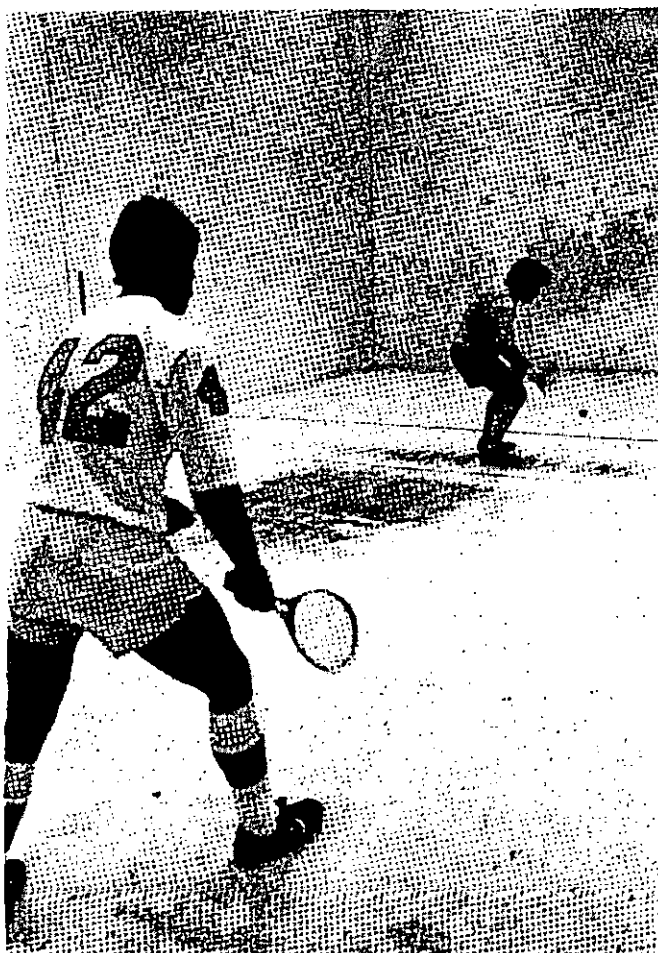
790. Directed Study in Recreation and Park Services. Cr. 1-3(Max. 6)

Supervised research in the field of recreation and park services in line with student's professional goals. A written *Plan of Work* must be filed in Departmental and College of Education offices prior to registration. (F,W)

799. Master's Project Direction. Cr. 1-3
Development and review of master's project under supervision of student's adviser. Registration should be in line with student's *Plan of Work*. (F,W)

861. Current Professional Issues. Cr. 4
Identification, analysis and attempted solutions to current problems, challenges and issues facing the leisure services industry. Seminar and research assignments. One hour arranged. (B)

899. Master's Thesis Direction. Cr. 1-8(8 req.)
Development and review of master's thesis under supervision of student's adviser and with approval of thesis committee. Registration should be in line with student's *Plan of Work*. (F,W)



Law School

INTERIM DEAN: ROBERT H. ABRAMS

Academic Calendar 1987-1989

Summer Term, 1987*

Registration.....	Week of May 11, 1987
Classes begin.....	Mon., May 18
Memorial Day recess.....	Mon., May 25
Classes end.....	Thurs., July 2
Independence Day recess.....	Fri., July 3
Examination period.....	Tues.- Fri., July 7-10
Summer term ends.....	Fri., July 24

First Year Summer Program, 1987*

Registration and orientation.....	Tues.-Fri., June 2-5
Classes begin.....	Mon., June 8
Independence Day recess.....	Fri., July 3
Classes end.....	Fri., July 31
Examination period.....	Mon.- Fri., Aug. 3-7

Fall Term, 1987*

Registration—	
First year evening students.....	Mon., Aug. 17
First year day students.....	Fri., Aug. 21
All other students and graduate law students.....	Mon., Wed. and Thurs., Aug. 24, 26, and 27
Classes begin—	
First year evening students.....	Mon., Aug. 17
First year day students.....	Mon., Aug. 24
All other students.....	Mon., Aug. 31
Labor Day recess.....	Mon., Sept. 7
Thanksgiving recess.....	Thurs.- Sun., Nov. 26-29
Registration for winter term, 1988.....	Mon.- Thurs., Dec. 7-10
Classes end.....	Wed., Dec. 9
Review and reading period.....	Thurs.- Sun., Dec. 10-13
Examination period.....	Mon.- Thurs., Dec. 14-24
Fall term ends.....	Thurs., Dec. 31
Holiday recess.....	Fri.- Fri., Dec. 25, 1987 - Jan. 1, 1988

Winter Term, 1988*

Winter term begins.....	Fri., Jan. 1, 1988
Classes begin.....	Mon., Jan. 11
Spring recess.....	Sun.- Sun., Mar. 6-13
Classes resume.....	Mon., Mar. 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 meetings.....	Sat.- Sun., May 14-29
Academic year ends.....	Sun., May 29
Law School commencement.....	Sat., June 18

Summer Term, 1988*

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.....	Tues.- Fri., July 12-15
Summer term ends.....	Fri., July 29

First Year Summer Program, 1988*

Registration and orientation.....	Tues.- Fri., June 9-10
Classes begin.....	Mon., June 13
Independence Day recess.....	Mon., July 4
Classes end.....	Fri., Aug. 5
Examination period.....	Mon.- Fri., Aug. 8-12

Fall Term, 1988*

Registration—	
First year evening students.....	Mon., Aug. 15
First year day students.....	Fri., Aug. 19
All other students and graduate law students.....	Mon., Wed. and Thurs., Aug. 22, 24 and 25
Classes begin—	
First year evening students.....	Mon., Aug. 15
First year day students.....	Mon., Aug. 22
All other students.....	Mon., Aug. 29
Labor Day recess.....	Mon., Sept. 5
Thanksgiving recess.....	Thurs.- Sun., Nov. 24-27
Registration for winter term, 1989.....	Mon.- Thurs., Nov. 28- Dec. 1
Classes end.....	Wed., Dec. 7
Review and reading period.....	Thurs.- Sun., Dec. 8-11
Examination period.....	Mon.- Fri., Dec. 12-22
Fall term ends.....	Fri., Dec. 31
Holiday recess.....	Sun., Dec. 25, 1988 - Sun., Jan. 1, 1989

Winter Term, 1989*

Winter term begins.....	Sun., Jan. 1, 1989
Classes begin.....	Mon., Jan. 9
Spring recess.....	Sun.- Sun., March 5-12
Classes resume.....	Mon., March 13
Classes end.....	Sat., April 22
Review and reading period.....	Sun.- Sun., April 23-30
Examination period.....	Mon.- Fri., May 1-12
Grading, consultation and final faculty meetings.....	Sat.- Sun., May 13-28
Academic year ends.....	Sun., May 28
Law School commencement.....	Sat., June 17

* Tentative.

THE STUDY OF LAW AT WAYNE

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 more than fifty 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. At the time of its largest enrollment, the Law School had more than 1,000 students and a faculty of more than forty full-time professors. The present long-term plan calls for a student body of 700 and a full-time faculty of about thirty members.

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, prosecutor's and defender's offices, and in many law-related fields. Its rich and varied educational program is designed not just 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 self-expression, and 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, prosecutor's and defender's offices, and public interest law offices, as well as with private law firms. Wayne clinical programs allow students to represent real clients as part of their training, and at the same time provide a vital service to the Detroit community.

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 federal judges and practitioners whose professional perspective is particularly valuable in certain kinds of courses and seminars.

Wayne State University Law School has recently received national recognition for its decision to maintain the quality of its student body in the face of declining numbers of law school applicants. The faculty has intentionally reduced the size of the School by nearly one-third in order to maintain admissions standards, resulting in smaller first-year sections and improved access to specialized upper-level offerings. The decision to maintain student quality has resulted in a substantial improvement in the School's relative ranking among American law schools; the credentials of recent entering classes placed the Law School solidly in the top quarter of American law schools.

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; the School is also accredited by the Michigan State Board of Bar Examiners.

Wayne State Law School has recently established a 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.

Detroit Cultural Center

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.

Law School Facilities

The Law School is a vital part of a major urban university complex with a total enrollment of about 27,000 students. 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, Free Legal Aid Clinic, the Student Board of Governors, and the student lounge are also located in this building. A third building, opened in 1971, houses the offices of the Clinical Advocacy Program and the legal research and writing instructors, some faculty offices, the Law School Placement Service, and additional study carrels.

Arthur Neef Law Library

Wayne State's law library is the second largest in the state of Michigan, comprising some 330,000 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. About 1,500 periodicals and over 1000 looseleaf services are received regularly. In 1971 Wayne State University Law Library was designated as an official depository for U.S. Government publications and now contains over 100,000 of these documents.

In addition to a virtually complete collection of all Michigan legal materials, the Library contains the reported cases of the highest courts and most of the lower court reports of all of the states and territories of the United States as well as all available current statutory compilations. 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 students and faculty of the Law School have available the use of LEXIS and WESTLAW, computerized research for institutional purposes, as well as computer laboratory facilities for supportive services.

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.

Placement

Wayne State University Law School graduates are in substantial demand by law firms, government agencies, corporations and law-related employers in Michigan and throughout the country. A substantial percentage of each year's class remains in the state, joining not only prestigious law firms in Detroit, Grand Rapids and other large cities but also smaller law offices around Michigan. Many students begin their careers in clerkship positions with state and federal judges, and increasing numbers of students are finding employment in the large midwestern urban centers outside Michigan and in Washington D.C. Graduates of Wayne State Law School are members of the United States House of Representatives (Representatives John Conyers and Dennis Hertel), and the Michigan Senate and House of Representatives.

Two Wayne alumnae, Patricia Boyle and Dorothy C. Riley, are Justices of the Michigan Supreme Court, and alumnus Damon S. Keith is a judge for the United States Court of Appeals for the Sixth Circuit. Many other graduates occupy judicial positions in federal district courts and all levels of Michigan courts. Others hold positions of major responsibility, including policymaking, with federal agencies in Washington, D.C. One alumnus, now with a major Chicago firm, is a former Attorney General of the State of Illinois. In addition, graduates of the School are chief executive officers of major corporations, both in Michigan and elsewhere, and several alumni are professors in law schools around the nation.

The Law School provides a full-time Placement Service facility under the direction of an assistant dean. The purpose of the service is to provide law and law-related positions for students, graduates and alumni. Lawyers, governmental agencies, corporations, law firms, and others are provided with office facilities in which to conduct on-campus interviews with applicants. The Placement Office receives strong support from the Law School Alumni Association as well as individual alumni.

Most law students obtain summer or part-time legal employment before the end of their second year of law study. This provides valuable exposure to the practice of law, may lead to a permanent position upon graduation, and helps provide part-time or summer income. While first-year students do not participate in on-campus interviews or engage in part-time legal employment, all students are encouraged to begin exploring career alternatives through placement seminars and reading relevant literature early in their law school studies. The Placement Office tries in every way to assist students in their job searches; however, the ultimate responsibility for obtaining satisfactory employment rests with the student.

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 Law in Corporate and Financial Law

Master of Law in Labor Law

Master of Law 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 Admission Committee will take into account the nature of college work completed as well as the grades achieved. In general, an undergraduate liberal arts education is preferred to one which is narrowly specialized, but a professional or specialist degree does not preclude admission. Proficiency in the English language, both written and spoken, and in analytical skills are essential to both the study and practice of law.

The suggestions for pre-law preparation in the *Prelaw Handbook*, published by the Law School Admission Council, are valuable. 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, Box 2000, Newtown, PA 18940, and is also available in most university bookstores and libraries. Students and others who are in Detroit are invited to come to the Wayne Law School Admissions Office, 231 Law Library, during regular office hours to consult the *Prelaw Handbook* and other Law School reference material.

Requirements for Admission

Wayne State University does not discriminate on the basis of race, color, religion, national origin, handicap, marital status, age, sex, or sexual orientation in the hiring of applicants for employment, in the treatment of University personnel or in the admission of students.

Admission to the Law School requires a bachelor's degree from a regionally accredited college or university. Applicants must have or expect to receive the degree by the summer preceding admission to the Law School. An official transcript showing the bachelor's degree must be sent to the Law School by the degree-granting school prior to registration.

The Law School does not admit first-year classes for the January semester.

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 guarantee 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 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 grade point average;
2. an applicant's minority status — black, Latin American or American Indian.
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 demographic

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.

The *Prelaw Handbook* includes information showing LSAT scores and grade point averages of persons accepted or rejected in the prior year by Wayne State University and other law schools.

Any person admitted to the first-year class whose undergraduate grade point average and LSAT score are substantially below the average admission factor may be required to enroll in and complete the First Year Summer Institute (including the writing of examinations) as a condition of eligibility to enroll in the fall semester and to continue as a law student.

Please note the following items when making application:

APPLICATION: Applications should be typed, written neatly, or printed; if not typed, they should be done 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 DEADLINE: All applications must be on file with the Law School on or before April 15. Applications received later than April 15 will be considered after applications timely received or may be refused. It is the applicant's responsibility to ascertain that all credentials are in. Notices on incomplete applications are not sent by the Law School.

APPLICATION FEE: A fee of \$20.00 (\$30.00 for foreign students) must accompany the application for admission. The fee is to defray, in part, the cost of processing the application and is not refundable. Checks should be made payable to Wayne State University. Those drawn on Canadian and other foreign banks must carry the notation 'payable in U.S. funds, plus service charge.'

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 by the December prior to the first year for which admission is sought. The LSDAS/LSAT Bulletin, 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, Box 2000, Newtown, PA 18940.

REPEATING THE LSAT: Applicants who have good reason, such as extreme anxiety or poor health at the time of the initial test, to think that they would increase their score if they took it again, may repeat the LSAT. In such cases, the Law School generally averages the scores.

TRANSCRIPTS: Each applicant who has attended undergraduate schools in the United States must register with the Law School Data Assembly Service (LSDAS). Registration forms are in the LSDAS/LSAT Bulletin. Applicants who have completed undergraduate work in foreign institutions are not required to register with LSDAS. All applicants must *also* send an official transcript, when it is available, showing receipt of the bachelor's degree, directed to the Wayne State University Law School Admissions Office.

RECOMMENDATIONS AND INTERVIEWS: Applicants are urged to submit at least one letter of recommendation. Except in unusual circumstances, personal interviews are not required. Those interested

in discussing their application or in seeing the Law School are encouraged to make an appointment with an Admissions Counselor; call the Admissions Office: (313) 577-3937.

MINORITY STATUS: An applicant who wishes to be considered as Latin American or American Indian should explain briefly his or her status within such a category. For example, Latin Americans should indicate the country of origin. American Indians should submit with the application a tribal certificate or similar document.

PERSONAL STATEMENT: Although a personal statement is not required, applicants are invited to submit one. A statement should be written when there are unusual characteristics in an academic record or if any other aspect of an application needs explanation or amplification.

ADMISSION FACTOR: In determining admissions ratings, the Law School considers an applicant's LSAT score and undergraduate grade point average to be of equal weight. Junior or community college grades are not used in determining the factor, nor are grades from graduate programs.

ADMISSIONS DECISIONS: The Admissions Committee is composed of law professors, students, the Associate Dean, an Assistant Dean, and the Director of Admissions. The Admissions Office evaluates individual applications, ranks them and makes admissions decisions in keeping with Law School policies. Applications of those who are not admitted by the Admissions Office are reviewed on the basis of discretionary criteria by the faculty members of the Committee.

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.

DEFERRED ADMISSIONS: The Law School does not have a deferred admissions policy. An admittee who withdraws from the class before registration 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.

EVENING CLASSES: The evening program is described on page 170.

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 at least a full year of law study, but not more than two, may apply, for admission with advanced standing. Law school grades, along with the candidate's general application information and original admissions credentials, are evaluated. For serious consideration, a transfer applicant should have a law school average of at least a 'B'. If admitted, no credit will be transferred for courses with a grade of C-minus or below.

Applicants must submit official undergraduate transcripts showing receipt of the bachelor's degree, 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 submit an LSAT score. An evaluation of what credits, if any, may be transferred from the foreign institution may be made, but only after the completion of one year of course work at Wayne State Law School. However, the American Bar Association Standards and Rules of Procedure for Approval of Law Schools provide:

Advanced standing and credit allowed for foreign study shall not exceed one-third of the total required by the Standards for the first professional degree unless the foreign study related chiefly to a system of law basically followed in the jurisdiction in which the admitting school is located; and in no event shall the maximum advanced standing and credit allowed exceed two-thirds of the total required by the Standards for the first professional degree.

GUESTS: 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 law school grade average is at least 'C'. A law student who wishes to take one or two full semesters for the purpose of transferring credit must apply in the same manner as a transfer applicant, meeting the same law school average and submitting the same credentials.

Degree Requirements and Programs

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. This includes the completion of eighty-six credits of passing work with an average grade of 2.0 or better and full-time residence for a period of three years, or its equivalent. (Students entering the Law School prior to the summer 1981 semester must complete eighty credits.) Students must complete the J.D. degree requirements within five years of the date they entered.

The first-year curriculum for J.D. candidates includes the required basic courses of contracts, criminal law, civil procedure, property and torts. The first-year student also takes a course in legal writing and research, concentrating on legal writing and advocacy in practice appellate proceedings. This culminates in an oral argument judged by the legal writing instructor and practicing attorneys. After completing the first-year required courses, the student can choose from among eighty elective courses and seminars, including interdisciplinary courses covering a broad range of subjects. The only requirements beyond the first-year courses are JDC 670—Constitutional Law, JDC 680—Professional Responsibility and the Legal Profession, and satisfaction of a writing requirement by election of a seminar or directed study. Students with special interests may concentrate their study in such areas as commercial law, taxation, labor law, criminal law, international and comparative law, and urban law. Students may also participate in clinical programs for academic credit. For a detailed description of course and seminar offerings, see page 182.

Evening Program: In addition to the regular three-year degree program, the Law School offers an evening program intended primarily for those students who work during the day and are unable to devote their full time to the study of law. It 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 consists of JDC 610—Civil Procedure, JDC 620—Contracts, and JDC 640—Legal Writing and Research. Second year evening students take JDC 670—Constitutional Law I, JDC 630—Criminal Law, JDC 650—Property, and JDC 660—Torts; and may choose additional electives.

Thereafter, the curriculum is entirely elective, except for JDC 680—Professional Responsibility and the Legal Profession, and satisfaction of the writing requirement.

Evening classes are generally held from 6 to 8 p.m., Monday through Thursday evenings, but elective classes are scheduled from 5 to 6 p.m. and on Friday evenings and Saturday mornings to provide a wider selection. Evening students often accelerate their progress by electing courses in the Law School's eight-week summer semester. Elective courses in the day and evening programs are interchangeable. It is not uncommon for evening students to elect some day classes, and vice versa, and for upper class students to change from one program to another, as they are free to do.

Honors Degree: The Law School awards the J.D. degree with the special distinction of *cum laude*, *magna cum laude*, or *summa cum laude* to students whose work merits special honor.

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 simultaneous 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, English, and American backgrounds on the law. They may also take courses in 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.

Legal Research and Writing

The first-year Legal Research and Writing course, taught in small classes by full-time instructors, begins with a non-graded orientation program lasting five full days for day students and eight evenings for evening students. During orientation, the instructors describe the Law School curriculum, the case method of teaching, the organization of the federal and state court systems, and the way a legal case progresses through a court system. The instructors next use the case method to help students to analyze actual appellate court cases. The students use their newly-developed case analysis skills to analyze and organize a hypothetical problem as a law office memorandum. Interspersed with the academic orientation activities are a variety of social events designed to acquaint the students with both their colleagues and the Law School faculty.

Following orientation, students meet with their legal research and writing instructors both in weekly class sessions lasting two hours and in frequent individual conferences. First semester class time is devoted primarily to the teaching of writing, organization, and case analysis skills. Students learn to use library materials by researching a legal problem with a small group of students in sessions conducted by a teaching assistant. Because the legal research and writing program is founded on the philosophy that students should have several opportunities to practice each new skill prior to receiving a grade for their efforts, students complete a variety of nongraded research and writing exercises early in the semester, a research memorandum, and a trial brief.

In the second semester, instructors teach oral and written appellate advocacy skills and students deliver two oral arguments, one before their classmates and another before a panel of practicing attorneys. In addition, relying on a comprehensive trial court record, students draft an appellate brief in compliance with the actual rules of the court hearing the case.

The Law School curriculum also includes an Advanced Legal Writing course and an upper-division writing requirement.

Clinical Advocacy and Workshops

In addition to traditional law courses, the Law School offers a wide variety of clinical and workshop courses designed to acclimate students to the intellectual challenges of law.

For students who seek to learn litigation techniques in a simulation setting, many sections of Civil Trial Advocacy are offered. Small groups of students are given the opportunity to develop their trial skills under the supervision of full-time faculty members with substantial litigation experience and a part-time faculty consisting of outstanding members of the Detroit trial bar.

The gap between law school and practice must be bridged in areas of specialty which do not involve the courtroom. The workshops in Commercial Law (JDC 985), Personal Tax Planning through Estates and Trusts II (JDC 981), Bankruptcy Reorganizations (JDC 976) and Real Estate Financing Workshop (JDC 986) provide students the opportunity to apply the learning acquired in the classroom to simulated legal problems requiring planning, drafting of documents and negotiating.

Internships

Second and third-year students have the opportunity to participate in part-time internships for academic credit by serving as research clerks to justices of the Michigan Supreme Court, and judges of the United States Court of Appeals, United States District Courts, and both Wayne and Oakland County Circuit Courts. Students may also serve as research clerks in the City of Detroit Law Department, the Federal Defender's Office, the United States Attorney's Office, the Wayne County Prosecutor's Office, the Small Business Administration, the Equal Employment Opportunity Commission, and the Juvenile Defender Office. There are also internships available at the United States Claims Court and the Reporters' Committee for Freedom of the Press, both in Washington, D.C. With the approval of both the Dean and the faculty, students may also arrange for special public interest internship experience in Washington, D.C. and other cities. The internship programs provide a unique opportunity for students to gain practical experience while concurrently pursuing their classroom studies.

First Year Summer Institute

The Summer Institute program is designed to assist first-year students who are accepted for admission to the Law School for the fall semester but who may benefit from the opportunity to spread the first academic year of law study over an entire calendar year. For those students with lower entering credentials, participation in the summer program may be required.

Day students take two of the first-year required courses in the summer preceding the beginning of the regular academic year. If enrollment permits, there is also an evening program in which one first-year course is offered. Since credit is given for the successful completion of these courses, the program permits a lighter course load in the regular academic year. All Summer Institute participants also take a two-week non-credit orientation class—Introduction to Law Study. Attendance at the course is mandatory.

Enrollment in the Summer Institute is limited. Although admittees with lower admission factors will be given preference for admission to this program, all who apply will be considered.

Supportive Services

The Supportive Services Program, under the direction of an assistant dean, offers tutoring, counseling and other academic assistance to both day and evening law students.

Tutorial assistance is available to any student experiencing academic difficulty. Upperclass law students and practicing attorneys act as tutors for small groups of students. Each group meets weekly to discuss the cases and concepts that have been covered in classes during the preceding week. While emphasis is placed on class preparation and case analysis, the tutors also assist students with problems in case briefing, effective note-taking, organizing course materials (outlining) and techniques of exam writing. Practice exams are administered throughout the year in order to strengthen students' understanding of legal principles and acclimate students to the exam taking process.

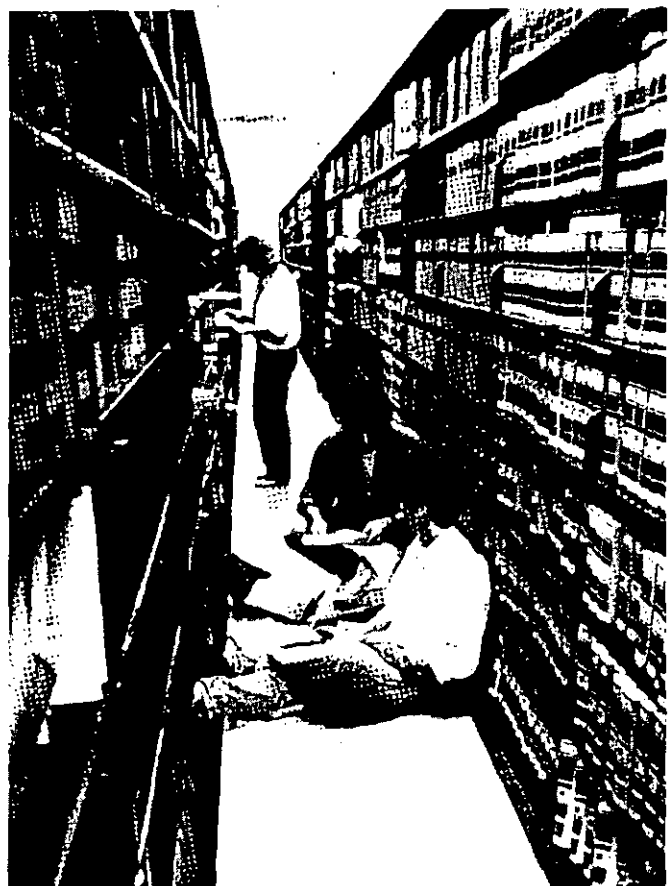
The Supportive Services Program also offers audiotaped lectures by nationally respected authorities in subject areas covered by the first-year courses. The lectures offer another perspective to assist students in organizing and understanding the course material. In addition, the Program maintains a resource library consisting of hornbooks and other supplementary materials.

Visiting Lectureships

Two gifts to the Law School have established distinguished visiting lectureships to enrich the educational program.

The *I. Goodman Cohen Lectureship in Trial Advocacy* was established by the family of the late I. Goodman Cohen, a distinguished Detroit trial lawyer and former President of the Michigan Trial Lawyers Association. The Cohen Lecturer spends two days at the Law School, working with students in Trial Practice classes, meeting with students and faculty in informal settings, and delivering a formal lecture on a topic related to trial advocacy. Lecturers in this series have included James B. McIlhany, Joseph Hostetler Professor of Trial Advocacy at Case-Western Reserve University Law School, Professor Faust Rossi of Cornell Law School, and Professor James Seckinger of Notre Dame Law School. This resource enables the School to bring to Detroit prominent judges, lawyers and law teachers with special interests in trial advocacy.

The *Honigman Fellows* program was established in 1982 by the Jason L. Honigman Foundation, to honor Mr. Honigman, a distinguished Detroit lawyer and friend of the Law School. Honigman Fellows are selected from among the country's most distinguished lawyers, judges and public officials to spend a week at Wayne State meeting with law students, faculty and alumni, and participating in Law School classes. Presence of the Honigman Fellows gives Wayne students a perspective on current problems of national policy and on the larger role of the legal profession in public affairs. The first Honigman Fellow was Professor Burke Marshall, of Yale Law School, who was Assistant Attorney General for civil rights during the administration of President John F. Kennedy. Other Fellows have included Washington lawyer Lloyd N. Cutler, Federal Judge Carl McGowan, and former Solicitor General Rex E. Lee.



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 corporation and finance. It requires as a prerequisite the J.D. degree or its equivalent. It is a part-time evening program designed primarily to meet the needs of practicing lawyers for advanced specialized training.

Admission Requirements consist of graduation from a law school which is accredited by the American Bar Association and is a member of the Association of American Law Schools. Consideration may be given to graduates from other common law countries upon the recommendation of the Director of the Program and the approval of the Law School Graduate Program Committee.

Application for Admission: Application forms may be obtained from the Wayne State University Office of Graduate Admissions, 5980 Cass Avenue, Detroit, Michigan 48202, or from the Graduate Division of the Law School, 468 West 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 not later than the preceding July 15, and for the winter semester not later than the preceding November 1. Applications, together with the application fee of \$20.00 (\$30.00 for foreign students) and transcripts, should be directed to: Office of Graduate Admissions, 5980 Cass Avenue—Room 102, Detroit, Michigan 48202.

Further information may be obtained from the Law School Graduate Office; telephone: (313) 577-3955.

DEGREE REQUIREMENTS: The following requirements for the LL.M. degree must be completed within six years from the date of matriculation:

1. Completion of twenty-four credits of course work with a grade of 'C' or better.
2. Completion of a substantial essay under the direction of an instructor with a grade of 'C' or better (for which the student receives an additional two semester credits).
3. A cumulative honor point average of 'B' for the twenty-six credits referred to above.

ACADEMIC PROCEDURES

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 13. The following additions and amendments pertain to the Law School.

FEES

Application Fee

A fee of \$20.00 (\$30.00 for foreign students) must accompany the application for admission. The fee is to defray, in part, the cost of processing the application and is not refundable.

Admission Deposit

An admission deposit of \$150.00 is required of each applicant admitted to a first-year program in the School. The purpose of this deposit is to reserve a place in the class for the entering student and will be applied against tuition if the applicant enrolls. The deposit is refundable only upon application prior to June 15.

Tuition and Fees

The fees cited below 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.

Resident	\$40.00 plus \$117.25 per credit
Non-Resident	\$40.00 plus \$256.75 per credit

NOTE: Full-time first-year day students carry fourteen credits in the fall semester and sixteen credits in the winter semester; thereafter, they must average fourteen credits per semester to complete the eighty-six credits required for graduation.

Law students who elect courses outside of the J.D. program will be charged at the University graduate student tuition rate (see page 16).

A deposit of at least \$40.00 is required when registering during the scheduled registration period.

Tuition is due by approximately the end of the first week of classes.

A \$25.00 Late Payment Fee will be charged if tuition and fees are not paid in full by the end of approximately the first week of classes.

An additional \$25.00 Late Payment Fee will be charged if tuition and fees are not paid in full by approximately the eighth week of classes.

By the end of the first week of classes, financial aid recipients must pay any difference between their awards and their assessment in order to avoid late payment fees, penalties and holds.

Late Registration during the first week of classes: students must pay \$294.00 before registering (which includes a \$40.00 non-refundable Registration Fee and \$30.00 Late Registration Fee).

Late Registration during the second week of classes: students must pay tuition in full (including the Registration and Late Registration Fees) prior to registering.

Wayne State University, in cooperation with Academic Management Services (AMS), offers an alternative payment plan which allows students to spread the cost of tuition over a period of months without borrowing money or paying interest charges. Participation in the plan

is on an annual basis. For further information, please consult the Accounts Receivable Office, 214 Administrative Services Building, or call the Office at (313) 577-3653. You may also call AMS toll-free at (800) 556-6684.

A 'HOLD' will be placed on the records of any student who does not make required payments on time. While it is in effect, the student may not register for a subsequent term, a diploma will not be issued, nor will a transcript or other information be released. Removal of the 'HOLD' will be expedited if the student asks for a release when paying the balance and takes the release to the Registration Office or the Records Office, depending on the service desired. A 'HOLD' will disqualify students from participating in the deferred payment plan.

Students are responsible for insuring that the University has their correct mailing address; failure to make a payment because of not receiving a statement will not excuse the student from any warranted penalties. Checks or money orders should be made payable to Wayne State University. Checks are also accepted subject to collection. MASTERCARD and VISA cards are accepted.

Cancellation of Fee Charges

If a student notifies the Registration Office in writing of his/her withdrawal or of a reduction in program, he/she shall be entitled to a cancellation of the fees applicable to the portion of the program which has been dropped, in accordance with the schedule printed below.

Students who drop courses after the 100% cancellation period will be assessed for the dropped course(s) according to the cancellation schedule (see below). Cancellations are computed on the basis of tuition assessed. The \$40.00 REGISTRATION FEE (included in the assessment) is non-refundable and not subject to cancellation. For students who have been required to pay the \$50.00 deposit, the amount of refund will be 100% less \$50.00. The amount cancelled will be credited to the student's account. If this results in an overpayment, a check will be mailed to the student. If the credited funds are not sufficient to cover the outstanding balance, the student is responsible for the remainder and must pay in accordance with the Fee Payment Policy to avoid late payment fees.

Financial aid recipients should contact the Office of Scholarships and Financial Aids immediately upon official withdrawal to determine the effect of the withdrawal upon their financial aid.

Mailed notices bearing a postal cancellation of Saturday or Sunday are accepted as of the preceding Friday.

<i>CANCELLATION SCHEDULE</i>	<i>Refund</i>
For classes meeting 9-15 weeks	
Withdrawal before or during the first two weeks of classes	100%
Thereafter	0%
For classes meeting 4-8 weeks	
Withdrawal before or during the first week of classes	100%
Thereafter	0%
For classes meeting less than 4 weeks	
Withdrawal on or before the first day of class	100%
Thereafter	0%

Student Residency

The non-resident fee is assessed all students who have not made their legal domicile (see page 17) in the State of Michigan for at least six consecutive months immediately prior to the first day of classes in the semester for which they register. Time spent in Michigan prior to a student does not count toward these six months.

If students enroll in undergraduate school for more than eight credits or graduate school for more than six credits, or in law school for more than eight credits in any one full-length semester, it is not presumed that their sojourn is for the purpose of attending school and they are not to establish domicile.

The age of majority is eighteen years. Minors do not have the right to establish their own domicile but derive it from their parents. In certain cases, from a guardian.

An alien who has been lawfully admitted to the United States and has obtained either an immigrant visa or refugee visa may establish residency for the purpose of paying fees at Wayne State University under the same conditions as may a United States citizen who has moved to Michigan from another state.

A detailed statement of the University residency policy may be obtained at the Registration Office, 156 Administrative Services Building.

Students who have been classified as non-resident must file an application for a change of classification in the Registration Office if they feel that the classification is in error. The application and required supporting documents must be submitted before the last day of classes of the semester for which they hope to be reclassified.

The University reserves the right to correct errors in the student classification at any time.

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. Copies of academic regulations are available in the Law School Records Office.

Application For Degree

Students who anticipate graduating in June 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.

Graduation Fee

In fall 1983 the University Board of Governors instituted a graduation fee. The fee applies to all graduates. This fee may be paid in person or by mail to the Law School Records Office. Payment must be by check or money order only; NO CASH WILL BE ACCEPTED.

Student Rights and Responsibilities

In 1986, the Board of Governors approved the Student Due Process Statute. Copies are available in the Law School records office.

Release of Student Records

The University recognizes admissions and academic records of students as being privileged and has a policy designed to insure that this information is not improperly divulged without the consent of the student. Copies of the policy are available from the registrar. The University reserves the right to provide academic information to other schools and colleges when it is to be used for curriculum evaluation purposes. In such instances, the University requires assurance that the names of any students whose records are involved will be held in confidence.

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.

The Bar examination consists of two parts: the multi-state examination composed of objective questions; and an essay part prepared by the Michigan Board of Law Examiners. Information regarding the Michigan Bar examination can be obtained by writing the State Board of Law Examiners, 306 Townsend Street, Lansing MI 48933.

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.



FINANCIAL AID, SCHOLARSHIPS AND AWARDS

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. (Generally, LL.M. candidates will not qualify for financial aid because of their employment income.) 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 types of aid cited below.

Financial Aid Form (FAF) Application: *Students may apply for Board of Governors Grants-in-Aid, National Direct Student Loans and College Work-Study by filing a Financial Aid Form (FAF) which is available from the Law School Financial Aids Officer, 317 Law Library. The FAF must be received in the Law School Financial Aids Office by April 1. Students who, according to federal guidelines, are independent of their parents must also submit to the Law School a copy of their most recent federal income tax forms. Students who, according to federal guidelines, are dependent on their parent's support must submit a copy of their parent's most recent federal income tax forms along with their own. Copies of W-2s and all supplemental forms filed must be submitted.*

Board of Governors Grants-in-Aid — This assistance covers tuition costs and is available to U.S. citizens or permanent U.S. residents and is extended solely on the basis of financial need. Students must be full-time (ten credits per term in Fall and Winter terms). Students in the eight credit-per-term first-year evening program are not eligible for Board of Governors Grants. For application, see above.

National Direct Student Loan (NDSL) — Law students who are U.S. citizens or permanent U.S. residents may apply for the federally-sponsored National Direct Student Loan. Law students may borrow up to \$2500 per year with repayment at five per cent simple interest beginning six months after the student is no longer pursuing his/her education on at least a half-time basis. The maximum amount a graduate student may borrow, including all loans secured at the graduate level (masters, doctorate, law), is \$6,000. Students who demonstrate sufficient need may receive the NDSL Loan in addition to Board of Governors grants-in-aid or college work-study. For application, see above.

College Work-Study — Law students who are United States citizens or permanent U.S. residents may be employed under the Federal College Work-Study Program. A variety of jobs are available through the University work-study placement program. These include jobs at the Free Legal Aid Clinic. A law student in this program may earn up to \$3,540 per year depending upon the pay rate and number of hours worked. First-year law students are *not* eligible for work-study. For application, see above.

Guaranteed Student Loan Program (GSL) — These loans are made by participating lenders (banks, credit unions, savings and loan associations). Students may borrow up to \$5,000 per year, depending on need. Students are not automatically eligible for the GSL; qualification is determined by the Needs Test Form and/or the

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Financial Aid Form (FAF). Residents of states other than Michigan should apply to a lender in their home state. *Applications must be obtained from the lender. Supplemental forms, usually available after May 1, must be obtained from the Law School Financial Aids Office, 317 Law Library. The completed loan application forms must be submitted together to the Law School Financial Aids Office.*

NOTE: Federal regulations stipulate that applicants for a Guaranteed Student Loan must provide the Law School Financial Aids Office with a Financial Aid Transcript from EACH post-secondary institution attended, *whether or not financial aid was received from the institution(s).*

Michigan Direct Student Loan Program (MDSL) — The Michigan Direct Student Loan program is available to students who have been unsuccessful in obtaining a Guaranteed Student Loan through a bank, credit union, or savings and loan association. Full-time students can borrow up to a maximum of \$5,000 each year. *Students are not automatically eligible for the MDSL; qualification is determined by the Needs Test Form and/or the Financial Aid Form (FAF) (see above).* The maximum aggregate amount a law student may borrow, including all GSLs and/or MDSLs secured at the graduate level (master's, doctorate, law) is \$25,000. The applicant must be a resident of the State of Michigan. Residents of states other than Michigan should contact their state department of education. *To apply for the Michigan Direct Student Loan, the student should obtain the MDSL application form from the Law School Financial Aids Office, 317 Law Library, and obtain a letter from a lender certifying an unsuccessful attempt to secure a Guaranteed Student Loan (GSL).* Federal regulations stipulate that applicants for a Michigan Direct Student Loan must provide the Law School Financial Aids Office with a Financial Aid Transcript from EACH post-secondary institution attended, *whether or not financial aid was received from the institution(s).*

Auxiliary Loans to Assist Students (ALAS) — This loan is intended as a supplement to the Guaranteed Student Loan Program. The borrower's credit is of major importance in securing a loan, and not all banks that participate in the GSL program make ALAS loans. Repayment of the *interest* on an ALAS loan must begin no later than sixty days after disbursement of the loan proceeds. The annual simple interest varies with the Treasury Bill rate and is in the range of twelve to fourteen per cent. Applications for ALAS loans must be initiated at the bank, credit union, or savings and loan associations. Supplemental forms, usually available after May 1, must be obtained from the Law School Financial Aids Office, 317 Law Library. The completed loan application and completed supplemental forms must be submitted together to the Law School Financial Aids Office. Full-time students may borrow up to a maximum of \$3,000 each year.

Special Loans and Grants

The Law School administers or cooperates to provide information on several special funds which provide grants or loans to law students.

Law Alumni Scholarships — The generous contributions of the alumni and friends of the Law School have provided funds which are used to support law students in financial need. A small portion of these contributions are used to provide stipends for superior members of the entering class pursuing full-time study and superior members of the second-year class, based upon their first-year performance. Three scholarships were donated by area law firms — Miller, Canfield, Paddock & Stone; Butzel, Long, Gust, Klein & Van Zile; Bodman, Longley & Dahling. Other scholarships, designated Law Alumni Scholarships, are made possible by gifts to the Alumni Fund.

Ruth and Mitchell Bacow Scholarship Fund — This fund was established by Ruth and Mitchell Bacow, Class of 1941. The fund provides scholarships or loans for students with financial need.

Alexander Freeman Fund — Funds for this scholarship were provided by the late Mr. and Mrs. Alexander Freeman in recognition of their important contributions made in the field of international and comparative law by Dr. Alwyn Freeman. A scholarship is awarded annually to a student who expects to pursue a career in international specializations.

Law School Minority Students Fund — Funds are provided by Howard E. Bledsoe Black Law Student Scholarship Fund and other Detroit area law firms and other contributors interested in financing the law school education of minority students.

Law School Emergency 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 Loan Fund, the Joseph S. Radom Loan Fund, the Michael Loan Fund, the William D. Traitel Loan Fund, and the Ernest Wunch Student Loan Fund. *Applications for loans from any of these funds are available from the Law School Assistant Dean for Student Affairs.*

Law students are not under any obligation to repay scholarship awards. However, it is expected that after graduation students will contribute to the Alumni Fund to insure the continuation and success of the Law School financial aid program.

Scholarships, Awards and Prizes

The following scholarships, awards and prizes are determined on the basis of service to the Law School, written essay competitions, academic achievement. In some cases, financial need is also considered. Most of these scholarships, awards and prizes are presented at the Law School Honors Convocation held each fall.

Idu and Benjamin Alpert Foundation Scholarships — Resident Michigan who have applied to and have been accepted for admission to a law school, or are presently enrolled in law school, may apply for these scholarships. Winners are determined by an essay competition. Application should be made before June 15, through Judge Frank Szymanski, 1215 City-County Building, Detroit, Michigan. Applications are also available at the Wayne State University Law School, Office of the Assistant Dean for Student Affairs.

American Jurisprudence Awards — An American Jurisprudence certificate and special credit voucher is awarded by the Law Co-operative Publishing Company and Bancroft-Whitney Company to the students who earn the highest grades in certain courses.

Donald E. Barris Prizes — Awarded to the two students selected to represent Wayne State University Law School at regional and national trial advocacy competitions. Donated by the firm of Barris, Denn and Driker in honor of Mr. Barris, Class of 1940.

Bodman-Longley Scholarship — This scholarship established by the firm of Bodman, Longley and Dahling is awarded to the outstanding minority student entering the senior year who needs financial assistance.

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.

Certificate Awards — Certificates are awarded to student leaders of the Free Legal Aid Clinic, *Wayne Law Review*, Moot Court and Student Board of Governors for their service to the Law School. Certificates are also awarded to the participants of the annual Client Council Competition and to the students who write the best briefs for each year legal writing instructor and in Advanced Legal Writing.

Corpus Juris Secundum Awards — The American Law Book Company awards a selected title of *Corpus Juris Secundum* to a student in each class of the day and evening divisions for superior academic achievement.

Frances and Charles Driker Scholarships — In recognition of the many contributions of Eugene Driker, Class of 1961, to the Law School, this fund was established in honor of Mr. Driker's parents by Michael Timmis, Class of 1965. The scholarships are given each year to one day and one evening Wayne State University Law School student with the highest academic average at the end of the first year of law studies.

Evans and Luptak Business Planning Award — This award is made annually to the student who receives the highest grade in JDC 725, A Transactional Approach to Business Planning.

Gladys Freid Scholarship — This scholarship established by Bernard Freid, Esq., in honor of his mother, is awarded to a first-year student showing academic promise and need.

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, financial need, qualities of character and leadership and an interest in criminal law.

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, of the Class of 1975, is given to the best oralist in the Moot Court Law Day Competition.

Richard B. Gushee Writing Award — This award, established by David D. Joswick, Class of 1969, in honor of Richard Gushee, Esq., 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 Jason L. Honigman, Esq., is awarded to the Editor-in-Chief of the *Wayne Law Review*.

Hornbook Awards — The West Publishing Company awards a selected title from the Hornbook series to the student in each class who achieves the highest scholastic average.

Jaffe, Snider, Raitt and Heuer Scholarship — This scholarship, established by the law firm of Jaffe, Snider, Raitt and Heuer, is awarded to an executive board editor of the *Wayne Law Review*.

Harry B. Keidan Memorial Award — An annual award in memory of Harry B. Keidan is given for academic achievement and need.

Kerr, Russell and Weber Scholarship — This scholarship, established by the law firm of Kerr, Russell and Weber, is awarded to an executive board editor of the *Wayne Law Review*.

Arthur F. Lederle Scholarships — These scholarships, which were established by family and friends of the late United States District Court Judge Arthur F. Lederle, are awarded to first-year students with need and potential for superior academic work.

Judge John R. Murphy Award — This award is made by the faculty in memory of Judge Murphy, who was an alumnus (Class of 1962) and adjunct professor at the Law School and the youngest jurist ever to serve as Executive Judge of Detroit Recorder's Court. The award is made annually to the student whose seminar paper exhibits the highest quality of legal scholarship.

Pepper, Hamilton and Scheetz Scholarship — This scholarship, established by the law firm of Pepper, Hamilton and Scheetz, is awarded to an executive board editor of the *Wayne Law Review*.

Edward H. Rakow Memorial Award — This award, established in memory of Edward H. Rakow by the Federal Bar Foundation of Detroit to promote interest in securities regulation, is made each year to a junior or senior law student on the basis of scholarly achievement in corporate and securities subjects.

Renfrew Prize in Legal History — Established by James Renfrew, Class of 1950, this annual award is made to the student who writes the best original essay of publishable quality dealing with American, English or Continental legal history.

Scholarship Key Certificates — Gold, silver and bronze key certificates are awarded to students who have demonstrated outstanding academic achievement.

Boaz Siegel Award — This fund was established by Boaz Siegel, Class of 1941 and Professor Emeritus of the Law School. An annual award is made to the law student who writes the best publishable article in the field of pension, health and welfare, or labor law.

Max Smitt Scholarship — Established by Helene Warren in memory of her brother, Max Smitt, a distinguished member of the State Bar, the scholarship is awarded based on academic performance and need.

The Ira J. Spoon Scholarship and Award Fund — Ira J. Spoon, J.D., Class of 1945, engaged in extensive real estate development in Michigan and southern California. The Scholarship is presented annually to the student who has excelled in real property studies; the Award is presented annually to the student who has authored a paper on real property or urban development and whose paper is deemed worthy of publication.

State Bar of Michigan — Negligence Law Section Prize — An annual prize is awarded for the best paper in the area of tort law.

Touche Ross and Company Award — This annual award is made to the student writing the best seminar paper in the area of taxation.

William D. Traitel Scholarships — These scholarships are designated by Mr. Traitel for students who have demonstrated superior academic achievement.

United States Law Week Award — A year's complimentary subscription to *Law Week* is given to the graduating law student who has made the most satisfactory scholastic 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.

STUDENT SERVICES

Health

Insurance covering short-term hospitalization, emergency care and home care expenses is offered to Wayne State University students and their families through GM Underwriters, Inc. Information and applications for this policy will be available at registration time.

The University does not offer health care to its students. In case of illness on campus, students are advised to go to the Receiving Hospital Emergency Room located in the Medical Center.

Housing

On-Campus Housing: The University Housing Office manages several apartment buildings, some of which are exclusively for graduate and professional students, faculty and staff.

Faville Hall: A dormitory in the sense that all apartments are double occupancy with roommates assigned, and are completely furnished with the exception of linen. This facility is open to graduate and professional students only.

Helen Derooy Apartments: A modern high rise offering furnished and unfurnished efficiency, one- and two-bedroom apartments. Children are welcome. There is a playground and child care center. Handicapped units are available. Graduate and professional students, faculty and staff.

Forest Apartments: Another modern building with furnished and unfurnished efficiency and one-bedroom apartments. Children are welcome and handicapped units are available.

Chatsworth Towers: An older, elegant building with unfurnished efficiency, one- and two-bedroom apartments; twenty-four hour switchboard and reception desk; underground garage. Professional students, faculty and staff.

Chatsworth Annex: Unfurnished two-bedroom apartments, some with large front porches. Children welcome.

Santa Fe and Sherbrooke Apartments: Old, well-maintained buildings with efficiency and one-bedroom unfurnished apartments.

Although bus service is convenient and students may find that a car is not necessary, outdoor parking is available for a fee near all of these buildings. Pets are not allowed in any of the campus buildings. For an illustrated brochure, price list and application, please call or write the Housing Office, 700 Merrick, Detroit 48202, (313) 577-2116.

Off-Campus Housing: The neighborhood offers a wide range of housing of all prices and degrees of comfort. The Law School Admissions Office maintains a bulletin board and a list of students who are looking for roommates.

LAW SCHOOL ACTIVITIES

Black Legal Alliance

The Black Legal Alliance, a chapter member of the national Black Student Association, was the first minority student organization at the Law School. The Black Legal Alliance focuses its activities on the unique needs and interests of the black law student. Since its inception as the Wolverine Law Student Association in the mid-1960s, the Alliance has sponsored speakers, workshops and community events designed to promote academic excellence, professional competence and cultural awareness. Commitment to the needs of the black community is a basic tenant of the organization.

Black Legal Alliance programs allow students to obtain useful information, gain practical experience and establish valuable relationships with local jurists and practicing attorneys. Members also have access to numerous resource materials in the Black Legal Alliance office which is located in the basement of the Law Library building. The Alliance places special emphasis on the active recruitment of minority applicants.

Client Counseling

The Client Counseling Competition, sponsored by the Law School Division of the American Bar Association, involves the simulation of law firm consultation with a client. Teams composed of two students each compete in preparing a pre-interview strategy memorandum, interviewing a client to elicit information needed to handle the problem presented, and then prepare a post-interview memorandum. The best team intramurally chosen by an outside panel of practitioners goes on to participate in a regional competition, the winners of which compete in a national competition. Monetary prizes are awarded to the winners of the regional and national competitions. Law School certificates of merit are also awarded to student participants.

Delta Theta Phi Law Fraternity

Delta Theta Phi is the oldest of the professional law fraternities. The C. B. Warren Senate offers its members excellent contacts with members of the bench and bar, as well as strong support from alumni and national fraternity. The fraternity sponsors both social activities and meetings featuring speakers on legal and professional topics. Scholarship funds are available to members who qualify.

Free Legal Aid Clinic

The Free Legal Aid Clinic (F.L.A.C.) is a student-operated corporation designed with the dual purpose of serving the Detroit community and providing practical legal experience to Wayne State University law students. This popular clinic allows law students who have completed their first year to obtain well-rounded experience in handling civil cases under the guidance of a supervising attorney. The student attorney handles the entire case including all court appearances and interactions with both the client and opposing counsel. A past alumnus of the F.L.A.C. is well versed in the operation of the justice system, especially Wayne County Circuit Court, one of the busiest courts in the nation. Dedicated Clinic members are afforded the opportunity to serve on the Clinic's Board of Directors, the student group solely responsible for the efficient operation of the law office. The Clinic is available to students year round on either credit or non-credit work-study programs.

Gay/Lesbian Law Caucus

The Gay/Lesbian Law Caucus is dedicated to enhancing the law school experience for the gay community at Wayne State University. Social activities provide peer support to help students cope with the challenges of law school life. Educational programming is aimed at improving gay self-awareness and eliminating popular misconceptions among non-gays. Activist-oriented gays and lesbians work in and out of the Caucus to advance gay community causes. The Caucus respects the needs of its members in varying stages of openness about their affectional preferences, and holds its meetings off-campus.

Hispanic Law Student Association

This association was founded in 1971 by Hispanic law students who were deeply concerned about the under-representation of Hispanics in the Law School as well as in the legal profession. Its activities have stressed interaction between the law student and the Latin American Bar Activities Section of the State Bar of Michigan. In an effort to increase the admission and graduation of Hispanic law students, the association represented the Law School at the annual Minorities and the Law Conference sponsored by the Puerto Rican Legal Defense League in New York City in 1986.

International Law Society

The International Law Society is designed to promote greater understanding of and encourage interest in the role of international law in business and international relations. The organization has invited scholars to speak on current events in international law and business.

Jewish Law Students Association

The Jewish Law Students Association is designed to improve the quality of Jewish life both here and abroad, facilitate communication between Jewish groups on this and other law school campuses, and sponsor lectures, seminars and various social activities. The Jewish Law Students Association is an affiliate of the National Jewish Law Students Network.

Michigan Trial Lawyers Association

Michigan Trial Lawyers Association (MTLA) is the Michigan affiliate of the Association of Trial Lawyers of America (ATLA) in Washington, D. C. The Association is dedicated to improving the chances of the individual citizen seeking fair compensation for injury while encouraging mutual support and cooperation among future members of the bar. All students are invited to join. Membership in the Association entitles students to many national and local publications and legal education seminars on recent developments in the law. It also allows members to meet and interact with many of Michigan's finest trial attorneys.

Moot Court Program

The Wayne State University Moot Court Program, which is highly respected in the legal community, introduces students to the art of appellate advocacy. Members are selected from second- and third-year students in good standing. Under the direction of the Moot Court Board, teams of two second-year students prepare legal briefs and present oral arguments addressing issues of current legal significance in the context of hypothetical appellate litigation. The top two teams in the fall term are selected to present arguments at the Neef Competition before a panel of judges from the Sixth Circuit Court of Appeals and Federal District Court. The top two teams in

the spring term present arguments at the annual Law Day celebration before a panel of Michigan Supreme Court justices.

Other participants are selected to represent the Law School in interscholastic competitions throughout the United States. The National Moot Court Team, composed of six seniors, represents the Law School in regional and national competition. In addition to the national team, other Moot Court teams have distinguished themselves in recent years, winning the Niagara Moot Court Competitions in 1981, 1983, and 1986. Teams were also regional winners in the prestigious Jessup International Law Competition in 1983, 1984, and 1986 and represented the Law School in final arguments in Washington, D. C. In 1985, a Wayne State Law School team won the Dayton Administrative Law Competition.

Beyond the practical experience students gain by participation in Moot Court, the program also entitles them to numerous honors. The Order of Barristers is a national honorary organization whose purpose is the encouragement of oral advocacy and briefwriting skills through effective law school appellate moot court programs. The Order also serves to recognize, on a national basis, those individual law students who have excelled in moot court activities in their respective law schools.

Activities of the Moot Court are supported by the Benjamin D. Burdick Moot Court Fund, donated by the family of Judge Burdick, a member of the first graduating class of Wayne State University Law School, member of the Wayne State Board of Governors from 1959 to 1963, and prominent Detroit lawyer and judge.

National Lawyers Guild

This association is dedicated to the need for basic change in the structure of our political and economic system, with its primary aim directed toward bringing together all those who look upon the law as an instrument for the protection of people, rather than for their repression. The members share skills, research and experience by means of meetings, local and national projects, and workshops. The national convention of the organization, hosted by the Detroit area chapters, was held at Wayne State University in 1981.

Phi Alpha Delta Law Fraternity

Phi Alpha Delta, an international fraternity, is the largest legal fraternity in the United States. It provides an opportunity for students to meet and discuss legal topics with members who are practicing attorneys. In past years, the organization has sponsored a speakers program, inviting outside member-practitioners to speak at the School.

State Bar of Michigan Law Student Section

The State Bar of Michigan Law Student Section is open to all Michigan law students. The membership fee is nominal. Included with membership is a subscription to the State Bar Journal, the Law Student Section Newsletter, the annual State Bar Directory, and the opportunity to attend programs and seminars sponsored by the Law Student Section, including the annual meeting of the State Bar. Three students from each of the five Michigan law schools are elected annually to serve on the Law Student Section Governing Council.

Student Board of Governors

The Student Board of Governors (S.B.G.) is composed of elected representatives from each division of the day and evening class plus an Executive Board elected by the student body as a whole. The S.B.G. works actively to serve the needs and protect the rights of the student

body. The president of the Student Board acts as the liaison between students and the faculty and administration of both the Law School and the University.

The Student Board appoints student representatives to serve on faculty committees, conducts a faculty evaluation of every class each semester, holds a used book sale at the beginning of each semester, and organizes several student-faculty social activities throughout the school year.

The S.B.G. Office is located in the basement of the Law Library building. Meetings are held every other week and students are encouraged to voice their opinions and suggestions, either in person or through their elected representatives.

Tau Epsilon Rho Law Fraternity

Tau Epsilon Rho is an international professional law fraternity with an open membership policy. The fraternity enhances the law student experience through social activities and provides valuable contacts with judges and practitioners through activities with the sponsoring graduate chapters.

Wayne Environmental Law Society

The Wayne Environmental Law Society affords law students an excellent opportunity to integrate their academic training with practical experience. Members have been active in Detroit's historic preservation efforts; have lobbied for acceptable Clean Air Act amendments; testified before legislative committees and assisted in drafting legislation for the protection of Michigan's forests and petroleum resources. The Society sponsors speakers and films, subscribes to various environmental publications, and offers students an opportunity to exchange ideas with other students, faculty, environmental groups and environmental professionals. This Society has been very successful in assisting active members in obtaining jobs in environmental law.

The Wayne Law Review

The *Wayne Law Review*, the Law School's official scholarly journal, publishes four issues annually. Three issues contain articles on selected topics by leading jurists, professors, attorneys, and law students. The other issue, the annual Survey of Michigan Law, reviews recent developments in selected areas of state law. The primary purpose of the *Review* is to provide a quality publication for the legal community, and it has gained extensive recognition in recent years, particularly for its annual survey issue. In addition, the *Review* offers students an excellent opportunity to perfect research, writing and technical skills and membership often leads to expanded employment opportunities covering a wide range of legal skills and interests. The *Review* is operated exclusively by students, with minimal advice from the faculty advisers. The *Review* is managed by a Senior Editorial Board. The staff is composed of associate editors, who have completed one year of writing for the *Review*, and assistant editors, in their second or third year of day school or third or fourth year of night school, who have been chosen for membership on the basis of academic performance and writing ability.

Women's Law Caucus

The central concern of the Women's Law Caucus is with the rights and status of women in society and in the legal profession. The Caucus works with the Woman's Justice Center, the Women Lawyers Association of Michigan and other women's organizations to provide legal services and resources to the local community and the University. The organization has taken an active role in planning regional

conferences on women and the law and was one of the sponsors of the National Conference held in Detroit in 1982.

Activities Related to the Law School

Institute of Continuing Legal Education: The Institute of Continuing Legal Education is a joint organization sponsored by Wayne State University Law School, the University of Michigan Law School and the State Bar of Michigan. It provides continuing educational services to the Michigan bench and bar. This institute, one of the most successful in the country, administers a program designed to facilitate the transition from law school to active practice, to improve the general professional competence of Michigan lawyers and to provide advanced specialty courses where needed.

Comparative Criminal Law Project: The Law School sponsors a multi-volume publishing venture in the field of comparative criminal law. The Comparative Criminal Law Project publishes the American Series of Foreign Penal Codes in English translation, which currently consists of twenty-eight volumes. The Project also sponsors a Monograph and Publications series which include another twenty-five titles. Professor Edward M. Wise is Director of the Project and editor-in-chief of the American Series of Foreign Penal Code, Monograph and Publications series.

Law Alumni Association: The Law Alumni Association is a constituent organization of the Wayne State University Alumni Association made up solely of Law School graduates. Thirty-six of the Law School's outstanding and professionally-active alumni are elected to serve as the executive committee and officers who govern the Association. The group advises the Dean on matters of long-term interest to the Law School, provides the administration with perspectives from the profession, and sponsors programs and workshops for its members. Law Alumni come together for a number of events each year, including professional meetings, receptions with faculty, and reunions. In addition, law alumni provide special assistance in the areas of job placement, 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 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, student financial scholarships, and administrative services to students and student organizations. In addition to Law School graduates, major contributions are received from area law firms, corporations, and other individuals. For the past few years, the annual fund has raised donations of well over \$200,000. As state support diminishes in proportion to need, reliance on private support will increase as a critical aspect of maintaining the Law School as a superior academic institution.

The Wayne Lawyer: All alumni and students receive copies of *The Wayne Lawyer*, the official magazine of the Law School. Published twice each year, it provides information as to Law School activities, alumni accomplishments, a regular message from the Dean and articles of current interest written by members of the faculty.

FACULTY

Administration

Dean: John W. Reed
Associate Dean: Edward M. Wise
Assistant Dean: Sharon M. Brown
Assistant Dean: Sarah D. Lile
Director, Graduate Program: Donald H. Gordon
Director of Placement: Virginia H. Loveland
Director of Development: Pamela P. Acheson
Director of Admissions: Mary Mahr
College Recorder: Elizabeth Van Goethem
Director, Law Library: Georgia M. Clark
Financial Aids 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, Kenneth R. Callahan, Robert S. Childs (Emeritus), John F. Dolan, Joshua Dressler, Jane M. Friedman, John E. Glavin (Emeritus), Donald H. Gordon, Joseph D. Grano, Gunther Handl, Otto J. Hetzel, Maurice B. Kelman, LeRoy L. Lamborn, Geoffrey J. Lanning, Edward J. Littlejohn, Arthur J. Lombard, 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

William H. Burnham, Stephen Calkins, Janet E. Findlater, Kathryn R. Heidt

Assistant Professors

Margo R. Lesser, Lawrence C. Mann, Vincent A. Wellman

Instructors

Barbara A. Blumenfeld, Marilyn Finkelman, Sandra Gross, Lionel J. Postic, Diana V. Pratt

Adjunct Faculty

Anthony Adams, James C. Barnes, Victor J. Baum, Stanley B. Bernstein, Stanley Bies, David W. Christensen, The Honorable Averil L. Cohn, John J. Collins, Roger Cook, Marcia G. Cooke, Janet C. Cooper, Clark D. Cunningham, William H. Dance, Emmett E. Eagan, Sr., John Eggersten, Beth A. Eisler, Jane Forbes, Sheryl A. Giddings, Robert E. Gilbert, The Honorable Marc L. Goldman, Bernard Gottfried, John J. Grant, Anne H. Hiemstra, Ronald R. Helveston, George Hogg, Jr., Wolfgang Hoppe, Marry D. Hunters, William S. Hurst, Donald R. Jolliffe, David D. Joswick, Bruce T. Leitman, Nathan Lipson, Elliot D. Luby, George Mager, Michele C. Mayes, Jeffrey H. Miro, Peter A. Nathan, Steven Novinson, Loren Opper, Stephen G. Palms, Alison-L. Paton, Antoinette R. Raheem, Louis P. Rochkind, Erwin A. Rubenstein, John R. Runyan, Douglas A. Sargent, Lawrence F. Schiller, Sherill A. Siebert, John W. Simpson, Jr., Shlomo Sperka, Peter Sugar, Richard T. Tarnas, Pamela J. Thompson, Steven Uzelac, Alan R. Waterstone, Roger G. Will

Law School Directory

Admissions

J.D. Program 231 Law Library; 577-3937
LL.M. Program 395 Law Library; 577-3955
Cashier's Office 158 Administrative Services Building; 577-3650
Financial Aids 317 Law Library; 577-5142
Handicapped Student Services 450 Mackenzie Hall; 577-3398
Housing Office 700 Merrick; 577-2116
International Student Services 470 Mackenzie Hall; 577-3422
Military and Veterans' Affairs 5743 Woodward; 577-3374
Records and Registration, Law School 311 Law Library; 577-3931
Residency 156 Administrative Services Building; 577-3541
Supportive Services 195 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.



COURSES OF INSTRUCTION¹

A schedule of courses and instructors for each academic year will be issued by the Law School prior to registration time; the schedule lists the days and hours at which classes meet. 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.

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 of 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; particular attention to the nature of judicial review in constitutional cases and to the role of the judiciary in umpiring the federal government. (Y)

680. Professional Responsibility and the Legal Profession

Conflicts of interest; the attorney's standard of care, fiduciary duties, the organization of bar associations, the attorney's duty to the client and the community; the attorney's responsibilities in trial and negotiation, unilateral actions and negotiations. The duty of disclosure of conflicts of interest, the development of group legal services, and of legal services for the poor, and the responsibility of the Bar in these areas.

Elective Courses

704. Administrative Law. Cr. 3 or 4

Prereq: JDC 670. Powers and procedures of administrative agencies in the United States; methods of review and jurisdiction of the courts over administrative action.

707. Admiralty Law. Cr. 2

Admiralty jurisdiction; personal injury and death; charter parties; bills of lading; collision and limitation of liability.

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 partnership form under the Uniform Partnership Act.

713. American Legal History. Cr. 2

Interplay between the legal system and society at large; the American Revolution and the framing of the Constitution; the law's role in economic development; race relations; judicial activism vs. judicial restraint; development of civil liberties; legal status of women; violence and the law.

716. Antitrust. Cr. 2 or 4

Government control of trade practices and industrial market structures which inhibit the competitive process; monopoly, oligopoly, merger, cartel practices, distribution arrangements, resale price controls, franchising, patent licensing, foreign commerce and export controls; discrimination under the Sherman, Clayton, Federal Trade Commission, and Robinson-Patman Acts.

719. Appellate Advocacy. Cr. 2

Prereq: JDC 610, 630, 640, 620. Appellate procedure, skills of oral writing and oral advocacy, use of literature and law reviews, structure of appellate courts, the functioning of intermediate and final appellate tribunals; examination of the work of leading appellate judges and judicial techniques for handling case and statutory authority.

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 term courses. Organizational problems for the closely-held and the public corporation; operational problems such as stock distribution, issuance of new securities, constructive dividend problems, and stock redemptions; corporate acquisitions, other reorganizations, control take-overs, and liquidation and termination problems.

728. Business Planning and Taxation of Corporations and Shareholders.

¹ See page 461 for interpretation of numbering system, signs, and abbreviations.

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. Civil Trial Advocacy. Cr. 3

Prereq: JDC 782 or consent of instructor. Not open to students who have taken JDC 970. Theoretical and practical study: interviewing, investigation, argument, and examination of witnesses, developed through discussion, videotaped role-playing, and critique; each student tries two simulated cases. (Y)

737. Commercial Transactions. Cr. 4

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)

743. Complex Commercial and Consumer Litigation. Cr. 2

Pretrial stages of the litigation process and assembly of proofs. Class action, trial strategy, Panel on Multi-District Litigation, and selected evidentiary problems. (Y)

744. Complex Litigation. Cr. 2

Special procedural problems associated with complex litigation. Topics include: joinder, avoidance of duplicative litigation, class actions, judicial control of litigation. (W)

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. 2

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

Prereq: JDC 737. Problems arising when debtors are in financial difficulty, including the principal remedies of unsecured creditors such as attachment, garnishment, and enforcement of judgments; alternatives to bankruptcy; bankruptcy proceedings. (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)

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 on specialized instruction in pollution controls and the like. (Y)

776. Equal Opportunity in Employment. Cr. 2

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. (Y)

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)

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. (T)

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. (Y)

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 theses, 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. Not open to students who have taken JDC 863. 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)

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)

807. Jewish Law. Cr. 2

Jewish non-ritual law (contract, property, commercial, etc.); concepts, structure, methodology of the Jewish legal system. Introduction to principal literature and institutions; development of the Biblical sources by Jewish courts, legislation, and legal writers to the present. (I)

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. (Y)

830. Jurisprudence. Cr. 2

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.

836. Legal Process. Cr. 3

Not open to students who have taken JDS 815. Functional interrelationships between the institutions and processes of the American legal system. Nature of legal reasoning, the misuses of *stare decisis*, the proper allocation of responsibility to the judiciary and the legislature, techniques of statutory interpretation, the role of administrative agencies, and the planning-advising function of lawyers.

837. Advanced Legal Writing. Cr. 2

Prereq: JDC 640. May not be taken on passed-not passed. Research and analysis of complex legal problems involving legal history and administrative regulations. Class discussion on research, development of strategy, and organization and writing of an advocate. Students write both trial and appellate brief.

839. Legislation. Cr. 3

The legislative process and its use as an instrument of legislative drafting revision, interpretation and implementation, appropriations process; role of and control of lobbying, operation of the legislative process and its effect on policy formulation, Congressional investigations and effects of separation of powers doctrines. The lawyer and the development and implementation of legislation.

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 governmental units. Local finance, decentralization, annexation and incorporation. Exploration of possible reform by metropolitan government or federal assistance. The lawyer's role in formulating governmental policy in major urban complexes.

845. Mass Media Law. Cr. 2

Prereq: JDC 749 recommended. Legal and constitutional law applicable to the press and broadcast media, including: problem of newsgathering; First Amendment and the regulation of obscenity; problem of national security information; licensing of broadcast; public access to the air waves, fairness doctrine, equal time, and control of program content.

850. Patent Law. Cr. 2

No credit after former JDC 851. Not open to students who have taken former JDC 851. Substantive patent and related trade secret law. Emphasis on nature of patent right; scope of coverage of patent; issues of validity, infringements, inequitable conduct, patent-antitrust. Special issues relating to software, living organisms and chemistry. Technical background not required.

852. Personal Tax Planning through Estates and Trusts I. Cr. 2

Prereq: JDC 881. Not open to students who have taken former JDC 791. Federal and state transfer taxes and income taxes of fiduciaries and beneficiaries.

854. Problems in the Taxation of Corporations and Shareholders. Cr. 2-3

Prereq: JDC 881. Not open to students who have taken JDC 881. Federal income taxation of corporations and their shareholders. Problems relating to the formation, operation, reorganization, liquidation of the corporation. Problems between shareholders and their closely-held corporation. Analysis and resolution of complex tax issues.

857. Products Liability. Cr. 2

Problems arising out of defective products. Warranty action, liability in tort, damages, problem of proof, other topics.

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. (I)

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)

864. Remedies. Cr. 3

Not open to students who have taken JDC 778, former JDC 779, or former JDC 866. General principles of remedies for various causes of action including equitable remedies, restitution and damages. (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. 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. (W)

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)

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)

881. Taxation. Cr. 1-4

Interrelation between income tax policy and basic governmental and social institutions. Introduction to the law of federal income taxation. Basic application of these taxes. Problems involved in the variety of transactions and situations which confront the lawyer in general practice; analysis and use of materials which will 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)

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

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)

886. Welfare Law. Cr. 2 or 3

Prereq: JDC 670. General welfare policy; consideration of Aid to Families with Dependent Children (AFDC) Program and other welfare programs; available judicial and administrative remedies in welfare cases. (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)

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)

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)

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 appellate staff of the Wayne County Prosecutor, doing extensive research and brief writing. One- to two-week orientation period; 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)

913. Internship: Reporters' Committee for Freedom of the Press. Cr. 4

Prereq: second- or third-year student; coreq: JDC 749. Program under the supervision of the Reporters' Committee for Freedom of the Press, to provide research assistance and trial and appellate aid to the Reporters' Committee. Student must also prepare a paper on the topic of legal problems related to the press. (T)

914. Internship: Small Business Administration. Cr. 1

Prereq: consent of assistant dean; second or third year student. Student may not elect any other clinical or internship program in the same semester. Student works under the supervision of the District Counsel of the Small Business Administration, doing research and brief writing for civil litigation involving UCC problems, bankruptcies and foreclosures. Approximately 8-10 hours per week during fall or winter terms; 16-20 hours per week in summer term. (T)

Juris Doctor Seminar (JDS)

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 9-10 hours per week during fall or winter terms; 16-20 hours per week in summer term. (T)

917. Internship: United States Claims Court. Cr. 2

Prereq: second or third year student. Program under supervision of United States Claims Court to provide research assistance in cases involving non-tort monetary claims against the United States. (T)

930. Free Legal Aid Clinic. Cr. 1-2

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)

950. Clinical Advocacy: Civil and Criminal Practice. Cr. 4

Prereq: consent of instructor, JDC 782; coreq: 734 or 970. Students act as student attorneys pursuant to state and federal student practice rules, representing clients in civil and criminal cases in trial courts under faculty supervision. Experience with full range of tasks, including interviewing and counseling, discovery, negotiation, motion practice and trials. Discussion of pending cases; instruction in substantive law, procedures and techniques. (I)

970. Trial Advocacy: Evidence. Cr. 4

Not open to students who have taken JDC 734. Trial skills developed by clinical method of lecture, demonstration, student performance. Topics include direct and cross-examination, examination of experts, foundations, motions in limine and trial motions, opening statement, closing argument, jury selection and voir dire, jury instructions. Federal law of evidence is taught by same method to develop mastery of Federal Rules of Evidence. (Y)

976. Bankruptcy Reorganizations Workshop. Cr. 3

Prereq. or coreq: JDC 758 or consent of instructor. Not open to students who have taken JDC 865. Detailed examination of corporate reorganizations under the Bankruptcy Code, focusing on both procedural and substantive aspects. Simulated negotiations of plans, hearing to lift stay, objections to disclosure statements; drafting exercises cover disclosure statements, plans of reorganization, and analysis of operating statements. (I)

981. Personal Tax Planning through Estates and Trusts II. 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. (Y)

985. Problems in Commercial Law. Cr. 4

Prereq: JDC 737. Not open to students who have taken JDS 728. Advanced study of commercial law in a problem setting; policy, theory and application of the statute. (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. (Y)

716. American Legal History. Cr. 3

Social history of the American legal profession using a variety of secondary works, history, and literature to understand development of the modern legal profession. The social, political, economic roles played by lawyers in American history.

721. Children and the Law. Cr. 3

Legal issues relating to the child as a family member. Differences in legal treatment of adults and children in contract, tort and criminal law. Examination of developments in areas of illegitimate procreation, children's constitutional rights and limits of parental control.

728. Commercial Law. Cr. 3

Prereq: JDC 737. Not open to students who have taken JDC 737. Study of the Uniform Commercial Code with special emphasis on documents of title, letters of credit, and the transfer of securities.

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.

737. Contemporary Legal Theory. Cr. 3

Prereq: JDC 830 or consent of instructor. Recent contributions in jurisprudence and philosophy of law concerning issues such as nature of law and legal systems; relationship between law and morality; disobedience and our obligation to obey the law.

743. The Corporation and Public Policy. Cr. 3

Significant impacts of large American corporations on the welfare of the public at home and abroad that have evoked legal responses such as antitrust, price controls, treaties, public subsidies, industry regulation Comsat.

750. Criminal and Quasi-Criminal Law and Procedure. Cr. 3

Substantive and procedural issues in criminal prosecutions, commitments, deportations, forfeitures, expulsions, and license deprivations.

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.

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.

762. Current Problems in Taxation. Cr. 3

Prereq: JDC 881. Examination of proposals for change in income laws in areas of: (1) tax implications of marriage and family responsibilities; (2) interpretation of personal and corporate taxes; (3) tax shelter abuses; (4) fringe benefits to employees; (5) child care allowances; (6) simplification of the tax laws.

766. Discrimination in Employment and Housing. Cr. 3

Prereq: JDC 670. Not open to students who have taken JDS 722 or JDS 768. Constitutional and statutory remedies against discrimination in employment and housing based on race, sex, age, religion, including state and local constitutional and legislative remedies; procedure of Michigan Civil Rights Commission.

767. Economic Analysis of Labor Law Issues. Cr. 3

Prereq: JDC 812. The first portion of the seminar will examine the basics of economic analysis of law, from various perspectives; the economics models developed will then be applied to substantive questions in labor law. (I)

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)

780. Federalism, Sovereignty and Natural Resources. Cr. 3

Prereq: JDC 670 recommended. Management of natural resources in the U. S. and roles of competing sovereigns in exploitation and control of underlying resource base. Emphasis on constitutional analysis, role of federal common law and relation between legal rules and distribution of beneficial use of resource base. (I)

782. Health Law. Cr. 3

The health system and its interaction with the law. The effect of legal doctrine and public policy development relating to regulation of health providers: licensure and facility approvals, private and government health insurance, role of consumers, emerging concepts of health planning, national health insurance. (Y)

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)

792. International Avoidance of Double Taxation. Cr. 3

Prereq: JDC 881 and JDC 852. Investigation of treaties between nations designed to ameliorate the double imposition of taxation on individuals, estates, and business entities.

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. (Y)

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)

819. Legislative Drafting. Cr. 3

No credit after JDC 839. Legislative drafting techniques, including limitations on legislation, legislative interpretation and procedures, and lobbying. Students draft an original bill with a section-by-section analysis and write a detailed paper in support of the bill. (Y)

827. Advanced Patent Law. Cr. 3

Prereq: JDC 850. Selected topics in patent law including 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 as defined by recent Federal Circuit decisions. (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)

832. Occupational Health and Safety. Cr. 3

Legal regulation of workplace health and safety, including Occupational Health and Safety Act. Special emphasis on the usefulness and limitations of cost/benefit analysis of legal policy alternatives. (I)

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)

859. Tax Shelters. Cr. 3

Prereq: JDC 881. Substantive and administrative aspects of tax shelters. Review of partnership tax provisions and at-risk rules applicable to tax shelters, characteristics of selective abusive and nonabusive shelters, financial analysis of shelters, registration of shelters and statutory remedies against promoters and investors, Circular 230, and problems of the burned-out shelter. Sample prospectuses and legal opinions in tax shelter offerings used in analysis of some areas. (I)

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 special rights of victims of sexual assault, spouse abuse, and child abuse. (Y)

Master Of Laws (LLM)

Courses Leading to the Master of Laws Degree

The following courses are primarily for graduate students, open to undergraduates 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 J.D. courses and graduate courses in economics and business administration.

810. Arbitration of Labor Disputes. Cr. 2
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)

823. Public Sector Labor Relations Law. Cr. 2
Public sector labor relations law, federal and state, including Michigan public employee labor law. Comparison of public and private sector labor law in right to join and form unions, employee relationships, collective bargaining, collective action and grievances. (B)

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. Workmen's Compensation Law. Cr. 2-4(4 req.)
Study of workmen's compensation law and practice, based on the Michigan statute; comparison with other state statutes. (Y)

854. Executive Compensation Plans. Cr. 2
Prereq: JDC 881. Problems in the tax principles applicable to the treatment of qualified and non-qualified deferred compensation arrangements (including retirement and salary continuation plans) and executive compensation arrangements (including stock option, restricted property and bonus plans); emphasis on pension and profit-sharing plans for corporate employees; ERISA problems. (Y)

858. Federal Income Taxation of Partnerships and Subchapter S Corporations. Cr. 2
All aspects of transfer of property to partnership and subchapter S corporations; problems in connection with operations, and distribution of property and transfers of interest in partnership and subchapter S corporations. (Y)

862. Federal Tax Practice. Cr. 2
Procedure, both administrative and judicial, involved in the conduct of

federal tax controversies.

866. Income Taxation of Trusts and Estates. Cr. 2
Prereq: JDC 881. Rules of federal income taxation applicable to trusts and estates. Selected estate tax problems under existing treatment with a view to considering possible changes in this area of tax law.

868. Problems in Income Tax Accounting. Cr. 2
Prereq: JDC 881; some accounting background recommended. Selected accounting problems of the federal income tax, including establishment of accounting period, net operating loss, depreciation "at-risk" rules, gain recognition, inventories and change of accounting method.

870. State and Local Taxes. Cr. 2-4(4 req.)
The basic tax laws of state and local government, particularly property and excise taxes.

872. Tax Aspects of Corporate Reorganization. Cr. 2
Prereq: JDC 881. Tax problems arising out of corporate reorganization.

873. Tax Aspects of Real Estate Transactions. Cr. 2
Prereq: JDC 881. Not open to students who have taken former JD 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.

874. Tax Penalties and Prosecutions. Cr. 2
Prereq: JDC 881. Federal, civil and criminal remedies for fraudulent tax evasion.

876. Tax Problems of Corporate Distributions and Liquidation. Cr. 2
Prereq: JDC 881 and JDC 854. Corporate distribution and liquidation problems not covered in other tax law courses.

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.

890. Directed Study in Law. Cr. 1-3
Prereq: consent of adviser.

899. Master's Essay Direction. Cr. 1-2
Prereq: consent of adviser.

Undergraduate Law Course (ULC)

621. Introduction to Environmental Law. Cr. 4
Prereq: junior, senior, or graduate student standing; recommended prereq: satisfaction of University Requirement in American Government. Not open to law students. Survey of environmental law, including both common law and statutory approaches to environmental problems. How the legal process translates issues of environmental quality and protection into issues that can be addressed by administrative systems, or into concrete disputes suitable for judicial resolution.

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College of Liberal Arts

DEAN: DALMAS A. TAYLOR

Foreword

The College of Liberal Arts provides instruction and supports research in a wide variety of academic disciplines as it serves the graduate-professional interests and needs of a diverse student population. Curricula leading to master's degrees and doctorates are offered in the sciences, mathematics, the social sciences and the humanities. A range of post-baccalaureate certificate programs is also available.

Teachers, researchers and scholars, many recognized as leaders in their respective academic disciplines, serve on the graduate faculty of the College. In many fields of study, they are prepared to provide both theoretical and practical training at the graduate-professional level. Curricular flexibility for students whose academic interests are interdisciplinary is also offered.

It is the goal of the College of Liberal Arts to provide its students with timely skills, knowledge, and understanding of the highest quality. By so doing, it will equip them to build successful professional careers and satisfying personal lives.

Graduate Degrees

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.

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 Languages
Comparative Literature	Nutrition and
Computer Science	Food Science
East European Studies	Philosophy
Economics	Physics
English	Political Science
French	Psychology
Geography	Russian
German	Sociology
History	Spanish
Italian	Speech

Master of Arts in Teaching College English

Master of Arts in Teaching College Mathematics

Master of Public Administration— with a major in Public Administration or with a major in Criminal Justice

Master of Science— with majors in

Biological Sciences	Geology
Chemistry	Nutrition and
Computer Science	Food Science
Criminal Justice*	Physics

Master of Urban Planning— with a major in Urban Planning

Doctoral Degrees and Majors

Doctor of Philosophy— with majors in

Anthropology	Modern Languages
Biological Sciences	Philosophy
Chemistry	Physics
Computer Science	Political Science
Economics	Psychology
English	Sociology
History	Speech
Mathematics	

Minor or Cognate Graduate Credit

areas

American Studies	Humanities
Aramaic	Journalism
Classics	Polish
Greek	Slavic**

Admission Requirements

Admission to the graduate degree programs is contingent upon admission to the Graduate School; for requirements, see page 13. In addition, the following criteria may also apply.

In the selective admission of graduate students, preference is given to those students who have achieved superior undergraduate scholastic records and who evidence superior abilities.

If undergraduate preparation is considered deficient for advanced work in graduate 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. Many individual degree programs have specific additional requirements; for which, see the subsequent departmental sections of this bulletin.

Graduate Record Examinations

These examinations are intended to assist students and advisers evaluate educational preparation or to serve as bases for planning future study. Although these examinations are not required under any uniform policy throughout the Graduate School, they are required of all majors in some departments and of students in certain classifications in other departments. Students should consult the department in which they proposes to major to determine whether examinations must be taken.

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Except for East European Studies majors who may earn major (not minor) credit in this area.

* Designation of the field is part of the degree title.

Students required to take these examinations must apply at the Testing and Evaluation Office, Room 343, Mackenzie Hall either prior to or at the time of admission. Students who have previously taken the examination may have transcripts of these scores filed. After the initial registration, no subsequent enrollment will be permitted nor will candidacy be authorized until examination requirements have been fulfilled.

DEGREE REQUIREMENTS

All course work must be completed in accordance with the academic procedures of the Graduate School (see page 20) and the College governing graduate scholarship and degrees. 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. To be eligible for candidacy, students must file officially approved *Plans of Work*. *Plans of Work* should provide for effective concentration in a major field, with proper supporting courses in related fields. Ph.D. applicants should file this *Plan* with the Graduate School; master's applicants with the graduate officer of the college in which they are seeking a degree. In preparing a *Plan*, students should evaluate with care their personal and professional objectives as well as all degree and departmental requirements.

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

Normally, students enrolled in master's degree programs are expected to file a *Plan of Work* by the time eight to twelve graduate credits or their equivalent have been earned. Applicants 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. *Plans* are filed with the College graduate officer.

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 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 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 follows:

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.

— Course Requirements

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 (700 and above).

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 *Plans of Work* are 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 must also be present at the final dissertation defense.

— 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 student or department.

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 from 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.

College Directory

Administration

Dean:
Dalmas A. Taylor 554 Mackenzie Hall

Deputy Deans:
Louise M. Jefferson 554 Mackenzie Hall
John P. Oliver 554 Mackenzie Hall
Claude Schochet 576 Mackenzie Hall

Assistant to the Dean:
Sherwin Collins 588 Mackenzie Hall

Administrative Assistant:
Mary A. Serowik 585 Mackenzie Hall

Administrative Officer:
Wafia Matta 542 Mackenzie Hall

Service Areas

Bulletin and Scheduling 592 Mackenzie Hall

Liberal Arts Graduate Office 579 Mackenzie Hall

Major/Curriculum Office 582 Mackenzie Hall

Personnel Records 545 Mackenzie Hall

Departmental Offices

American Studies 411 State Hall

Anthropology 137 Manoogian

Biological Sciences 210 Science

Chemistry 123 Chemistry

Computer Science 532 Mackenzie Hall

Criminal Justice 709 Mackenzie Hall

Economics 960 Mackenzie Hall

English 431 State Hall

Geography and Urban Planning 225 State Hall

Geology 201 Old Main

Greek and Latin 431 Manoogian

History 838 Mackenzie Hall

Honors Program 258 Mackenzie Hall

Humanities 631 Merrick Ave.

Linguistics 422 State Hall

Mathematics 646 Mackenzie Hall

Near Eastern and Asian Studies 437 Manoogian

Nutrition and Food Science 160 Old Main

Peace and Conflict Studies, Center for 5229 Cass Ave.

Philosophy 767 Mackenzie Hall

Physics and Astronomy 135 Physics

Political Science 856 Mackenzie Hall

Psychology 71 West Warren Ave.

Romance and Germanic Languages 487 Manoogian

Slavic and Eastern Languages 443 Manoogian

Sociology 762 Mackenzie Hall

Speech/Journalism 585 Manoogian

Women's Studies 431 State Hall

Mailing address for all offices:

(Department Name)
College of Liberal Arts
Wayne State University
5980 Cass Avenue
Detroit, Michigan 48202

ANTHROPOLOGY

Office: 137 Manoogian

Chairperson: Mark L. Weiss

Professors

Barbara C. Aswad, James B. Christensen (Emeritus), Bernice A. Kaplan, Bernard Ortiz de Montellano, Arnold R. Pilling, Victor A. Rapport (Emeritus)

Associate Professors

Marietta L. Baba, Gordon L. Grosscup, Helen E. Hause (Emeritus), Mark L. Weiss

Adjunct Professors

Morris Goodman, Gabriel W. Lasker (Emeritus), Madeleine Leininger, Eugene Perrin

Adjunct Associate Professor

Guerin Montilus

Adjunct Assistant Professor

Elizabeth Briody

Adjunct Instructor

Charles Martinez

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 and historical archaeology.

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.

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, 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.

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 20-28 and 190, 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 13. Additionally, applicants must satisfy the following:

(1) The student must have completed Anthropology 210, 211, and 520 or their equivalents. Qualified admission may be granted while these deficiencies are remedied.

(2) The student must have an undergraduate honor point average of at least 3.0. Qualified 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.

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 it is their intention to pursue a Ph.D. in this Department. 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 reading, he or she will be required to complete the master's degree under Plan A.

Candidacy must be established by filing a *Plan of Work* prior to completion of twelve credits.

DEGREE REQUIREMENTS: The Master of Arts degree is offered by this department under the following options:

Plan A: Twenty-four credits in course work plus an eight credit thesis. Twenty-four credits in anthropology and related fields must be earned as a graduate student, including two graduate seminars in anthropology. The following courses or their equivalents must have been completed with a grade of 'B' or better: Anthropology 211 (not for graduate credit), 520, 527, 531 or 532, 638 and 639. Students must also have completed the undergraduate Liberal Arts Foreign Language Group Requirement or its equivalent. At the undergraduate or graduate level, students must complete one approved course in statistics, as well as one course in sociocultural anthropology and one advanced course in physical anthropology and archaeology. At least one course in anthropological skills or methods appropriate to the student's interests must be completed as an undergraduate or graduate student. Students must satisfactorily complete a written M.A. examination. A final oral examination is required on the 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-nine credits including an eight credit thesis.

Plan C: Thirty-nine credits of course work.

Both options for this concentration require the following courses: ANT 531 or 532 or 638 or 639, 570, 720, 768, 769, 796, and 797; SOC 525 (Social Statistics) or its equivalent and SOC 593 or 720 or their equivalents. A degree of computer competency will be required of each student and determined on an individual basis in consultation with the medical anthropology adviser.

The requirements for the *Plan A* option are satisfied by six credits of ANT 796 (Internship) involving supervised field training, and ANT 797, a report on the field training submitted in thesis format. All students must complete at least nine credits in anthropology and/or cognate disciplines as approved by the medical anthropology adviser. A final examination is required.

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 13. 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 anthropology or its equivalent. The student must have had the following prerequisites or their equivalents: Anthropology 211 and 520.

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. 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 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 190 and 20-28, respectively.

The student is expected to have fulfilled the following requirements: (1) achieve a mastery of general theory in anthropology; (2) 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).

An examination may be required to demonstrate mastery of these requirements. 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 provide materials for the student's dissertation (in the case of anthropology and some other specializations, the dissertation based on laboratory research); and (2) submit an accepted dissertation and present a final lecture.

Foreign Language Requirement: The student must demonstrate proficiency in an approved scholarly language. Approved languages include Arabic, Chinese, French, German, Japanese, Portuguese, Russian and Spanish. Proficiency demonstrated in either of the following ways: (1) a grade of better in two years of work in the language offered to meet the requirement (four semesters or six quarters of classwork at an accredited college or university); (2) satisfactory performance on a standardized (Educational Testing Services) examination or 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 field language.

A more detailed discussion of the doctoral program is available from the department upon request. See also Graduate Requirements, page 25, for information on the required minimum residency, and other University requirements.

Assistantships and Fellowships: A limited number of assistantships and fellowships are available. Consult the Department chairperson for further details.

COURSES OF INSTRUCTION¹ (ANT)

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.

510. Culture and Ecology. Cr. 3

Prereq: ANT 210 or consent of instructor. Ethnological approach to interrelationship of environmental, demographic and socio-cultural variables. A survey of relevant ethnographic reports and theoretical and methodological problems.

512. Human Evolution. Cr. 3

Prereq: ANT 211 or consent of instructor. Fossil, behavioral and molecular evidence for the evolution of the human species. Emphasis on a structural functional approach to the origins of modern human biology. Current theories and models explaining human evolution compared and evaluated.

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 man adapts to environmental stress.

518. (CRJ 515) 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.

¹ See page 461 for interpretation of numbering system, signs and abbreviations.

body fluid identification. (Y)

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)

524. Anthropological Perspectives on the Role of Women. Cr. 3-4

Prereq: ANT 210 or consent of instructor. Only students in Honors Program may register for four credits. Evolutionary and cultural bases of female roles using a world sample, division of labor, marriage and sexual behavior, power and ideology. (I)

525. Retention of African Culture in the New World. Cr. 3

Prereq: ANT 210 or SOC 201 or consent of instructor. African background of New World blacks; slave trade; and degree to which African culture has been retained in the New World. (I)

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)

529. The Structure of Language: Phonology. (LIN 529). Cr. 3

Prereq: LIN 570. The sound systems of a variety of human languages compared and contrasted. Theories of the nature of sound systems and methods of analysis in phonology and morphophonology. (I)

530. Theory of Syntax. (LIN 530) (ENG 574). 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 various theories of syntax reviewed. (I)

531. Language and Culture. (LIN 531). Cr. 3

Prereq: ANT 210 or 520 or S S 191 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)

533. Arab Society in Transition. (SOC 533) (NE 533). Cr. 3

Prereq: ANT 210, SOC 200 or consent of instructor. Distinctive social and cultural institutions and processes of change in the Arab Middle East. Regional variations: background and discussion of current political and economic systems and their relationship to international systems. (I)

535. Economic Anthropology. Cr. 3

Prereq: ANT 210 or 520 or S S 191 or SOC 201 or consent of instructor. Cross-cultural analysis for testing economic concepts. Technology, trade, incentives, rewards, division of labor,

specialization, property in different societies and their interrelationships. (I)

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. (I)

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)

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)

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)

611. Human Genetic Variation. Cr. 3

Prereq: ANT 211 or consent of instructor. Genetic variation as a mechanism of human adaptation. Genetics of the evolutionary processes; techniques to assess variability and operation of evolutionary forces. Genetic adaptation to environmental stressors. (I)

617. Political Anthropology. Cr. 3

Prereq: ANT 210 or 520 or S S 191 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)

629. Culture Area Studies. Cr. 3

Prereq: ANT 210 or 520 or S S 191 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)

631. Comparative Family Patterns of American Ethnic Groups. Cr. 3

Prereq: ANT 210 or SOC 201 or S S 191 or consent of instructor. Courtship, marriage, division of labor within household, and other patterns between kinsmen. The old New England Puritan tradition, Amish, Irish, Polish, Black, Eastern European Jewish. (I)

636. (HIS 786) Oral History: A Methodology for Research. (LS 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 former SS 191 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)

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)

651. Latin American Prehistory. Cr. 3
Prereq: ANT 210 or consent of instructor; 527 recommended. Prehistory of Latin America with emphasis on the beginnings and the more elaborate cultures, including the Inca, Chibcha, Olmec, Maya, Aztec and others. (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. (I)

710. Studies in Linguistics. (LIN 710). Cr. 3-12 (Max. 12)
Prereq: ANT 529 and 530 or consent of instructor. Topics to be announced in *Schedule of Classes*. (I)

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. (I)

760. Seminar in Problems and Concepts in Physical Anthropology. Cr. 3 (Max. 9)
Central concepts and theories. Current developments, problems, and contemporary research orientations. Topics to be announced in *Schedule of Classes*. (I)

761. Seminar in Problems and Concepts in Linguistics. (LIN 761). Cr. 3 (Max. 9)
Central concepts and theories in linguistics. Current developments, problems, and contemporary research orientations in the field. Topics to be announced in *Schedule of Classes*. (I)

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*.

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*.

764. Seminar in Problems and Concepts in Linguistic Anthropology. (LIN 764). Cr. 3 (Max. 9)

Prereq: ANT 531 or consent of instructor. Central concepts and theories. Current developments, problems and contemporary research orientations. Topics to be announced in *Schedule of Classes*.

766. Seminar in Urban Anthropology. Cr. 3 (Max. 9)

Prereq: ANT 506 or consent of instructor. Identification and solution of urban problems. Topics to be announced in *Schedule of Classes*.

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.

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 and practices.

790. (ANA 790) Directed Study in Physical Anthropology. Cr. 1-8 (Max. 8)

Prereq: written consent of adviser and graduate officer.

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.

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.

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.

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 requires field work or intensive and systematic reading of original technical literature.

795. Directed Study. Cr. 1-9 (Max. 9)

Prereq: written consent of adviser and graduate officer.

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. Practical 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 Community Arts Center, 450 Reuther Mall

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 refract more accurately than written texts 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.

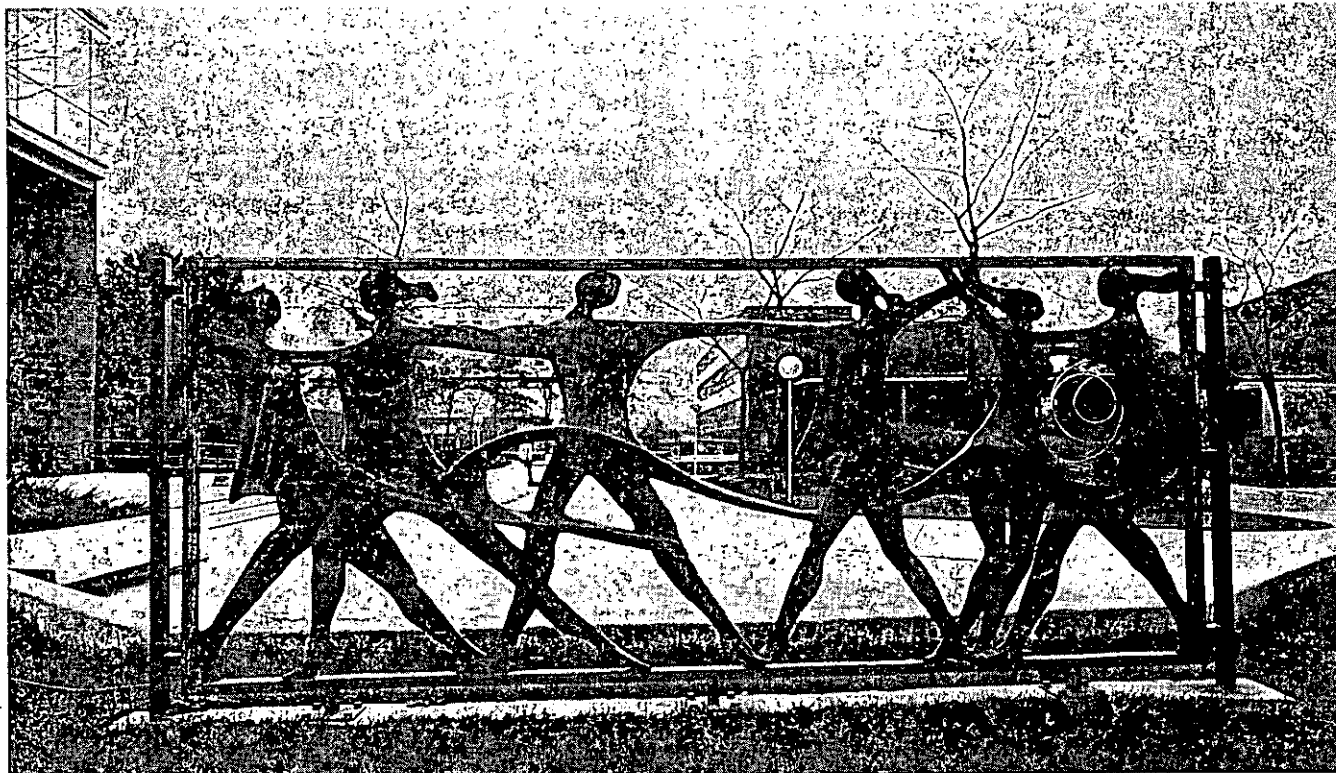
Graduate Degrees

Master of Arts — with a major in art history

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 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 Arts (see page 130).

For information relative to *Admission, Candidacy, and Degree Requirements* and for *Courses of Instruction*, see the Department of Art and Art History, School of Fine and Performing Arts; pages 133-141.



BIOLOGICAL SCIENCES

Office: 210 Science Hall

Chairperson: John D. Taylor

Associate Chairperson: Stanley K. Gangwere

Academic Services Officers: Laura Lee Birnie, Zirka S. Clark, Linda R. VanThiel

Professors

Walter Chavin, David R. Cook, Dominic L. DeGiusti (Emeritus), W. Eugene Foor, Stanley K. Gangwere, Seikichi Izawa, James M. Jay, Laurence Levine, Lida H. Mattman (Emeritus), Kazutoshi Mayeda, Hiroshi Mizukami, William S. Moore, David L. Njus, William Prychodko, Claude M. Rogers (Emeritus), Harold W. Rossmore, Albert Siegel, John D. Taylor, William L. Thompson

Associate Professors

Robert Arking, Kuo-Chun Chen, David M. DeForest (Emeritus), Hector R. C. Fernandez, D. Carl Freeman, V. Hari, Roman W. Harkaway (Emeritus), R. Anton Hough, Leo S. Luckinbill, Willis W. Mathews (Emeritus), Jessie L. Metcalf (Emeritus), Howard R. Petty, Ann Sodja, Robert S. Stephenson, Curtis J. Swanson, Rosario R. Teodoro (Emeritus)

Assistant Professors

Allen W. Nicholson, Allen J. Rosenspire

Adjunct Professors

Frank M. Butterworth, Michael Conrad, Thomas V. Getchell, Morris Goodman, Gloria Heppner, Kenneth V. Honn, Samuel B. Horowitz, Barbara J. McArthur, Eldon D. McArthur, Arun K. Roy, Eugene H. Studier, T. T. Tchen, Nalin J. Unakar, Frederick A. Valeriote

Adjunct Associate Professors

John E. Gannon, Egbert W. Henry, Virinder K. Moudgil, Jeffery L. Ram, Bonnie F. Sloane, Daniel L. Van Dyke

Adjunct Assistant Professors

Drew B. Buchanan, George J. Gamboa, Steve Graham, William R. Hammer, Karen M. Hunter, Stephen A. Sapareto, John W. Wireman

Graduate Degrees

Master of Science—with a major in biological sciences

Doctor of Philosophy—with a major in biological sciences and specializations in environmental, evolutionary and systematic biology; molecular and developmental biology; regulatory biology and biophysics

The department consists of three divisions: Division of Environmental, Evolutionary and Systematic Biology; Division of Molecular and Developmental Biology; and Division of Regulatory Biology and Biophysics. Together, they offer comprehensive instruction in biological sciences, while individually, each offers in-depth training for its special area.

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 13. In addition, applicants to this program are expected to have attained a cumulative 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 deficiency examination or course work before becoming a candidate for an advanced degree.

The Graduate Record Examination, both the Aptitude portion and the Advanced Test in Biology, is required as a counseling aid in preparing the student's plan of study. Both portions must be taken prior to the second year of graduate study. Prospective graduate majors should consult the chairperson of the Departmental Committee on Graduate Study prior to registration.

Candidacy: Applicants become degree candidates by filing a plan of work which has been approved by the Graduate Adviser and the Chairperson of the Department Committee on Graduate Study.

DEGREE REQUIREMENTS: The Department offers the Master of Science degree under the following options:

Plan A: Twenty-four credits in course work, plus a thesis (two credits).

Plan C: Thirty credits in course work, nine credits of which are from a prescribed core program.

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 190 and 20-28 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. Under *Plan A*, 10 credits of the required thirty-two must be in original laboratory or research under the direction of the student's major professor. 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. Under *Plan C*, students must elect BIO 509, a minimum of three credits in biochemistry (elect from the Departments of Biological Sciences, Chemistry, and Biochemistry), and two credits in seminar plus one course from each of the three divisions within the Department. At least two of the electives must be courses with laboratories. At least one-half of the total credits must be from the Department of Biological Sciences.

Teaching/Research Requirement: All biological sciences students in the thesis program must be engaged in a training assignment during each academic year they are in residence. This is required of all full-time students irrespective of whether a stipend is received in relation to the training assignment. The student's major adviser is responsible for seeing that this requirement is met each year. The training assignment may involve graduate teaching or research/professional activity approved by the graduate adviser.

Doctor of Philosophy With a Major in Biological Sciences

Admission: In addition to the requirements of the Graduate School (see page 13), the applicant should present a bachelor's or master's degree with a major in a biological or other science. Course work should include the fields of genetics, ecology, physiology, and supporting courses in physics, chemistry, and mathematics.

Applicants must take the Graduate Record Examination, both the Aptitude portion and the Advanced Test in Biology, and be accepted by the Department of Biological Sciences Graduate Admissions Committee.

DEGREE REQUIREMENTS: 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 190 and 20-28 respectively.

The *Preliminary Examination* must be taken as soon as possible after acceptance into the Ph.D. program, and must be passed by all doctoral students within two years after admission. The *Qualifying Examination* consisting of written and oral parts must be taken after completion of 75 percent or more of the required course work and no later than the third year of residence. *Final Defense* of the dissertation must be completed according to the schedule published by the University in the student's final term.

Teaching/Research Requirement: See above, under Master of Science requirements. In addition, 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.

Assistantships and Scholarships: Teaching and research assistantships are available to qualified graduate students. Inquiries and application should be directed to the chairperson of the Graduate Committee, Department of Biological Sciences.

COURSES OF INSTRUCTION¹ (BIO)

Most laboratory courses have a non-returnable 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.

500. Radiation Biology. (Lct: 3). Cr. 3
Prereq: 18 credits in biology. Effects of radiation on living organisms; basic theoretical concepts, techniques and applications of radiation (isotopes, x-ray). (F)

503. History of Biology. (Lct: 3). Cr. 3
Prereq: 16 credits in biology. Development of science and philosophy of biology from earliest written records to the present. (I)

504. Biometry. (Lab: 2; Lct: 3). Cr. 4
Prereq: MAT 201, MAT 221 or equiv. Student computer account required. Material fee as indicated in *Schedule of Classes*. Quantitative methods in biology. Statistical approach to data analysis and the design of experiments. Laboratory section permits actual analysis of selected statistical problems. (B)

506. Special Topics. Cr. 1-6(Max. 6)
Prereq: BIO 102; consent of instructor. Formalized treatment of the current state of knowledge in a significant area of biology. Topics to be announced in *Schedule of Classes*. (Y)

507. Genetics. Cr. 4 or 5
Prereq: BIO 102 or 220. If elected for five credits, material fee as indicated in *Schedule of Classes*. Material fee as indicated in *Schedule of Classes*. Inheritance in plants and animals; experimental and statistical evidence from which genetic mechanisms are deduced. Laboratory experiments to demonstrate genetic principles. (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 102; one course in chemistry or physics. Physical, chemical and biological properties of freshwater environments. (B)

511. Biogeography. (Lct: 3). Cr. 3
Prereq: BIO 102. Introductory study of principles and patterns of plant and animal distribution. (I)

513. Biological Fine Structure. (BIO 713). (Lct: 3). Cr. 3
Prereq: 18 credits in biology. Advanced studies relating to how cellular components as revealed by electron microscopy can be correlated with recent biological information obtained using membrane models, cyto-chemical and histochemical techniques, immunocytochemistry, gel electrophoresis, column chromatography and various biochemical techniques. (Y)

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. (Y)

519. Northwoods Field Investigations. Cr. 1-6(Max. 20)
Prereq: BIO 101, 102. Field investigations in biological sciences at Northwoods Biological Station under direction of Northwoods staff. (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. (B)

525. Food Microbiology. (Lab: 4; Lct: 3). Cr. 4
Prereq: BIO 220. Material fee as indicated in *Schedule of Classes*. Characterization of the total microbial flora; microbes in foods and their significance in food spoilage. Theories and practice of food preservation. (F)

526. Pathogenic Bacteriology. (Lct: 3). Cr. 3
Prereq: BIO 220 and CHM 226. Introduction to characteristics of aerobic and anaerobic bacteria of the vertebrate host; emphasis on those concerned with endogenous infections; methods of isolation and cultivation mechanisms in pathogenesis. (I)

527. Pathogenic Bacteriology Laboratory. (Lab: 6). Cr. 2
Prereq. or coreq: BIO 526. Material fee as indicated in *Schedule of Classes*. Laboratory experience in culturing and identifying the common bacterial pathogens of humans. (I)

531. Immunology. (Lct: 3). Cr. 3
Prereq: BIO 220 and CHM 226. Antibody formation, antigen structure, antigen-antibody reactions. (B)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

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- 546. Plant Physiology. (Lct: 3). Cr. 3**
Prereq: BIO 102; 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)
- 550. Developmental Biology of Plants. (Lct: 2; or Lct: 2; Lab: 6). Cr. 2 or 4**
Prereq: BIO 102. 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)
- 551. Plant Morphology. (Lab: 3; Lct: 2). Cr. 3**
Prereq: BIO 102. Anatomy and general morphology of tracheophytes. (I)
- 555. Systematic Botany. (Lab: 3; Lct: 2). Cr. 3**
Prereq: BIO 102. Material fee as indicated in *Schedule of Classes*. Principles and methods of taxonomy and identification of native vascular plants. (B)
- 561. Vertebrate Embryology. (Lab: 4; Lct: 3). Cr. 4**
Prereq: BIO 102. 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 man. Laboratory studies of gametogenesis and development of sea urchin, frog, chick and pig. (F)
- 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. (Lct: 2). Cr. 3**
Prereq: BIO 220 or 340; PHY 214; CHM 226 or consent of instructor. Integrated analysis of cancer: cell biology, pathology, etiology and therapy. (W)
- 567. Endocrinology. (BIO 768). (Lct: 4). Cr. 4**
Prereq: BIO 340. Functional evolution of the chemoregulatory mechanisms in vertebrates, physiology and biochemistry of hormones with emphasis on interhormonal relationships in metabolism, maintenance of homeostasis, growth, development. Endocrinopathies. (W)
- 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)
- 571. Paleontology of Vertebrates. (GEL 571). (Lab: 3; Lct: 3). Cr. 4**
Prereq: BIO 271 or GEL 102 or consent of instructor. Material fee as indicated in *Schedule of Classes*. Morphology, phylogeny, evolution, paleoecology and paleogeographic distribution of vertebrates.

Stratigraphic correlations based on vertebrate assemblages on a scale.

- 572. Ornithology. (Lab: 3; Lct: 2). Cr. 3**
Prereq: BIO 102. Material fee as indicated in *Schedule of Classes*. Morphology, systematics, ecology, evolution, physiology and behavior of birds. Field trips.
- 573. Mammalogy. (Lct: 2; Lab: 6). Cr. 4**
Prereq: 16 credits in biology. Material fee as indicated in *Schedule of Classes*. Systematics, geographical distribution, ecology, evolution, radiation, patterns of growth and reproduction, physiology and behavior of mammals. Field trips.
- 574. Insect Biology. (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. Field trips.
- 575. Biology of Aging. (BIO 775). (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.
- 578. Biology of Parasitism. (Lab: 6; Lct: 3). Cr. 5**
Prereq: BIO 102. Material fee as indicated in *Schedule of Classes*. Parasitism throughout the animal phyla. Morphology, life history, methods of transmission and control of parasites.
- 581. Embryology. (Lct: 3). Cr. 3**
Prereq: BIO 187 or 271, or equiv. Open only to nursing students. Gametogenesis and fertilization; descriptive and experimental embryology of echinoderms and amphibians; reproductive physiology and development of birds and mammals including humans.
- 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 man; inborn errors of metabolism, genetic engineering and understanding human population dynamics.
- 600. Cell Biology. (Lct: 3; or Lct: 3; Lab: 6). Cr. 3 or 5**
Prereq: BIO 220 or 340; PHY 214; CHM 226 or consent of instructor. Analysis of cell structure and function: nucleic acids, proteins, lipids, properties of cell organelle, organization of cell components. Introduction to laboratory techniques in cell biology: isolation and characterization of cells and organelles, cell culture, hybridoma, properties of nucleic acids, proteins and lipids.
- 602. Methods of Analysis in Life Sciences. (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, logic circuits, solutions and buffers, spectroscopy, separation techniques, elementary analyses, laboratory application of computers.
- 604. Computer Application in Life Sciences. (Lct: 2; Lab: 4). Cr. 4**
Prereq: knowledge of BASIC, junior or senior standing in life sciences. Use of microcomputer technology in life sciences. Methods of data acquisition and analysis. Use of various forms of computer input, such as: transducers, digital pads, A/D boards, and computer simulation graphic displays.
- 605. Techniques in Electron Microscopy. (Lab: 6; Lct: 2). Cr. 3**
Prereq: BIO 513 and written consent of instructor. Material fee as

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- 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)
- 606. Molecular Basis of Evolution. (Lct: 3). Cr. 3**
Prereq: BIO 102, 507, and 509; or consent of instructor. Use of proteins and nucleic acids as historical documents in studying evolutionary trends; emphasis on new information about modes of genome evolution derived from recombinant DNA methods. Theories and models of eukaryotic gene regulation in relation to evolutionary processes. (I)
- 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. Genetics of Microorganisms and Cells *In Vitro*. (BIO 708). (Lct: 3). Cr. 3**
Prereq: BIO 507. 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)
- 609. Evolutionary Genetics. (Lab: 3; Lct: 2). Cr. 3**
Prereq: BIO 504, 507. An integrated lecture/laboratory course in the application of genetics to organic evolution. Theoretical population genetics and readings in the original literature are emphasized. The laboratory has an open structure that allows students to conduct several classical experiments in population genetics. (B)
- 610. Biosynthesis and Metabolism. (Lct: 4). Cr. 4**
Prereq: BIO 102; 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)
- 614. Experimental Approach to Physico-Chemical Analysis. (Lct: 2; or Lab: 6; Lct: 2). Cr. 2 or 4**
Prereq: one year of chemistry, biology and physics. Physico-chemical principles applied in life sciences: solution thermodynamics; ionic processes in solution including buffers, pH, and equilibria across membranes; enzymatic and non-enzymatic kinetics; redox potentials; nature of chemical bonds; spectroscopy; and transport processes. (I)
- 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, 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 Middle and Secondary School Teachers. (Lct: 4). Cr. 4**
Prereq: consent of instructor. Offered only for graduate credit; for teachers only. Discussion of basic biological principles in light of

- recent advances. (I)
- 626. Laboratory Biology for Middle and Secondary School Teachers. (Lab: 3). Cr. 1**
Prereq: consent of instructor. Offered only for graduate credit; for teachers only. Laboratory component of BIO 625; basic laboratory techniques required to enhance instruction at middle and secondary school levels. (I)
- 635. Microbial Ecology. (Lct: 2). Cr. 2**
Prereq: eight credits in bacteriology. Ecological relationships between microorganisms and higher forms in soils, the marine environment, the bovine rumen, insects, and in petroleum fields. (B)
- 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: 4). Cr. 4**
Prereq: BIO 102. 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 Animal Physiology and Biochemistry. (BIO 767). (Lct: 3). Cr. 3**
Prereq: one course in physiology; one previous course in biochemistry highly recommended. A comparative analysis of biological mechanisms and adaptations of cellular and systemic variations which allow for biological success in changing environments. (B)
- 700. Recent Advances in Molecular 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 an area of cell and molecular biology. Topics to be announced in *Schedule of Classes*. (I)
- 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)
- 703. Gene Structure and Function. (Lct: 4). Cr. 4**
Prereq: BIO 507 and CHM 662. Detailed analysis of the synthesis, structure, function, and control of genes in prokaryotes, eukaryotes, and their viruses. (Y)
- 705. Recent Advances in Environmental, Evolutionary and Systematic 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 environmental, evolutionary or systematic biology. Topics to be announced in *Schedule of Classes*. (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) Genetics of Microorganisms and Cells *In Vitro*. (Lct: 3). Cr. 3

Prereq: BIO 507. 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. Developmental Genetics. (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)

713. (BIO 513) Biological Fine Structure. (Lct: 3). Cr. 3

Prereq: 18 credits in biology. Advanced studies relating to how cellular components as revealed by electron microscopy can be correlated with recent biological information obtained using membrane models, cyto- and histochemical techniques, immunocytochemistry, gel electrophoresis, column chromatography and various biochemical techniques. Independent studies. (Y)

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. (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)

720. Physiology of Bacteria. (Lct: 3). Cr. 3

Prereq: BIO 620 and biochemistry. Cell structure, chemistry and function; mechanisms and regulation of biochemical changes during bacterial growth and metabolism. (I)

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)

764. Recent Advances in Cancer Biology. Cr. 3

Prereq: BIO 220 or 340 and 564; PHY 214; CHM 226 or consent of instructor. Formalized and in-depth treatment of current knowledge in significant area of cancer biology. Topics to be announced in *Schedule of Classes*. (I)

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 Animal Physiology and Biochemistry. (Lct: 3). Cr. 3

Prereq: one course in physiology; one course in biochemistry strongly recommended. A comparative analysis of biological mechanisms and adaptations of cellular and systemic variations which allow for biological success in a multiplicity of changing environments. Includes independent studies. (B)

768. (BIO 567) Endocrinology. (Lct: 4). Cr. 4

Prereq: BIO 340. Functional evolution of the chemoregulatory mechanisms in vertebrates. The physiology and biochemistry of hormones; interhormonal relationships in metabolic maintenance of homeostasis, growth, development; endocrinopathies. Includes independent studies. (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)

780. Current Literature in Neuroscience. (Lct: 1). Cr. 1

Prereq: consent of neuroscience program graduate officer. Students review current literature in neuroscience and make oral reports to the class for general discussion. (I)

795. Individual Studies in Neuroscience. Cr. 1-6

Prereq: consent of instructor, neuroscience program graduate officer, college graduate officer for master's students; consent of graduate school for Ph.D. students. Student does a short research project in the laboratory, as outlined briefly in a written proposal submitted prior to registration and agreed upon by the student, instructor, and chairperson of neuroscience graduate committee. (I)

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)

894. Seminars in Neuroscience. (Smr: 1). Cr. 1

Prereq: consent of neuroscience program graduate committee chair and departmental graduate officer. Faculty and outside speakers present topics in neuroscience. (I)

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)

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

Chairperson: Richard L. Lintvedt

Academic Services Officers: Sharon Kelley, Joseph Oravec

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, Stanley Kirschner, Norman A. LeBel, Edward C. Lim, Richard L. Lintvedt, Lawrence J. Marnett, W. Martin McClain, John P. Oliver, Wendell H. Powers (Emeritus), Morton Raban, Gene P. Reck, David B. Rorabacher, A. Paul Schaap, George H. Schenk, H. Bernhard Schlegel, Calvin L. Stevens, Tche T. Tchen

Associate Professors

Ellen B. Bicknell-Brown, Colin F. Poole, James H. Rigby, Louis J. Romano, Ronald R. Schroeder

Assistant Professors

Kim F. Albizati, David M. Coleman, Joseph S. Francisco

Adjunct Professors

Charles King, Erhard W. Rothe

Adjunct Associate Professor

Gary W. Carriveau

Adjunct Assistant Professor

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 four of the five major fields. Demonstration of proficiency in each area may be achieved in any one of three ways: (a) by receiving a grade of 'pass' on the proficiency examination; (b) by receiving a grade of 'conditional pass' and completing a specified graduate course relevant to the particular area (CHM 701, 702, 710, 720, 724, 741, 743, 747, 748, 762, or 764) in the area with a grade of 'A' or 'B'; or (c) by completing a specified remedial proficiency course

(CHM 681, 682, 683, 684, or 685) relevant to the particular area with a grade of 'A' or 'B'. Full-time graduate students must establish proficiency in four 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 20-28 and 190, 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 13.

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.

- Total of twenty-two credits in course work which must include:
 - one credit in CHM 885;
 - two or three credits of seminar (CHM 880, 881, 882, 883, or 884);
 - CHM 674;
 - at least twelve credits in chemistry courses open to graduate chemistry students (excluding research, seminar, CHM 885, and proficiency courses) of which at least nine credits must be at the 700 level;
 - up to seven credits of chemistry proficiency and/or cognate courses;
- Eight credits of CHM 899 involving independent thesis research under the direction of a faculty member in the Department.
- 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.

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) CHM 674;
- (d) at least eighteen credits in chemistry courses open to graduate chemistry students (excluding research, seminar, CHM 885, and proficiency courses) of which at least nine credits must be at the 700 level. Courses must be elected in at least four of the following fields (excluding proficiency courses): analytical, biochemistry, inorganic, organic, physical.

Chemistry courses below the 600 level may not be applied toward this degree.

Doctor of Philosophy with a Major in Chemistry

Admission: to this program is contingent upon admission to the Graduate School; for requirements, see page 13. 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 proficiency courses) 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 six passes within sixteen attempts, two-thirds 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 exclusive of remedial courses (CHM 681, 682, 683, 684, 685), 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 (excluding proficiency 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. 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

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, 277 Chemistry Building.

COURSES OF INSTRUCTION¹ (CHM)

A minimum grade of 'B' is required in every prerequisite course. Some laboratory courses have a non-refundable materials fee and are so indicated in the *Schedule of Classes*. The unused portion of the breakage fee is refundable; students are financially responsible only for the repair or replacement of University materials lost, damaged, or destroyed in classroom procedures.

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)

510. Survey of Analytical Chemistry. Cr. 3

Prereq: CHM 224 or equiv. No credit for chemistry majors; no credit if taken after CHM 132 or CHM 312. 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*. For students in medical technology, nutrition, and life sciences. Emphasis on gravimetric, titrimetric, spectrophotometric, and potentiometric analysis of simple substances of clinical and biological interest. (W)

516. Instrumental Analytical Chemistry. Cr. 3

Prereq: CHM 132 or 312, and 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,S)

542. Physical Chemistry I. Cr. 3

Prereq: CHM 108 or 132, and MAT 202. Chemical thermodynamics, phase equilibrium, solutions, surface chemistry, electrochemistry. (F,W)

544. Physical Chemistry II. Cr. 4

Prereq: CHM 108 or 132; and MAT 202. 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. Analytical-Physical Chemistry Laboratory I. Cr. 2

Prereq: CHM 132 or 312, and 542 or equiv.; 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*. Basic electrical and physical measurements. Principles of measurement. Fundamental investigations of thermodynamics. Fundamental studies and advanced applications of potentiometry. Principles and techniques of solution spectroscopy including UV-visible, IR, fluorescence. (F,W)

557. Analytical-Physical Chemistry Laboratory II. Cr. 2

Prereq: CHM 516 and 555 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 electrical and physical measurements. Fundamental kinetic measurements. Principles and techniques of atomic and molecular spectroscopy, magnetic resonance, and mass spectrometry. (F)

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)

572. Topics in Chemistry for Middle School Science Teachers. Cr. 1-6(Max. 20)

Topics, including principles of chemistry, descriptive chemistry, chemical demonstrations, audio-visual aids, computer aids, laboratory experiments, to be announced in *Schedule of Classes*. (I)

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)

576. Special Topics in Chemistry for High School Science Teachers. Cr. 1-6(Max.20)

Open only to certified high school science teachers. Topics offered in different semesters: laboratory experiment development, computers in chemistry demonstrations, advanced concepts in various chemical fields. (I)

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)

614. Advanced Analytical Chemistry. (Lct: 3; or Lab: 4). Cr. 3-4

Prereq: CHM 132 or 312 or equiv. If elected for 4 credits, 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*. Modern advanced analytical methods for inorganic and organic substances utilizing chemical methods and common instruments. Survey of the analytical chemistry of the periodic table. Useful background for analysis in research or industry. (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)

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)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

662. Biochemistry I. (CHM 762). Cr. 3

Prereq: CHM 224 or 231 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. Biochemistry Laboratory. (CHM 763). Cr. 3

Prereq: CHM 662. Basic biochemical experiments such as purification, characterization, and kinetics of enzymes. Laboratory work with spectrophotometry, fluorometry, polarography, and other methods in biological systems. Lectures on current methods frequently used in biochemical studies. (F)

664. Biochemistry II. (CHM 764). Cr. 3

Prereq: CHM 224 or 231 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. 1-3

Not for chemistry major credit. Offered for S and U grades only. 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)

681. Proficiency in Analytical Chemistry. Cr. 2

Prereq: graduate standing. Not offered for major or minor credit. Fundamental principles and methods of analytical chemistry. Satisfies graduate proficiency requirement in analytical chemistry. (F,S)

682. Proficiency in Inorganic Chemistry. Cr. 2

Prereq: graduate standing. Not offered for major or minor credit. Fundamental principles of inorganic chemistry. Satisfies graduate proficiency requirement in inorganic chemistry. (T)

683. Proficiency in Organic Chemistry. Cr. 2

Prereq: graduate standing. Not offered for major or minor credit. Fundamental principles, structures, and mechanisms of organic chemistry. Satisfies graduate proficiency requirement in organic chemistry. (T)

684. Proficiency in Physical Chemistry. Cr. 2

Prereq: graduate standing. Not offered for major or minor credit. Fundamental principles of thermodynamics, kinetics, bonding, and molecular energy levels. Satisfies graduate proficiency requirement in physical chemistry. (F,W)

685. Proficiency in Biochemistry. Cr. 2

Prereq: graduate standing. Not offered for major or minor credit. Survey of biochemistry with emphasis on protein structure and function, metabolism, and nucleic acids. (F)

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 equiv. Structure and properties of inorganic compounds. Ligand field theory; electronic, vibrational, and magnetic resonance spectroscopy. (F)

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, 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 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 voltametric 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 Synthesis. 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)

762. (CHM 662) Biochemistry I. Cr. 3

Prereq: CHM 224 or 231 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) Biochemistry Laboratory. Cr. 3

Prereq: CHM 762 and graduate standing or consent of instructor. Basic biochemical experiments such as purification, characterization, and kinetics of enzymes. Laboratory work with spectrophotometry, fluorometry, polarography, and others in biological systems. Lectures on current methods frequently used in biochemical studies. (F)

764. (CHM 664) Biochemistry II. Cr. 3

Prereq: CHM 224 or 231 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; x-ray crystallography. (I)

869. Advanced Topics in Biochemistry. Cr. 1-3(Max. 12)

Prereq: CHM 762 or equiv. Topics offered 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. 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. (F,W)

881. Seminar in Organic Chemistry. Cr. 1(Max. 4, M.S.; max. 6, Ph.D.)

Prereq: graduate standing. 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. (F,W)

882. Seminar in Inorganic Chemistry.

Cr. 1 (Max. 4, M.S.; max. 6, Ph.D.)

Prereq: graduate standing. 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. (F,W)

883. Seminar in Physical Chemistry.

Cr. 1(Max. 4, M.S.; max. 6, Ph.D.)

Prereq: graduate standing. 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. (F,W)

884. Seminar in Biochemistry.

Cr. 1(Max. 4, M.S.; max. 6, Ph.D.)

Prereq: graduate standing. 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. (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

Prereq: consent of doctoral adviser. Offered for S and U grades only. (T)

COMPARATIVE LITERATURE

Office: English Department, 431 State Hall

Director: Alfred Schwarz

Staff: Faculty members from the Departments of English, Greek and Latin, Humanities, Near Eastern Languages, Romance and Germanic Languages, and Slavic Languages.

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 13). 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: 538 Mackenzie Hall

Chairperson: Vaclav Rajlich

Administrative Assistants: Donna Alexander, Patricia A. Stroker

Professors

Michael Conrad, Karel Culik, Mortesa A. Rahimi, Vaclav Rajlich

Associate Professors

Charles F. Briggs (Emeritus), William Grosky, Robert Reynolds, Ishwar Sethi, Nai-Kuan Tsao, Horst Wedde, Seymour J. Wolfson

Assistant Professor

Roberto Kampfner, Jia-Guu Leu, Alexis manaster-Ramer, Satyendra Rana, Ambrish Vashishta

Adjunct Professors

George Lasker, Michael Marcotty, Bernard Zeigler, Carl Friedlander

Graduate Degrees

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

* *Post Bachelor Certification in Computer Science*

The Department of Computer Science teaches the principles of design and use of computing and information systems. Underlying concepts are stressed which will give students the flexibility to cope with the ever-increasing complexity of this rapidly-changing field. The objective of the Department is to provide a learning environment which will foster the development of computer scientists with strong fundamental concepts and a good mathematical foundation. Students with widely varying backgrounds and goals will find plans of study and research designed to meet their needs.

Master's Degrees

The Department of Computer Science offers 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 awarded to students who pursue a more concentrated range of topics.

The great variety of subjects which are part of computer science, together with the immense diversity of its applications, make it imperative that students in the master's program maintain close contact with their advisers in order to achieve a coherent plan of study directed toward a specific goal. In particular, elections of courses should never be made without prior consultation and approval of the

* For specific requirements consult the Wayne State University Undergraduate Bulletin.

adviser.

Admission to these programs is contingent upon admission to the Graduate School; for requirements, see page 13. In addition to satisfying Graduate School criteria, the applicant must have:

1. A knowledge of computer science equivalent to that obtained in Computer Science 203, 371, 441, 520, 531, and 541.
2. Mathematical preparation equivalent to that obtained from Mathematics 186, 187, 201, and 221.
3. 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 prerequisites of advanced courses in his/her areas of special interest before seeking admission. Prerequisite course work required as a condition for admission must be completed prior to electing graduate courses.

Upon admission, each student is assigned an adviser for guidance and direction in meeting degree requirements and academic goals. As the student's specific interests in computer science become more clear, and he/she commences with thesis or essay research, it is probable that changing to an adviser best suited to the student's research area will be appropriate. Forms for this purpose are available in 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. Upon approval of the *Plan of Work* by that committee and the Dean of Graduate Studies, the student will be considered a degree candidate. The student will not be allowed 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* must be reviewed for possible adjustment.

In the *Plan of Work* the student will state his/her choice of one of the Plans, A, B, or C.

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 20-28 and 190, respectively. The above requirements are those in force as of the publication date of this bulletin, but students should keep in mind that the requirements for this degree 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 is offered by this department under the following Plans, B or C.

Plan B requires thirty credits including a three-credit essay. Essays are technical papers which are the original work of the author. Topics include the survey, comparison, or review of a subject. The student's essay is directed by his/her adviser. The essay must be approved by the adviser and one additional faculty member. Prior to the approval, the student must make a public presentation of the work.

Plan C requires thirty credits earned in course work. A minimum of twelve credits must be at or above the 700 level. The student must also complete a final oral examination conducted by the Graduate Committee.

Course Requirements

1. Twenty-four credits in Computer Science (CSC) courses (which may include Plan B essay credit).
2. No more than six credits in directed study under normal circumstances.
3. **Plan B:** At least nine credits in courses numbered 700 or above in addition to essay credits.
4. **Plan C:** A minimum of nine credits in computer science, plus one additional course, numbered at or above the 700 level.

Master of Science With a Major in Computer Science

DEGREE REQUIREMENTS: The Master of Science degree is offered by this department only as a Plan A option, requiring thirty-two credits including completion of a thesis for eight credits. The student's thesis work is directed by his/her adviser together with a committee of two additional faculty members. All committee members must read and approve the thesis, which must be presented at a public session prior to final acceptance. Theses are technical papers describing the original creative work of the author. Topics include original research at the master's level and in-depth analysis of, comparison to, or extension of the work of others. (See the ACM journals and transactions for model topics and stylistic conventions.)

Course Requirements:

1. A minimum of twenty-four credits in CSC courses (which may include thesis credit).
2. Election of at least nine credits of CSC courses numbered at or above the 700 level. (This is in addition to the thesis.)
3. No more than six credits of directed study under normal circumstances.

Master of Science in Electronics and Computer Control Systems

The Department of Computer Science, with the Departments of Mechanical Engineering and of Electrical and Computer Engineering, 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. For curricular data, students are referred to the Chairperson of the Department of Mechanical Engineering, College of Engineering.

Doctor of Philosophy With a Major in Computer Science

The Doctor of Philosophy degree is awarded to individuals who have displayed an in-depth understanding of the subject matter of computer science, as well as 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 in the field who will continue in academic work or enter directly into the business/industrial complex. It encourages the attainment of excellence in research and scholarship necessary to catalize the advancement of computer technology. Meeting of requirements for the doctorate is tested 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 13. The requirements for admission to the Ph.D. program in computer science include:

1. A knowledge of computer science equivalent to that obtained in Computer Science 203, 371, 441, 520, 531, and 541.
2. Mathematical preparation equivalent to that obtained in Mathematics 186, 187, 201, and 221.
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.

Determination of admission is also based upon the student's record which should give evidence of ability to effectively pursue advanced studies in Computer Science and research potential. 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 190 and 20-28, respectively.

The computer science doctoral program is designed to be flexible in order to meet the individual student's interests. A student will normally take four years to complete the program, which can be described in four major stages:

1. Program Selection: The first stage is devoted primarily to coursework and other studies in preparation for the Ph.D. Proficiency Examination. In consultation with the adviser, an individual program is selected for an approved *Plan of Work* which 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 of CSC courses at or above the 700 level. Of these thirty credits, there must be at least fifteen credits of CSC courses from the designated primary area and at least six credits of CSC courses from the designated secondary area.

2. Proficiency Examination: During the second stage the student will take the Proficiency Examination which is intended to evaluate the

preparation of the Ph.D. student. The examination is to be taken later than the third semester after joining the Ph.D. program. 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. Candidacy: 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 department which is relevant to the topic of the research. The Committee will direct the oral examination and dissertation of the candidate.

With the major part of the course work completed, the student will finalize the selection of a dissertation topic by the development of the Prospectus which is to describe the proposed research in some detail stating the problem, its scope, the kinds of sources and resources required, the methodology to be used, prior research results, and a description of the hypothetical results expected from the research. After approval of the Prospectus, the oral examination is administered which covers the material from the Prospectus, *Plan of Work* and any other material the Committee may deem relevant.

4. Dissertation: The fourth and 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

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. Later applications will be considered only on the basis of available positions.

Facilities

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.

Students have access to the University's computing facilities through two main terminal rooms located on the Main Campus. Each of these rooms is maintained by the Department with a consulting staff of student assistants to aid those in computer science courses at Wayne State University. In addition, the computing facilities are readily accessible through the public telephone networks.

The research activities of the Department are supported by several Research Laboratories equipped with state-of-the-art computing facilities. These facilities include:

A Digital Equipment Corp VAX-11/780 operating as a Merit Network host.

A local area network consisting of SUN color, grayscale, and monochrome workstations.

A local area network consisting of Digital Equipment Corp VAX Station II/GPX Advanced Color Workstations.

A local area network of modern PCs.

A vision laboratory centered around a COMTAL Vision System 1/10.

In addition to the general University interactive facilities, the Department owns terminals for the exclusive use of its faculty and students.

COURSES OF INSTRUCTION¹ (CSC)

503. Computers in Statistical Data Analysis. Cr. 3

Prereq: some computer terminal experience; one course in statistics. No credit for computer science minors or majors. Student computer account required. Basic concepts of correlation, testing hypotheses; chi square, t and f statistics; linear regression; statistics packages such as SPSS, SAS, or BMD; understanding and interpreting the output. (I)

504. Introduction to Programming. Cr. 4

Prereq: graduate standing and placement out of MAT 180. Only two credits after any other programming course; no credit for computer science minors or majors. Student computer account required. Introduction to programming using Pascal. (I)

506. Advanced Concepts in Computer Science. Cr. 4

Prereq: CSC 504. 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 or former 370. 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. (T)

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. (IE 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. 4

Prereq: CSC 371 or former 370, and 441. Offered for undergraduate credit only. Syntax, lexical analysis, grammars (Algol 60, PL/I, Pascal, ADA) and parsing; interpretation semantics (basic structures, axiomatic theory, data type and structures, declaration and specification), translation; execution semantics (flow of the control, structured theorem, expression and flow of data), parallel execution; block structure, procedure, side-effect, recursive procedure and definition (functional programming, LISP); program correctness (problem solving and programming). (T)

521. Artificial Intelligence Programming with LISP. Cr. 2

Prereq: CSC 371 or former 370. Student computer account required. Primarily for artificial intelligence students. Introduction to the LISP language; formulation and coding of non-numerical algorithms for digital computers using this language. (I)

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)

531. Computer Organization. Cr. 4

Prereq: CSC 441. Offered for undergraduate major credit only. Basic logic design with MSI and LSI; organization and structuring of major hardware components of computers; mechanics of information transfer and control within digital computer systems. (T)

537. (ECE 562) Mini- and Microcomputers. Cr. 4

Prereq: CSC 531, 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)

541. Computer Operating Systems. (ECE 564). Cr. 4

Prereq: CSC 371 or former 370, and 441 or ECE 468. Student computer account required. Offered for undergraduate major credit only. 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. (T)

542. Introduction to Computer Networking. Cr. 3

Prereq: CSC 541 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)

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 or former 370, MAT 204. Student computer account required. Basic geometrical concepts, graphics primitives, two-dimensional transformations, segmented files, windowing and clipping, camera models, and 3-D transformations. (Y)

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)

Material fee \$15 if computer work is required. Individual study as agreed on by student and supervising faculty. Primarily for material not covered in regular courses. (T)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

595. 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. (B)

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)

632. (ECE 665) Fault-Tolerant Computer Architecture. Cr. 4

Prereq: CSC 531 or ECE 568. Survey of current literature in fault-tolerant design and fault diagnosis of combinational circuits. Use of redundancy in the form of majority logic or interwoven logic to prevent errors in spite of certain types of faults. Consideration of graphical and calculus methods for determining fault-finding experiments. Multi-valued and threshold logic. (I)

638. Microprogrammed Computer Design. (ECE 565). Cr. 4

Prereq: CSC 531 or ECE 460. Student computer account required. Introduction to microprogramming techniques and discussion of their implementations. Consideration of control word formats and microinstruction coding. Use of microprogrammable computers to emulate other computers. Implementation of microprogramming, including control-store timing, capacity and cost. (I)

640. Engineering Design of Computer Operating Systems. (ECE 760). Cr. 4

Prereq: ECE 564 or CSC 541. 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. (Y)

651. Theory of Computation. Cr. 3

Prereq: CSC 520. Algorithm and function (partial and total); recursive functions; universal Turing machine; recursive program schemes and lambda calculus; control flow and data flow algorithms; function and execution equivalence; finite arithmetics and finite approximation (discrete and continuous approach). (Y)

654. Computer Graph Structures. Cr. 3

Prereq: CSC 520. Basic graph structures, undirected and directed. Graphs and multigraphs; computer representation of graph structures; primary relations; flow diagrams; data flow schemes; data structures. (B)

658. Analysis of Algorithms. Cr. 3

Prereq: CSC 371 or former 370. 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. (B)

661. Computational Algorithms: Analysis. Cr. 3

Prereq: MAT 204 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.

662. Matrix Computation I. (ECE 502). Cr. 4

Prereq: CSC 102 or 206 or equiv. and MAT 204 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 or former 370. 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. (T)

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)

699. 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 Environment. 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. (Y)

745. Parallelism and Concurrency in Computation. Cr. 3

Prereq: CSC 541, 645. Control flow and data flow programs; parallelization and some parallel architectures; execution time, speedup, efficiency, utilization and parallelizability degree of programs; synchronous and asynchronous model of execution and functionality of data flow programs; parallelizing compiler; concurrency in operating systems and programming languages; sequential processes, synchronization concepts, sharing resources and message passing; determinacy, deadlock and fairness. (I)

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. (I)

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)

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)

Student computer account required. (T)

799. Master's Essay Direction. Cr. 1-3

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)

813. Seminar in Information Systems. Cr. 2-4(Max. 16)

Prereq: CSC 713. Student computer account required. Familiarization with the state-of-the-art; introduction to research. (I)

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)

845. Seminar in Programming Languages, Compiler and Parallelism. Cr. 3

Prereq: CSC 745. Discussion of current papers in the field; student reports. (B)

862. Seminar in Matrix Computation. Cr. 3

Prereq: CSC 762. Discussion of current papers in the field; student reports. (B)

871. Seminar in Database Management Systems. Cr. 3

Prereq: CSC 771. Discussion of current papers in the field. (I)

880. Seminar in Artificial Intelligence. Cr. 3

Prereq: CSC 780. Student computer account required. Current research topics in the area. (I)

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

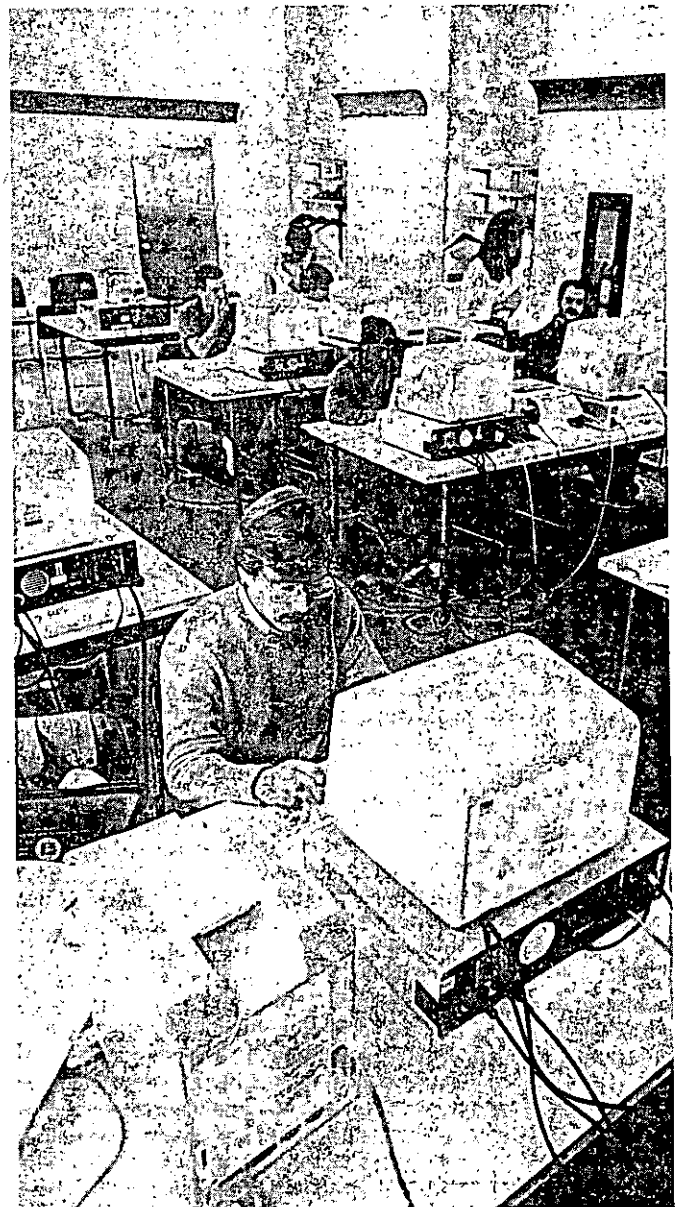
Prereq: CSC 788. Discussion of current papers from the field. (B)

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.)

Offered for S and U grades only: Student computer account required. (T)



CRIMINAL JUSTICE

Office: 701 - 711 Mackenzie Hall

Chairperson: Marvin Zalman

Academic Services Officer: Mary A. Serowik

Professor

Louis L. Friedland (Emeritus)

Associate Professors

Donald A. Calkins, Marvin Zalman

Assistant Professor

Thomas M. Kelley

Lecturer

Thomas M. Mieczkowski

Graduate Degree

Master of Science in Criminal Justice

The 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, security, 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 13. 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, Department of Criminal Justice. 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 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 courses (see below) and electives, as described in the student's *Plan of Work* and the satisfactory completion of either a master's thesis, master's essay and comprehensive examination, or master's comprehensive examination. All course work must be completed in accordance with the academic procedures of the College and Graduate School governing graduate scholarship and degrees, pages 190 and 20-28, respectively. Students should also obtain a copy of the Criminal Justice Department's Guidelines for graduate policies and procedures. The degree is offered as either a Plan A, Plan B, or Plan C option, as follows:

Plan A requires 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 requires 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 requires thirty-two credits of course work and a comprehensive examination in the areas of research/quantitative methods, administrative/organizational theory, and two selected elective areas.

CORE COURSES:

	credit
CRJ 701 - Contemporary Criminal Justice	3
CRJ 586 or P S 766	
- Research Methods	3
- Research Methods in Policy and Politics	3
* CRJ 614 or P S 563	
- Quantitative Methods	3
- Statistics and Data Analysis in Political Science I	4
CRJ 763 or P S 732	
- Seminar: Criminal Justice Administration	3
- Organization Theory and Behavior	3
CRJ 675 or P S 612	
- Administrative Law in Criminal Justice	3
- Administrative Law and Regulatory Politics	3
† P S 733 or P S 734	
- Public Budgeting and Finance	3
- Public - Personnel Management	3
<i>One of the following:</i>	
CRJ 623 - Advanced Law Enforcement Administration	3
CRJ 634 - Correctional Administration	3
CRJ 652 - Security 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

* If a student has previously completed a basic course in applied statistics, the graduate adviser may require the student to take an advanced course; for example: P S 664.

† This public administration requirement is waived for students in Plan A (thesis plan).

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

The Department of Criminal Justice 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.

COURSES OF INSTRUCTION¹ (CRJ)

506. Comparative Criminal Justice Systems. Cr. 3

No credit after former CRJ 650. Selected criminal justice systems in other nations. (B)

508. History of American Criminal Justice. (HIS 531) (HIS 731). Cr. 3

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)

515. Introduction to Forensic Science. (ANT 518). Cr. 3

Prereq: CRJ 101 or ANT 211. Introductory survey of the natural, medical, and behavioral sciences with regard to forensic applications. Topics include: toxicology, forensic pathology, fingerprints, ballistics, analysis of the human skeleton, body fluid identification. (B)

528. Pro-Seminar: Evidence. Cr. 3

Prereq: minimum of 9 credits in criminal justice. Admissibility of evidence in courtroom proceedings, problems of hearsay, real, and administrative evidence, circumstantial and testimonial evidence; and application to law enforcement officers. (Y)

534. Community Based Corrections. Cr. 3

Prereq: CRJ 270. History, theory and practice of community based corrections. Probation and parole; halfway houses and other residential correctional facilities. Jails as community correctional centers. Legal issues. International perspectives. The future of community corrections. (B)

552. Advanced Security Topics. Cr. 3

Prereq: CRJ 351. No credit after former CRJ 530. The study of specialized security systems that present unique problems or require advanced technology. Topics may include: the security of computer systems and data banks; transportation security; security of governmental facilities; bank security. (B)

554. Terrorism and the Urban Society. Cr. 3

Prereq: CRJ 351. No credit after former CRJ 510. Motivation, goals and typology of terrorist groups and individuals. Terrorism in domestic and international law. Governmental response; martial law; declarations of emergency, contingency planning, evacuations.

Industrial concerns to terrorism. Roles of local police and federal agents. Hostage negotiations. Improving response to dealing with potential terrorist situations. (B)

560. Strategies in Crime Control. Cr. 3

Substantive criminal justice literature in interpreting basic issues of crime control strategies, implicit and explicit, in public policies as they relate to theories of crime causation, theories of deterrence and prevention of criminal behavior. (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. 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. (Y)

572. Criminal Law. Cr. 4

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 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)

586. Research Methods. Cr. 3

Planning and design for research in criminal justice and related fields. Application of selected methods. (Y)

595. Special Topics in Criminal Justice. Cr. 3 (Max. 9)

Prereq: CRJ 201. No credit for repeated section. (Y)

600. Field Studies. (US 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)

614. Quantitative Methods. Cr. 3

Prereq: graduate standing; CRJ 613. Application and analysis of descriptive and inferential statistics in criminal justice planning, research and evaluation. (Y)

623. Advanced Law Enforcement Administration. Cr. 3

Prereq: CRJ 201. Police-management problems; organization and objectives, planning, public relations and support. (B)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

625. Labor Relations Law in a Criminal Justice System. Cr. 3
Prereq: P S 629 or equiv. Development of police labor organizations, statutory requirements, administrative law precedents established particularly in Michigan. (I)

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)

646. Volunteerism in Criminal Justice. Cr. 3
History, philosophy and structure of volunteer programs in policing, juvenile and adult probation and corrections. Roles of volunteers. Dynamics of personal change. Administration of volunteer programs. (I)

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 and important 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)

736. Seminar: Criminal Justice Administration. Cr. 3
Basic and in-depth analysis of advanced management theories, concepts and techniques as they apply to the criminal justice system. Case method techniques employed. (Y)

778. (SOC 880) Seminar in Deviance and Criminology. Cr. 3
Prereq: introductory course in the particular field. (I)

790. Directed Study. Cr. 3
Prereq: 24 graduate credits in major. (T)

799. Master's Essay Direction. Cr. 1-3
(T)

EAST EUROPEAN STUDIES

Program Coordinator: Professor Frank J. Corliss, Jr.

Office: 443 Manoogian

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 Slavic and Eastern languages. In special cases, the field selected will be that of the undergraduate major. A particular combination of courses will be decided in consultation with the graduate adviser and will depend upon the student's interests and previous preparation.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13.

Candidacy must be established by the time twelve credits have been earned.

DEGREE REQUIREMENTS: The Master's degree is offered in the department only as a Plan A option:

Plan A: Thirty-two credits in course work including a total of 12 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 Slavic and Eastern Languages, Economics, Geography, History, Political Science, and Anthropology. See Program Coordinator for list of eligible courses. Substitutions may be made only with the approval of the graduate adviser.

An interdepartmental committee will advise the chairperson of the department of Slavic and Eastern Languages in assisting the student to work out his or her program of study.

Before beginning research for the thesis, the student must have acquired knowledge of at least one East European language appropriate to 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 Slavic and Eastern 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. For more information, transfer credit is subject to approval by the graduate adviser.

ECONOMICS

Office: 960 Mackenzie Hall

Chairperson: Li Way Lee

Professors

David I. Fand, Thomas J. Finn, Jr., I. Bernard Goodman, Michael R. Haines, Mark L. Kahn (Emeritus), Jay H. Levin, John M. Mattila (Emeritus), John D. Owen, Douglas S. Paauw, Karl W. Roskamp, Lawrence H. Seltzer (Emeritus), Wilbur R. Thompson (Emeritus), C. Emery Troxel (Emeritus)

Associate Professors

R. King Adamson (Emeritus), Allen C. Goodman, James L. Hamilton, Li Way Lee

Assistant Professors

Robin A. Dubin, Anthony Owusu-Gyapong, Carlos E. Santiago, Allen J. Scafuri, Marlene A. Smith, Michael H. Thomson

Lecturers

Harjit Arora, Gautam Bose, Pami Dua, Paul Holtgreive

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 227; and Master of Arts in industrial relations under Industrial Relations, page 31)

Economists should have broad intellectual interests as well as technical expertise. Though most economics graduate students have undergraduate degrees in economics, many have 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 31.

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 13. 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 190 and 20-28, 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, including economics 600, 605, and 610 or the equivalent. 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 oral 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 13. 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 and quantitative Graduate Records 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 190 and 20-28, respectively. Advancement to candidacy will usually require at least two 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 eight fields: quantitative methods; industrial organization; international economics; labor and human resources economics; public finance; economic history and 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, 705, 706 (all of which are to be taken in the first year), 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. Demonstration of basic competence in the history of economic thought (Economics 704).

5. Completion of a Doctoral Dissertation Outline and Record of Approval. This form must be approved by the student's dissertation advisory committee, the Chairperson of the Graduate Committee in Economics, and the Dean of the Graduate School.

Minor Requirements: Students must complete at least eight credits in a minor field outside economics.

Cognate Fields: One cognate field from another discipline may be substituted for one of the two elective fields (see Degree Requirements, 2, above) with prior departmental approval.

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, capacity for independent and creative research, and ability to perfect and follow through on an appropriate research design.

Final Lecture: Upon acceptance of the dissertation, the student must deliver a final lecture in accordance with Graduate School regulations.

Fellowships, Assistantships and Awards

Teaching and research assistantships providing tuition and stipends are available each year to highly qualified graduate students. Scholarships are also available. Preference in selection for these positions and stipends is given to doctoral students. Applications for Semester appointments should reach the Department by February 15. Later applications will be considered if positions are available. Applications must include verbal and quantitative Graduate Records 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 fellowships and scholarships awarded by the Graduate School (see page 30), foundations, professional organizations, government agencies, and corporations.

Two departmental awards have been created to encourage research and publication in economics: the *Samuel M. Levin Essay Award*, which carries a prize of \$500; the *Mendelson Research Grants* provide stipends to selected doctoral students working on their dissertations.

COURSES OF INSTRUCTION (ECO)

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.

502. Introduction to Mathematical Economics. Cr. 4

Prereq: ECO 500 and MAT 201 or consent of instructor. 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.

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 investment, and capital formation.

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.

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.

¹ See page 461 for interpretation of numbering system, signs and abbreviations.

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. (F)

701. Microeconomic Theory II. Cr. 4
Prereq: ECO 700. Continuation of ECO 700. (W)

704. History of Economic Thought. Cr. 4
Advanced inquiry into the development of economic doctrine. (Y)

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 502 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. (Y)

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. (Y)

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)

522. Economics of Transportation. Cr. 4
Prereq: ECO 102. Principles of transportation economics. Inter-city transportation; competition among rail, highway, and air transport; the impact of government regulations. Problems of metropolitan transportation systems. (I)

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, public regulation of industry. Rationale for regulation, 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 Economic Relations. 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. (F)

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 Economics

544. Economics of Social Welfare. (S W 575). Cr. 4

Prereq: ECO 102 or consent of instructor. Economics of education, unemployment, poverty, and discrimination. Emphasis on analyzing the interests of both taxpayers and beneficiaries of government programs in order to deal with their economic problems. (I)

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; public relations policies. (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 (monetary 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 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 of 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. 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. Cr. 3

Prereq: ECO 102 or consent of instructor. Role of taxation in market economy, its nature and historical development; principles of taxation; incidence of taxes; U.S. federal tax structure; influence of U.S. federal taxes on resource allocation, income distribution, economic stability and growth. (Y)

551. Public Finance: Expenditures. Cr. 3

Prereq: ECO 102 or consent of instructor. Role of government in market economy; public goods; decision processes in the public sector voting rules; nature of public expenditures and their historical development; influence of government expenditures. Problems of public debt. (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 714 research problems in public finance. (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. No credit after ECO 361. Comparative analysis of capitalism, socialism, communism, emphasis on differences in pricing, allocation of resources, functional and personal distribution of income, economic planning. (Y)

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)

764. Seminar in the Economic Development of the United States. Cr. 4

Prereq: consent of instructor. Economic development, industrialization, and modernization of the United States, from colonial times to the present with focus on industrial development. (I)

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)

571. Money and Banking II. Cr. 3

Prereq: ECO 505 and 570. Structure and functioning of money and capital markets, objectives and techniques of central banking, use and limitations of monetary policy as a tool for furthering full employment, management of public debt, avoidance of inflation or deflation. (I)

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 and 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

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: 431 State Hall

Chairperson: Suzanne Ferguson

Associate Chairperson: Robert M. Strozier II

Professors

Samuel Astrachan, Alvin B. Aubert, Charles M. Baxter, Esther M. Broner, Chester H. Cable (Emeritus), Suzanne Ferguson, Samuel A. Golden (Emeritus), Arnold L. Goldsmith, C. Yates Hafner, Patricia E. Hernlund, Daniel J. Hughes, Thelma G. James (Emerita), Orville F. Linck (Emeritus), Arthur F. Marotti, Ralph L. Nash, Emilie A. Newcomb (Emerita), Joseph Prescott (Emeritus), John R. Reed, Herbert M. Schueller (Emeritus), Alfred Schwarz, Leonard W. Tennenhouse, Vern Wagner (Emeritus), Marilyn L. Williamson, Beongcheon Yu

Associate Professors

Nancy B. Armstrong, Michael J. Bell, Alexander Brede (Emeritus), Barbara A. Couture, Walter F. Edwards, Bradford S. Field, Jeanne A. Flood, John C. Franzosa, Alva A. Gay (Emeritus), Henry L. Golemba, Joseph A. Gomez, Isabel Graham (Emerita), David S. Herreshoff (Emeritus), Terrance J. King, Janet C. Langlois, Steven Lapointe, Bernard Levine, Donald MacDonald (Emeritus), Jay W. McCormick (Emeritus), William E. Mockler (Emeritus), Ross J. Pudałoff, Amy K. Richards (Emerita), Michael H. Scrivener, Edward Sharples, Clifford H. Siskin, Elizabeth S. Sklar, Paul Sporn, Robert M. Strozier II, Travis E. Tritschuh (Emeritus), Stephen H. Tudor, Anca Vlasopolos, Richard R. Werry (Emeritus), Robert B. Winans

Assistant Professors

Ellen Barton, Robert Burgoyne, Bernyce Cleveland (Emerita), Jerry Herron, Martin Irvine, Gerald MacLean, Renata M. Wasserman

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 the English language, in English, American, and comparative literature, and in literary and composition theory. Applicants for the M.A. degree may pursue special interests, such as creative writing, folklore, film, or linguistics. 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 M.A. adviser. The Ph.D. programs are designed to develop the applicant's potential as a scholar, critic, and teacher of language and literature. Graduate study in English, however, has also been shown to be excellent preparation for a variety of employment situations, in business and the professions.

* See page 208.

Master of Arts With a Major in English

Admission to this program is contingent upon admission to Graduate School; for requirements, see page 13. Students who register as graduate majors in English should consult the department 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 minor in English and some coverage of the major periods of English and American literature will be asked to take courses as prerequisites before receiving credits toward the master's degree. The Aptitude and Advanced Sections of the Graduate Record Examination are recommended for all applicants prior to admission, especially those whose achievement in English may not be fairly represented by undergraduate honor point average.

DEGREE REQUIREMENTS: The Master of Arts degree is offered in a Plan A or Plan B option. All course work must be completed in accordance with the academic procedures of the College and Graduate School governing graduate scholarship and degree requirements, pages 190 and 20-28, 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 reasonably complete knowledge of English and American literature. Outside this general requirement, each individual program can accommodate particular interests and needs. It must include, however, at least four 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 M.A. adviser, the student may submit a piece of work of imaginative writing as an essay or thesis.

Foreign Language Requirement: Applicants for the degree must pass an examination in one foreign language, usually French, German, or Spanish. Other languages may be substituted by consent of the Graduate Committee.

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 the petition of the student and approval of the Graduate Committee, over-age credits may be revalidated.

Doctor of Philosophy With a Major in English

The Ph.D. program in English offers advanced studies in such fields as literary theory and criticism, theory of fiction, folklore, and English linguistics, in addition to the standard areas of British and American literature. 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 13. 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 Chairperson of the Department Graduate Committee 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 Aptitude and Advanced Sections 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 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 190 and 20-28 respectively.

Foreign Language Requirement: This requirement may be met in one of three ways: (1) by passing an in-depth examination in one language (usually French or German); (2) by passing examinations in two languages (usually French and German); (3) by passing an examination in one language and taking two courses in Anglo-Saxon.

Course Requirements: The Department does not require specific courses; however, the student's graduate-level course work must reflect broad coverage of major periods, genres, and authors, regardless of examination subjects and area of specialization. The majority of the courses must be numbered 600 and above; exceptions may be approved by the departmental doctoral adviser with the permission of the Graduate School.

The department requires a minor of eight credits in course work on the graduate level in a related area, usually outside the department.

Final Qualifying Examination: The examination, which must be taken within one calendar year after the completion of course work, consists of:

1. A written examination in four areas, three chosen from among eight designated periods, the fourth in an area of the student's choice. Students selecting the composition option will take two examinations from the designated literary periods, and two from a list of specialized examination areas.
2. An oral examination to be taken after the student has passed the written examination.

A final oral presentation, after the dissertation has been completed, is also required. For a description of this, see page 27.

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.

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.

COURSES OF INSTRUCTION¹ (ENG)

- 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. (T)
- 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. (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)
- 509. Topics in Literary Criticism. Cr. 3(Max. 9)**
Close reading of one or more major critics, the close reading of selected critical texts, or criticism from a literary period. (Y)
- 510. Literature of the Middle Ages. Cr. 3**
Major works and genres of Old and Middle English; mostly in translation. (B)
- 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. (B)
- 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*. (B)
- 514. Introduction to Old English. (ENG 610). Cr. 3**
The fundamentals of language and grammar and the literary analysis of Old English texts. (B)
- 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. (ENG 710). 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* (B)

¹See page 461 for interpretation of numbering system, signs and abbreviations

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. (B)
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. (B)
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)
534. **Topics in British Literature. Cr. 3(Max. 9)**
British literature from specific perspectives such as generic or thematic. Writers from more than one period may be considered. Topics to be announced in *Schedule of Classes*. (I)
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. (I)
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. (B)
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, pragmatists.

543. **Topics in American Literature Through the Nineteenth Century. Cr. 3(Max. 9)**
Generic or thematic perspectives on the literature of the period. Humor, the frontier, travel, Puritanism, transcendentalism, autobiography. Topics to be announced in *Schedule of Classes*.
545. **Modern American Literature. Cr. 3**
A survey of major writers, themes, movements since 1914: Steinbeck, Frost, Eliot, O'Neill, Anderson, Hemingway, Faulkner; the novel, wars, modernism and post-modernism.
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*.
548. **Topics in Afro-American Literature. Cr. 3(Max. 9)**
Thematic, generic or historical perspectives: topics such as early black writers, Harlem Renaissance, Afro-American poetry, contemporary black writers. Topics to be announced in *Schedule of Classes*.
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*.
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*.
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.
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.
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*.
560. **(ANT 608) Studies in Folklore. Cr. 3**
Basic concepts, methods, and issues of folklore study. Comparative and interdisciplinary approach to problems of definition, folk creation, performance, transmission, and cultural, historical, psychological and literary significance.
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 art. Topics to be announced in *Schedule of Classes*.
570. **Introduction to English Linguistics. (LIN 570). Cr. 3**
Basic concepts and methods of modern linguistics and their application to the study of the English language.
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, psycholinguistics approaches, text grammar. Topics to be announced in *Schedule of Classes*.

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. (Y)

574. (ANT 530) 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. (Y)

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)

580. (ENG 305) Technical Communication I: Report Writing. Cr. 3

Prereq: passing of English Proficiency exam or ENG 108. Instruction in basic technical writing skills. Requirements include writing letters and memos, summaries, technical instructions, proposals, and reports. Topics include: audience and purpose analysis, visual support of texts, and formatting. (T)

581. (ENG 306) Technical Communication II: Writing and Speaking. Cr. 3

Prereq: passing English Proficiency exam or ENG 108; 580. Continuation of technical reporting techniques introduced in ENG 580, emphasizing instruction and practice in oral technical reporting. Requirements include: process demonstrations, mechanism descriptions; press conferences, and a group project culminating in a written feasibility report and formal oral presentation. (T)

582. Internship Practicum. Cr. 3(Max. 6)

Prereq: junior or senior standing. Open only to undergraduates. 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)

587. Poetry Writing Workshop. Cr. 3(Max. 6)

Prereq: ENG 381, 382, or 383; or consent of instructor after submission of manuscript. The writing of poetry, conducted on a seminar basis; discussion and criticism of the work of students in the course. Frequent individual conferences. (Y)

588. Fiction Writing Workshop. Cr. 3(Max. 6)

Prereq: ENG 381, 382, or 383; or consent of instructor after submission of manuscript. The writing of fiction, conducted on a seminar basis; discussion and criticism of the work of students in the course. Frequent individual conferences. (T)

589. Writing for Theatre, Film and Television. (THR 513). Cr. 3 (Max. 6)

Prereq: ENG 383 or consent of instructor. Comparative study of scripts for stage, radio, television and motion pictures; practice in writing an original script or essay on some phase of contemporary dramatic form. Actual production of some scripts in experimental theatre and radio studios. (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)

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*. (I)

610. (ENG 514) Introduction to Old English. Cr. 3

The fundamentals of language and grammar and the literary analysis of Old English texts. (B)

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. (Y)

702. Studies in the Theory of Composition. Cr. 4(Max. 16)

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*. (B)

703. Survey of Research in Writing. Cr. 4

Analyzing and evaluating research and research methods in reading, cognitive psychology, rhetoric, linguistics, composition, and other areas related to writing. (B)

704. The Teaching of Writing. Cr. 4

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. (B)

705. Studies in Criticism. Cr. 4(Max. 12)

Analysis of critical texts and ideas in specific writers and periods. Topics to be announced in *Schedule of Classes*. (I)

710. (ENG 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*. (B)

711. Middle English Language and Literature. Cr. 4

Development of Middle English language, dialects, c.1150 to c.1450. Selected literature. (I)

712. Studies in Medieval Literature. Cr. 4(Max. 12)

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

Special problems in current scholarship and criticism. (I)

716. Studies in Renaissance Literature. Cr. 4(Max. 12)

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. (1)
- 720. Studies in Restoration and Eighteenth Century Literature. Cr. 4(Max. 12)**
Studies of particular authors or genres. Topics to be announced in *Schedule of Classes*. (1)
- 725. Studies in Romantic Literature. Cr. 4(Max. 12)**
Topics, such as Wordsworth and Coleridge; crisis and triumph of the romantic imagination, to be announced in *Schedule of Classes*. (1)
- 726. Studies in Victorian Literature. Cr. 4(Max. 12)**
Poetry, non-fictional prose, drama, fiction. Topics to be announced in *Schedule of Classes*. (1)
- 730. Studies in Twentieth Century Literature. Cr. 4(Max. 12)**
Problems in American or British literature. Topics to be announced in *Schedule of Classes*. (1)
- 736. Studies in Poetry. Cr. 4(Max. 12)**
Advanced study of poetry. Topics to be announced in the *Schedule of Classes*. (1)
- 737. Studies in Drama. Cr. 4(Max. 12)**
Advanced study of drama. Topics to be announced in the *Schedule of Classes*. (1)
- 738. Studies in the Novel. Cr. 4(Max. 12)**
Advanced study of the novel. Topics to be announced in *Schedule of Classes*. (1)
- 739. Studies in English Literature. Cr. 4(Max. 12)**
Advanced studies in English literature from specific perspectives such as generic, historical or thematic. Topics to be announced in *Schedule of Classes*. (1)
- 740. Studies in American Literature Through the Nineteenth Century. Cr. 4(Max. 12)**
Advanced study of such topics as Puritanism, transcendentalism, Hawthorne and Melville, American realism. Topics to be announced in *Schedule of Classes*. (1)
- 741. Studies in American Literature of the Twentieth Century. Cr. 4(Max. 12)**
Advanced study of modern American poetry, prose and drama. Topics to be announced in *Schedule of Classes*. (1)
- 742. Studies in American Literature. Cr. 4(Max. 12)**
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*. (1)
- 755. Studies in Comparative Literature. Cr. 4(Max. 12)**
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*. (1)
- 759. Topics in English and American Literature. Cr. 4(Max. 12)**
Advanced studies in English and American literature from specific perspectives such as generic, historical or thematic. Topics to be announced in *Schedule of Classes*. (1)
- 767. Studies in Folklore and Folklife. Cr. 4(Max. 12)**
Prereq: previous course in folklore or consent of instructor. 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*. (1)

771. Advanced Studies in Linguistic Structure. (LIN 771). 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*. (1)

772. Advanced Studies in Language Use. (LIN 772). 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*. (1)

777. Discourse Analysis. (LIN 777). 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*. (1)

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. (1)

799. Master's Essay Direction. Cr. 1-3

Prereq: consent of adviser. (1)

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

Prereq: consent of adviser. (1)

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

Prereq: consent of doctoral adviser. Offered for S and U grades only. (1)



GEOGRAPHY AND URBAN PLANNING

Office: 225 State Hall

Chairperson: Robert D. Swartz

Director of Urban Planning Program: George J. Honzatko

Professors

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

Harold Bellamy, Rondal Downing, Robin Dubin, Roy Flemming, Mel Ravitz, Sue Smock, 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. The curriculum is flexible and every attempt is made to tailor individual courses to the goals of the student. Informal

sessions are held 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 13. 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 650 (seven credits) or their equivalents. Two oral examinations are required: a preliminary examination and a final examination upon completion of the thesis or essay. 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 20-28 and 190, respectively.

Master of Urban Planning

Admission to this program is contingent upon admission to the Graduate School, for requirements, see page 13.

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 twelve 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 20-28 and 190, 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.

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.

COURSES OF INSTRUCTION¹

Geography (GEG)

520. Western Europe. Cr. 4

Analysis of non-communist European countries. Emphasis on population changes, resource problems, industrial location, urbanization, regional development, and emerging economic and political unities. (I)

525. Eastern Europe. Cr. 4

Poland, Czechoslovakia, Hungary, Rumania, Bulgaria, Yugoslavia, Albania: economic development, nationalism, minorities; problems with the USSR and relations with the West. (I)

530. Soviet Union. Cr. 4

Problems of location and environment; production problems in agriculture and industrial development; transportation difficulties; national minority issues; the Soviet Empire and global goals and confrontations. (I)

560. The United States. Cr. 4

Analysis of regional differences of the coterminous states with special emphasis on physiography. Overview of cultural differences. (I)

565. Regions of Detroit. Cr. 4

Delineation, identification, and analysis of cultural regions in Detroit. Topics include: the regional concept; problems of delimitation; territoriality; historical development; social, economic, and ethnic regions; social change; and future development. (Y)

570. Urban Canada. 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)

613. Advanced Urban Geography. (U P 601). Cr. 4

Selected themes in urban geography. Topics include: 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)

615. Internal Structure of the City. (U P 542). 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). Cr. 4

The location of industry in theory and practice, analysis of manufacturing industries and selected industrial regions. The industrial location in urban and regional development.

628. Marketing Geography. (U P 562). Cr. 4

Factors underlying retail location and shopping center development; evaluation of population, income levels, access and competition; location decisions; techniques applicable to retail location; potential/rent-up/sell-out estimates for retail units, hotels, developments, recreation facilities, office buildings; retail impact on urban land use; crime and commercial location; considerations for elderly in commercial locations.

630. (CSC 601) Computer Analysis of Satellite Imagery -- Remote Sensing. Cr. 3

Prereq: 15 credits in geography or consent of instructor. Student computer account required. Topics include remote sensing, aerial photography, landsat imagery, and digital image processing as applied to land use, vegetative cover and land management.

631. Political Geography and Geopolitics. Cr. 4

Global geopolitical patterns and theories; environmental factors and resources issues; location and conflicts between states.

632. Historical Geography of the United States. Cr. 3

Analysis of factors underlying the settlement and development of the United States through the early twentieth century. Themes include spread of European settlement, emergence of cultural regions and diffusion of cultural traits, growth of regional economies and inter-regional trade, and emergence of a national urban system.

635. Geography of Ethnic Groups in the United States. Cr. 4

Analysis of America's ethnic structure; concepts, theory and methods relating to the meaning of ethnicity, migration, territoriality, socio-economic and residential mobility; ethnic community formation and extension, ethnic Detroit.

642. (U P 632) Quantitative Techniques I. Cr. 4

Statistical inference; emphasis on applications including control tendency, dispersion, hypothesis testing, correlation and regression.

650. Field Geography. (U S 603). Cr. 3-7

Prereq: two courses in geography or consent of instructor. Geographic field training, including mapping, interviewing, field observation, data gathering, problem analysis, and report preparation. Work undertaken in a variety of situations, includes urban and rural land use, industrial and commercial locations, urban social change, agriculture, soils and landforms.

652. Independent Field Study. (U S 605). 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.

660. Internship in Applied Geography. Cr. 4

Prereq: 15 credits in geography; consent of instructor. Offered for 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.

665. Computer Assisted Mapping. Cr. 4

Science of computer assisted mapping and hands-on computer assisted map production; geo-management issues.

672. Computer Applications for Spatial Analysis. (U P 682). Cr. 4

¹ See page 461 for interpretation of numbering system, signs and abbreviations

Prereq: course in elementary statistics recommended. Introduction to computer software for spatial analysis, including spatial statistics, computer graphics, and computer cartography. (Y)

780. Seminar in Geography. Cr. 3
Philosophy and methodology of geography. New developments and recurrent problems in geographic thought. (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)

601. (GEG 613) Advanced Urban Geography. 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. 4
Physical, social, and economic aspects of housing. Topics include new construction as well as the rehabilitation of existing housing stock. (Y)

651. Regional Development. Cr. 4
Regional planning and development concepts. Influences of transportation, resources, economic activity, and urban spatial agglomerations on regional growth. (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 Analysis

542. (GEG 615) Internal Structure of the City. 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. 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. (Y)

562. (GEG 628) Marketing Geography. 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)

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)

612. Planning Studies and Methods. Cr. 4
Economic base, population, and land use studies. Approaches used to solve selected community development problems. (Y)

632. Quantitative Techniques I. (GEG 642). Cr. 4
Statistical inference: emphasis on applications including control tendency, dispersion, hypothesis testing, correlation and regression. (Y)

652. Transportation and Planning. Cr. 4
Introduction to the role of transportation in the planning process involving both regional and urban considerations. (Y)

682. (GEG 672) Computer Applications for Spatial Analysis. Cr. 4
Prereq: course in elementary statistics recommended. Introduction to computer software for spatial analysis, including spatial statistics, computer graphics, and computer cartography. (Y)

702. Community Planning Workshop. Cr. 4
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)

742. Seminar in Land Use Planning. Cr. 3
Analysis of development plans for new and existing communities; selected topics. (B)

822. 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)

Planning Implementation

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)

645. (SOC 655) Dynamics of Urban Social Action. Cr. 3
Exploration of the nature and forms of social action. Practical examples of organization and planning considered along with the uses of power, non-violence, violence and the relationships of these actions to social change. (I)

665. Land Use Controls. Cr. 2-3
Techniques to guide land development. Concepts in zoning, subdivision regulations, timing and sequence of land development. (Y)

715. Financial Aspects of Urban Planning. Cr. 3-4
Costs and revenues of urban development in relation to land uses. Study of financial impact evaluations and methods of financial analysis. (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)

630. (CSC 601) Computer Analysis of Satellite Imagery -- Remote Sensing. (GEG 630). Cr. 3
Prereq: 15 credits in geography. Student computer account required. Topics include remote sensing, aerial photography, landsat imagery, and digital image processing as applied to land use and cover and land management. (B)

640. Planning Issues. Cr. 2-4
Studies of urban policy issues affecting land use. Social and economic determinants of the physical composition of urban areas. (B)

760. Seminar. Cr. 2-3(Max. 6)
Study and discussion of selected aspects of urban planning. Topics to be announced in *Schedule of Classes*. (B)

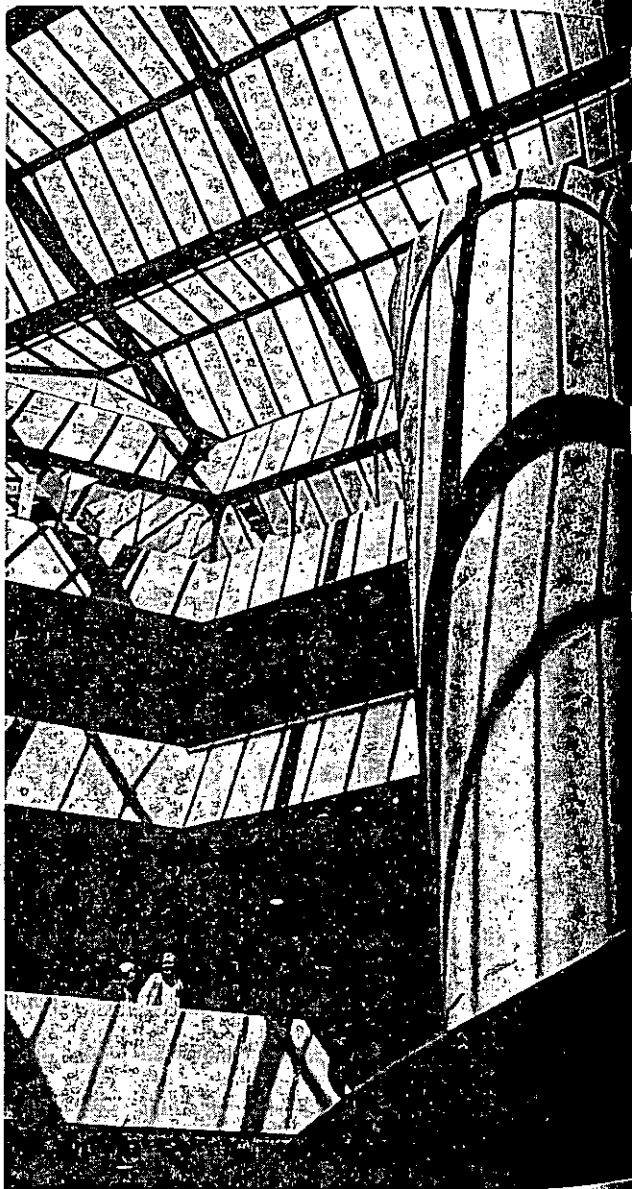
770. Projects in Urban Planning. Cr. 2-4(Max. 6)
Development and application of research design to specified urban problems. (B)

790. Directed Study. Cr. 2-4(Max. 6)
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.

899. Master's Thesis Research and Direction. Cr. 1-8(8 req.)
Prereq: consent of adviser.



GEOLOGY

Office: 201 Old Main
Chairperson: Robert B. Furlong

Professors

Egbert G. Driscoll, Jr., Robert B. Furlong, Hugo Mandelbaum (Emeritus), Andrew J. Mozola, (Emeritus), Willard H. Parsons (Emeritus), Luciano B. Ronca

Instructors

John M. Zawiskie

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 13. 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 in order to 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 and Awards

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.

Awards: The Geology Graduate Student Merit Award is presented each year to a graduate student who has excelled academically and who has made significant non-academic contributions to the Geology Department and/or the University. The award consists of a bronze plaque, a Brunton Compass, and the recipients name permanently inscribed and displayed in the Main Office of the Department of Geology.

COURSES OF INSTRUCTION¹ (GEL)

- 512. Principles and Methods of Geochemistry. Cr. 4**
Prereq: GEL 316, 340 and two semesters of college chemistry or consent of instructor. Material fee as indicated in *Schedule of Classes*. Introduction to the chemistry of the earth and to the analytical techniques used by geochemists. Chemistry of common earth materials, reactions within these materials. (W)
- 513. Geology of Industrial Minerals and Rocks. Cr. 4**
Prereq: GEL 316 and 340. Material fee as indicated in *Schedule of Classes*. Origin, occurrence and the utilization of the industrial rocks and minerals. Local field trip. (B)
- 530. Statistical and Computer Methods in Geology. Cr. 4**
Prereq: consent of instructor. Student computer account required. Principles of statistics, probability and computer programming; application to the geological sciences; sampling procedures, population, confidence limits, regressions, correlations and time series, practical applications to geological problems. (B)
- 535. Geophysics. Cr. 4**
Prereq: consent of instructor. Gravitational field and isostasy; magnetic field and paleomagnetism; seismology; internal structure of the earth; absolute age determination; exploration geophysics. (W)
- 550. Geological Development of the World: North America. Cr. 4**
Prereq: GEL 330, 340 or consent of instructor. Tectonic setting, stratigraphy and sedimentological history of the world and especially North America from a regional viewpoint. General geological history of the continents. (B)
- 555. Geology of Fossil Fuels. Cr. 4**
Prereq: GEL 330, 340; 410 recommended or consent of instructor. Material fee as indicated in *Schedule of Classes*. The occurrence, origin, exploration and exploitation of petroleum, natural gas, coal, oil shale and tar sands. Interpretation of geophysical logs, well cuttings and reservoir potential. (F)
- 571. (BIO 571) Paleontology of Vertebrates. Cr. 4**
Prereq: GEL 102 or BIO 271 or consent of instructor. Material fee as indicated in *Schedule of Classes*. Morphology, phylogeny, evolution, paleoecology and paleogeographic distribution of vertebrate animals. Stratigraphic correlations based on vertebrate assemblages on a global scale. (F)
- 600. Optical Mineralogy. Cr. 4**
Prereq: GEL 316. Material fee as indicated in *Schedule of Classes*. Behavior of crystals in polarized light. Use of polarizing or petrographic microscope and its accessories. Determination of rock-forming minerals. (F)
- 620. Groundwater Geology. Cr. 4**
Prereq: GEL 420 and 340. Material fee as indicated in *Schedule of Classes*. Occurrence of groundwater in crystalline, sedimentary and unconsolidated terrains, qualitative and quantitative evaluations of aquifers. (B)
- 710. Sedimentary Petrology. Cr. 4**
Prereq: GEL 340, 600. Material fee as indicated in *Schedule of Classes*. Composition, classification, origin of sedimentary rocks. Structures, textures, mineral composition of rocks in thin section using the polarizing microscope. (B)
- 715. Biostratigraphy and Paleocology. Cr. 4**
Prereq: GEL 102, 345 and consent of instructor. Advanced study of the principles and procedures of stratigraphy. Theory and techniques for analyzing paleocommunities, assessment of paleontological models, large-scale patterns of faunal succession and extinction.
- 755. Regional World Geology. Cr. 5**
Prereq: GEL 330, 340 or consent of instructor. Tectonic, stratigraphic and sedimentologic history of the world, focusing on North America. Associated laboratory involves student presentation in seminar format.
- 762. Seminar in Geology. Cr. 2-4(Max. 8)**
Prereq: consent of instructor. Selected fields such as volcanology, oceanography, paleontology, groundwater. Topics to be announced in *Schedule of Classes*.
- 765. Methods of Field Research. Cr. 1-10(Max. 10)**
Prereq: consent of instructor and adviser. Field methods in surface and subsurface geology. Usually conducted in field.
- 790. Directed Study in Geology. Cr. 2-8(Max. 8)**
Prereq: written consent of instructor, adviser, graduate officer.
- 791. Directed Study in Paleontology. Cr. 2-6**
Prereq: written consent of instructor, adviser and graduate officer.
- 792. Directed Study in Petrology. (0,2-12). Cr. 2-6**
Prereq: written consent of instructor, adviser and graduate officer.
- 793. Directed Study in Pleistocene Geology. Cr. 2-6**
Prereq: written consent of instructor, adviser and graduate officer.
- 794. Directed Study in Geochemistry. Cr. 2-6**
Prereq: written consent of instructor, adviser and graduate officer.
- 795. Directed Study in Geophysics. Cr. 2-6**
Prereq: written consent of instructor, adviser and graduate officer. Theoretical studies assigned in one or more field of geophysics.
- 796. Research in Stratigraphy and Sedimentation. Cr. 3-4**
Prereq: consent of instructor and adviser. Independent work in laboratory or field.
- 797. Research in Geology. Cr. 3-4(Max. 8)**
Prereq: consent of instructor and adviser. Independent work in laboratory or field.
- 899. Master's Thesis Research and Direction. Cr. 1-8(8 req)**
Prereq: consent of adviser.

¹ See page 461 for interpretation of numbering system, signs and abbreviations

GREEK AND LATIN LANGUAGES AND LITERATURES

Office: 431 Manoogian Hall

Chairperson: Ernest J. Ament

Professor

Richard W. Minadeo

Associate Professors

Ernest J. Ament, Joel B. Itzkowitz, Kathleen McNamee, Kenneth R. Walters

Lecturer

Ladislav Szymanski

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.* The substance of these studies constitutes the cultural influence which has been the basis of Western civilization and education for over two thousand years. The prevalence of this background as a heritage to a wide variety of academic disciplines affords classics majors excellent preparation for a corresponding 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 where historical perspective is desired.

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 20-28 and 190, respectively.

Master of Arts in Classics

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13. 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.

*Graduate minor or cognate credit may be earned in Classics in English Translation and in Greek.

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-nine credits in course work, plus a three 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 in Latin

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13. 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-nine credits in course work, plus a three 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

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.

COURSES OF INSTRUCTION¹

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. (T)
- 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)
- 540. Greek Philosophy. Cr. 4.**
Prereq: GRK 260 or equiv. or consent of instructor. The origin and development of Greek philosophy as seen through representative selections from the Presocratics, Plato, Aristotle, Epicurus, and the Stoics. (I)
- 590. Directed Study. Cr. 1-4(Max. 8)**
Prereq: undergrad., written consent of chairperson; grad., consent of chairperson and graduate officer. (T)
- 620. Special Studies. Cr. 2-4(Max. 8)**
Prereq: GRK 360 or equiv. or consent of instructor. In-depth approach to special aspects of Greek studies, such as papyrology, paleography, or metrics. Topics to be announced in *Schedule of Classes*. (I)
- 625. Greek Comedy. Cr. 4**
Prereq: GRK 360 or equiv. or consent of instructor. Representative comedies from Old, Middle or New Greek Comedy to show the origin, development and social implications of the genre. (I)
- 645. Greek Literature of the Hellenistic Period. Cr. 4**
Prereq: GRK 360 or equiv. or consent of instructor. An introduction to such writers as Apollonius of Rhodes, Callimachus and Theocritus. (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*. (Y)
- 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*. (Y)
- 796. Research Problems. Cr. 1-4(Max. 8)**
Prereq: undergrad. major in Classics or Greek; consent of adviser. (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)

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. (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 their republican and imperial history. (I)
- 583. Lucretius. Cr. 4**
Prereq: LAT 260 or equiv. or consent of instructor. Study of the *De Rerum Natura*. (I)
- 586. Horace. Cr. 4**
Prereq: LAT 260 or equiv. or consent of instructor. Representative selections from the poetry of Horace. (B)
- 590. Directed Study. Cr. 1-4(Max. 8)**
Prereq: undergrad., written consent of chairperson; grad., written consent of chairperson and graduate officer. (T)
- 685. Latin Pastoral Poetry. Cr. 4**
Prereq: LAT 315 or equiv. or consent of instructor. Study of the *Eclogues* and *Georgics* or Virgil. (I)
- 689. Roman Satire. Cr. 4**
Prereq: LAT 315 or equiv. or consent of instructor. Studies in the satire of Horace, Persius and Juvenal. (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*. (Y)
- 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*. (Y)
- 796. Research Problems. Cr. 1-4(Max. 8)**
Prereq: undergraduate major in Latin, consent of adviser. (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)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

HISTORY

Office: 838 Mackenzie Hall

Chairperson: Alan Raucher

Professors

Thomas N. Bonner, William J. Brazill, Jr., R. V. Burks (Emeritus), Milton Covensky (Emeritus), Corinne Gitb, C. Norman Guice (Emeritus), Edwin C. Hall, Finley A. Hooper, Christopher H. Johnson, Harry Magoulias, Philip P. Mason, T. F. Mayer-Oakes (Emeritus), Richard D. Miles, Alan Raucher, Samuel F. Scott, Melvin Small, Goldwin Smith (Emeritus)

Associate Professors

Effie Ambler, John Bukowczyk, Charles K. Hyde, Marc Kruman, Richard Place, Monica Schuler, Stanley D. Solvick

Assistant Professors

Stanley Shapiro, Tyrone Tillery

Lecturer

Sandra VanBurkles

Graduate Degrees

Master of Arts—with a major in history

Doctor of Philosophy—with specializations in Europe, America, archival administration

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 two 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.

MASTER OF ARTS With a Major in History

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13. 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 3.0 must take the Aptitude and Advanced sections of the Graduate Record Examination.

Students entering the M.A. program in history will be required to take History 783 (Methods and Research in History) during the first year in the program, as well as at least one 800-level seminar, regardless of which Plan they pursue.

DEGREE REQUIREMENTS: A total of thirty-five credits is required for the master's degree in history. 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 190 and 20-28, respectively. These credits may be earned under *Plan A*, *Plan B*, or *Plan C* as follows:

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) earn a minimum of nine credits in courses numbered 700 or above, at least three of which must be in seminars, 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 fifteen credits in courses numbered 700 or above. Upon completion of course work, *Plan C* students must pass 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.

M.A. Programs in Archives and Law: The Department administers a graduate program in archival administration in cooperation with the Reuther Library of Labor and Urban Affairs, 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.

Archival Administration Certificate

Admission Requirements: Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13. 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. The certificate program requires successful completion of History 784 and 785, as well as two other courses from the following: History 782, 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 13. 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 and Advanced sections of the Graduate Record Examination and made their scores available to the Admissions Office. 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. The deadline for applications is March 1 and admission is always 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 190 and 20-28, 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 before scheduling the preliminary oral and written examinations. 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 graduate level work in the following geographical-chronological fields: ancient, medieval and Byzantine, early modern Europe, modern Europe, Africa (not for dissertation topic), America to 1877, and America since 1865. It also offers graduate level work in the following topical fields: Afro-American, American foreign relations, American immigration/ethnic, American legal and constitutional, American medicine, American women, archival administration, economic, labor, urban, French in North America (not for dissertation topic). Students beginning in the fall of 1987 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. Demonstrated reading knowledge of two foreign languages, or such alternative arrangement as the Director of Graduate Studies may approve in accordance with the statement on language requirements above;
2. Filing of an approved *Plan of Work* with the Graduate School before the completion of forty credits;
3. Completion of departmental and Graduate School residence requirements;

4. Completion of course work (not including dissertation credit) with an overall honor point average of 3.5 (4.0 equals A);
5. Satisfactory completion of written and oral examinations in four history fields. Cognate requirements will be waived through satisfactory completion of course work in the cognate field;
6. Submission and approval of the *Doctoral Dissertation Outline* and *Record of Approval* form.

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 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 demands and to submit the dissertation for certification to the Graduate School.

Fellowships and Assistantships

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 Chairperson of the Departmental Graduate Director.

Awards: The History Department offers annually the Alfred H. Research Grant Award to support research expenses of a graduate student engaged in historical research.

COURSES OF INSTRUCTION¹ (HIS)

500. **The French Empire in America. (HIS 700). Cr. 4**
Descriptive analysis of the French activity in North America and contribution to the future United States and Canada; relations with the British colonies.
501. **The Colonial Heritage in the United States to 1776. (HIS 701). Cr. 3**
Origins and development of colonial American culture to the revolution.
502. **Founding of the United States: 1776-1815. (HIS 702). Cr. 3**
The emergence of a new nation by way of revolution, constitution-making and the experiences of the Federalist and Jeffersonian eras.
503. **The American Republic on Trial: 1815-1861. (HIS 703). Cr. 3**
Emphasis on the political culture with special attention to immigration, the emergence of a market economy, slavery, social reform, war, Mexico, and the coming of the Civil War.
504. **Civil War and Reconstruction: 1861-1877. (HIS 704). Cr. 4**
Analysis of political military, social and economic developments.
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.

¹ See page 461 for interpretation of numbering system, signs and abbreviations.

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)

512. **Foreign Relations of the United States to 1920. (HIS 712). Cr. 3**

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. **Foreign Relations of the United States Since 1920. (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; transplanted immigrant culture; immigrant institutions; relationship between immigration, industrialization, and urbanization; racism, nativism, and immigrant 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.

529. **(ECO 549) American Labor History. 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. **(CRJ 508) History of American Criminal Justice. Cr. 3**

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. (Y)

534. **History of Rome. (HIS 734). Cr. 3**

Institutional and cultural development. (Y)

535. **The Hellenistic Period. (HIS 735). Cr. 3**

Social and economic developments, Alexandrian science, and Hellenization of the East from Alexander the Great to the Roman conquest of the eastern Mediterranean. (B)

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. 4**

Protestant and Catholic reformation seen in the context of social, economic, and political conditions of the sixteenth and seventeenth centuries. (B)

540. **Europe Under the Old Regime: 1660-1789. (HIS 740). Cr. 4**

Analysis of monarchical institutions and society; examination of the economic, social and intellectual changes that foreshadowed the age of revolution. (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. (B)

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)

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; particular attention to economic and social elements peculiar to Russia. (B)
550. **The Soviet Union. (HIS 750). Cr. 3**
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. (B)
559. **Byzantine History I: 284-867. (HIS 759). Cr. 4**
From Diocletian and Constantine I to the Macedonian Dynasty. (F)
560. **Byzantine History II: 867-1453. (HIS 760). Cr. 4**
From the Macedonian Dynasty to the fall of Constantinople. (W)
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 the age of Marx to the present; Utopian socialism, Marxism, anarchism, syndicalism, and communism; labor, fascism and the Spanish Civil War; contemporary trends. (B)
564. **European Economic History. (HIS 764). Cr. 3**
Development of the European economies from the eighteenth century to the present. The Industrial Revolution and its consequences. (I)
565. **Technology in Western Civilization. (HIS 765). Cr. 3**
Development of technology since the Renaissance and its impact on Western society and culture. Technological developments in manufacturing, transportation, communication, warfare. (I)
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. (I)
579. **Cities and Empires: European, Muslim, Chinese, and Russian. (HIS 779). Cr. 3**
A comparative analysis of the way urban patterns link to the political, economic, and cultural characteristics of empires. (I)
595. **Honors Seminar. Cr. 3**
Prereq: consent of Chairperson; honors standing in history. (Y)
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*. (T)
602. **Studies in European History. Cr. 2-4(Max. 9)**
Topics to be announced in *Schedule of Classes*. (T)
700. **(HIS 500) Readings in the French Empire in America. Cr. 4**
(B)
701. **(HIS 501) Readings in the Colonial Heritage of the United States to 1776. Cr. 3**
(B)
702. **(HIS 502) Readings in the Founding of the United States: 1776-1815. Cr. 3**
703. **(HIS 503) Readings in The American Republic 1815-1861. Cr. 3**
704. **(HIS 504) Readings in the Civil War and Reconstruction 1861-1877. Cr. 4**
705. **(HIS 505) Readings in the Emergence of Modern America 1877-1917. Cr. 4**
706. **(HIS 506) Readings in Modern America: 1917-1945. Cr. 4**
708. **(HIS 508) Readings in Medicine and Disease in America 1600-1950. Cr. 4**
712. **(HIS 512) Readings in Foreign Relations of the United States to 1920. Cr. 3**
713. **(HIS 513) Readings in Foreign Relations of the United States Since 1920. Cr. 4**
716. **(HIS 516) Readings in the Constitutional History of the United States to 1877. Cr. 4**
717. **(HIS 517) Readings in the Constitutional History of the United States Since 1877. Cr. 4**
719. **(HIS 519) Readings in History of American Social Thought. Cr. 4**
720. **(HIS 520) Readings in Women in American Life and Thought. Cr. 3**
721. **(HIS 521) Readings in the Peopling of Modern America 1790-1914: A History of Immigration. Cr. 3-4**
722. **(HIS 522) Readings in the Changing Shape of Ethnic America World War I to the Present. Cr. 3-4**
728. **(HIS 528) Readings in American Legal History. Cr. 4**
729. **(ECO 549) Readings in American Labor History. (HIS 529) Cr. 4**
730. **(HIS 530) Readings in the Industrial History of the United States. Cr. 4**
731. **(CRJ 508) History of American Criminal Justice. (HIS 531) Cr. 3**
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 on deviance; violence in American history. (B)

733. (HIS 533) Readings in the History of Greece. Cr. 3 (Y)
734. (HIS 534) Readings in the History of Rome. Cr. 3 (Y)
735. (HIS 535) Readings in the Hellenistic Period. 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. 4 (B)
740. (HIS 540) Readings in Europe Under the Old Regime: 1660-1789. Cr. 4 (B)
741. (HIS 541) Readings in the French Revolution and Napoleon. Cr. 4 (B)
744. (HIS 544) Readings in Twentieth Century Europe. Cr. 4 (B)
748. (HIS 548) Readings in Nazi Germany. Cr. 3-4 (Y)
749. (HIS 549) Readings in Russian History through the Revolution. Cr. 4 (B)
750. (HIS 550) Readings in the Soviet Union. Cr. 3 (B)
759. (HIS 559) Readings in Byzantine History I: 284-867. Cr. 4 (F)
760. (HIS 560) Readings in Byzantine History II: 867-1453. Cr. 4 (W)
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)
764. (HIS 564) Readings in European Economic History. Cr. 3 (I)
765. (HIS 565) Readings in Technology in Western Civilization. Cr. 3 (I)
769. The Administration of Historical Museums. Cr. 3
Introduction to the nature of historical museums. (I)
773. (HIS 573) Readings in the History of West Africa. Cr. 4 (I)
779. (HIS 579) Readings in Cities and Empires: European, Muslim, Chinese and Russian. Cr. 3 (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. (I)
782. (L S 776) Principles and Practices of Archival and Library Conservation. Cr. 3
Prereq: HIS 781. Advanced course in library and archival conservation providing theory and practice of basic laboratory preservation and restoration treatment. (I)
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. (W)
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
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. (I)
787. Public History. Cr. 3
Prereq: consent of graduate director. Current trends, problems, and issues in the non-academic historical professions and in the public and policy applications of history. (Y)
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)
798. Internship in Historical Administration. Cr. 3-12
Prereq: HIS 769, 788. Offered for S and U grades only. (T)
799. Master's Essay Direction. Cr. 1-3 (T)
801. Seminar in Early American History. Cr. 3(Max. 12) (B)
802. Seminar in Nineteenth Century American History. Cr. 3(Max. 12) (I)
803. Seminar in Modern American History. Cr. 3(Max. 12) (I)
804. Seminar in the History of the Foreign Relations of the United States. Cr. 4(Max. 12)

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. (I)
813. **Seminar in the Historical Context of the Law.** Cr. 3(Max. 12)
(Y)
816. **Seminar in Comparative Labor History.** Cr. 3(Max. 12)
(B)
817. **Seminar in the History of Technology.** Cr. 3
Prereq: HIS 565 or 765 or consent of instructor. Readings and research on selected topics in history of technology in western Europe and the United States.
821. **Seminar in Medieval History.** Cr. 3(Max. 12)
Prereq: HIS 536 or 537. (B)
823. **Seminar in Renaissance and Reformation History.** Cr. 3(Max. 12)
(I)
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: 631 Merrick

Chairperson: Martin M. Herman

Professors

Homer F. Edwards, Jr., Martin M. Herman, Sara E. Leonard, Alexandra McCoy

Associate Professors

Marc Cogan, Richard P. Studing

Assistant Professor

Ramon J. Betanzos

Courses offered by the Department of Humanities make use of a wide range of materials drawn from the individual humanistic disciplines—from art, literature, history, music, and philosophy, among others. These courses examine materials from interdisciplinary perspectives: (1) the common processes of thought and expression which underlie the products of each of these disciplines and (2) the ways in which the products of these disciplines establish and give identity to the cultures of the past and to our common cultural inheritance.

The curriculum of this department provides students with an understanding of the foundations of all specialized inquiries in the diverse humanistic fields, with a context in which to evaluate the specific contributions made by each, and with a wider sense of the interconnectedness of all forms of human expression. Graduate work in humanities is therefore valuable as preparation for more specialized advanced studies in the humanistic disciplines, and as a foundation for research or employment which requires the ability to deal with diverse cultural materials. It is appropriate for students planning further graduate study, or planning to teach interdisciplinary subject matter at the college or secondary school level, or seeking employment in fields which demand flexibility and alertness to complex phenomena.

Currently, graduate work in humanities may provide credit for graduate programs in other departments. For information about future M.A. programs in this department, contact the Chairperson:

COURSES OF INSTRUCTION¹ (HUM)

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.

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.

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

¹ See page 461 for interpretation of numbering system, signs and abbreviations

forms of knowledge or experience as history, philosophy, religion, and science. (I)

537. Western Culture in the Baroque Period. Cr. 3
Prereq: HUM 210, 211 or equiv. For the period 1600-1750: 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)

575. Studies in the Arts and Ideas of American Culture I: 1770-1870. Cr. 3
Prereq: HUM 211 and one course in American literature or American history or A S 201 or equiv. Major individuals, schools and movements in American literature, philosophy, music and the visual arts: their relationships to one another and to American history. (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. Approach similar to that of HUM 575. (I)

601. Foundations of the Disciplines of the Humanities. Cr. 3
Consideration of how philosophical principles are related to the ways in which the humanities are experienced, defined and investigated. Differing divisions of the humanistic fields are explored. (I)

652. Interrelation of the Arts in Critical Theory. Cr. 3
Sources and content of contemporary theories of criticism; their adequacy when applied to various arts. (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 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: 422 State Hall

Director: Walter F. Edwards

Participating Faculty

Ernest Ament, Associate Professor, Greek and Latin
Richard B. Angeil, Professor, Philosophy
Ellen Barton, Assistant Professor, English
Lynn Bliss, Associate Professor, Speech Communication
Walter Edwards, Associate Professor, English
Helen Hause, Associate Professor (Emerita), Anthropology
Steven Lapointe, Associate Professor, English
Sara E. Leopold, Professor, Humanities
Stella Liu, Associate Professor, Education
Thomas McKinsey, Associate Professor, Philosophy
Hilary Ratner, Assistant Professor, Psychology
Aleya Rouchdy, Associate Professor, Near Eastern Languages
Eli Saltz, Professor, Psychology
Gary Scavnick, Associate Professor, Romance and Germanic Languages
Patricia Siple, Associate Professor, Psychology
Geneva Smitherman, Professor, Speech Communication
Robert Titiev, Associate Professor, Philosophy
Rebecca Treiman, Associate Professor, Psychology

Graduate Degree

Master of Arts in Linguistics

Linguistics is the scientific study of language. Linguistics students study several aspects of language including its nature and development; its universal properties; its diversified structures; its dialects and sub-dialects; its acquisition by children and non-native speakers; its systems of writing and transcription; its cultural role in the speech community; and its application to other areas of human knowledge. Although linguists investigate many kinds of language behavior, the main role of the linguist is to discover and present the rules of grammar and pronunciation in human languages. This means that every grammar book and dictionary that is used in schools represents the distilled knowledge of linguists. Linguists perform very important social and educational functions, in that the society relies on them to describe the principles by which its language(s) functions and to monitor the linguistic changes that take place over time.

Training in linguistics prepares students for jobs in teaching English and foreign languages (especially in multilingual and multicultural programs), broadcasting and the mass media, computer program design, public relations, tourism, speech writing, civil service and diplomatic work, and generally any job requiring the precise use or the analysis of speech or writing. Post-graduate students have opportunities to teach linguistics in colleges.

The linguistics program at Wayne State is interdepartmental and offers students an opportunity to concentrate on the study of the fundamental nature of human language: language history and structure, linguistic theory, the application of linguistics, and the relationship between linguistics and other disciplines. The program is administered by an advisory committee composed of linguists from the Departments of Anthropology, Education, English, Humanities, Philosophy, Psychology, Near Eastern Languages, Romance and Germanic Languages, Slavic Languages, Speech Communication and Journalism.

Master of Arts in Linguistics

Admission Requirements: Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13. In addition, applicants to the linguistics program must have taken an introductory course in linguistics and 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:

Plan B: Thirty credits in course work plus a three credit essay. 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, ethnolinguistics, psycholinguistics, sociolinguistics, or the study of a particular language. Programs are to be planned in consultation with an adviser and are to be approved by the Linguistics Committee. An essay and final written and oral examination are required.

The following courses must be taken if the student has not completed them as a undergraduate:

	credits
LIN 529 - The Structure of Language: Phonology	3
LIN 530 - The Structure of Language: Grammar	3

In addition, nine credits must be elected from the following:

LIN 531 - Language and Culture	3
LIN 532 - Language and Society	3
LIN 576 - American Dialects	3
LIN 577 - Sociolinguistics	3
LIN 710 - Studies in Linguistics (Max. 12 Cr.)	3-12
LIN 761 - Seminar in Problems and Concepts in Linguistics (Max. 9 Cr.)	3
LIN 771 - Advanced Studies in Linguistic Structure (Max. 12 Cr.)	4-12

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.

COURSES OF INSTRUCTION¹ (LIN)

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. 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. (ANT 529) The Structure of Language: 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. (ANT 530) 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. (Y)

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. (B)

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)

536. (SPD 532) Normal Language Acquisition and Usage. (SED 536). Cr. 3

Language development in children and the associated areas of emotional and motor development; language stimulation techniques and programs. (Y)

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 English Linguistics. Cr. 3

Basic concepts and methods of modern linguistics and their application to the study of the English language. (Y)

572. (ENG 572) Topics in Language. Cr. 3(Max. 9)

Topics such as phonology, 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. (Y)

575. (ENG 575) Theory of English as a Second Language. Cr. 3

Detailed examination of theories of language and language acquisition relevant to the non-native speaker of English. Review of research in language acquisition and language learning. (I)

576. (ENG 576) American Dialects. Cr. 3

Survey of chief social and geographic dialects of American English and introduction to theory of language variation. (B)

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. (Y)

610. (PSY 610) Research Methods in Cognitive Psychology. Cr. 3

Prereq: written consent of instructor. Survey of research methods in cognitive psychology, emphasizing relationship to contemporary

¹ See page 461 for interpretation of numbering system, signs and abbreviations

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content and theory. Investigation of memory, language processing, perception, and attention. (I)

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. (SPD 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. (W,S)

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)

710. (ANT 710) Studies in Linguistics. Cr. 3-12(Max. 12)

Prereq: LIN 529 and 530 or consent of instructor. Topics to be announced in *Schedule of Classes*. (I)

718. (SPC 718) Speech, Language, and Social Relationships. Cr. 3

Relation of speech and language patterns to social interaction. Ethnolinguistics, forms of address, social class perceptions, other topics. (Y)

761. (ANT 761) Seminar in Problems and Concepts in Linguistics. Cr. 3(Max. 9)

Central concepts and theories. Current developments, problems and contemporary research orientations in the field. Topics to be announced in *Schedule of Classes*. (I)

764. (ANT 764) Seminar in Problems and Concepts in Linguistic Anthropology. Cr. 3(Max. 9)

Prereq: LIN 531 or consent of instructor. Central concepts and theories. Current developments, problems and contemporary research orientations. Topics to be announced in *Schedule of Classes*. (I)

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: 646 Mackenzie Hall

Chairperson: Clarence W. Wilkerson, Jr.

Academic Services Officers: Katherine McDonald, Sheila Sparbeck

Professors

Gregory F. Bachelis, Leon Brown, Pao-Liu Chow, Bertram J. Eisenstadt, Karl W. Folley (Emeritus), David Handel, Chong-Shi Houh, John M. Irwin, Judith Q. Longyear, D. Clarence Morrow (Emeritus), Togo Nishiura, Owen G. Owens (Emeritus), Claude L. Schochet, Bertram M. Schreiber, Tze-Chien Sun, Chia Kuei Tsao, Martin T. Wechster, Paul Weiss (Emeritus), Clarence W. Wilkerson

Associate Professors

Robert D. Berman, John C. Breckenridge, Lawrence J. Brenton, Robert R. Bruner, Paul A. Catlin, William S. Cohn, Daniel S. Drucker, Henryk Fast, Daniel E. Frohardt, David H. Gluck, Lowell J. Hansen, David W. Jonah, Morris W. Katz, Marc Konvisser, Richard J. Loeb, Leonid Makar-Limanov, Peter Malcolmson, Charles A. McGibbon, Jose L. Menaldi, Jingyal Pak, Choon-Jai Rhee, Harold T. Slaby, Kai Wang, Stephen A. Williams

Assistant Professors

Steven M. Kahn, Andrzej Kozlowski

Adjunct Associate Professor

David E. Bindschadler, Lance K. Heilbrun

Graduate Degrees

Master of Arts—with a major in mathematical statistics

Master of Arts in 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 (page 190) and also in the Graduate School section (page 20). 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 13.

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, and 204); this course work should include advanced calculus and linear or modern algebra. Credits 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. In preparation for graduate study, the Mathematics Department strongly recommends undergraduate course work along the line of options 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 the 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, 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 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 applying mathematics to different areas (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 second area is to be the minor field in 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 13. 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 201-204, 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 542, 543, 560, 561 and 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.
5. The entire program of study must be a coordinated one that meets with the approval of the student's adviser.

At the time of admission to this program, a student will be assigned an adviser to help plan his or her program.

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 adviser from some department related to 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 13. 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 students'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

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.

COURSES OF INSTRUCTION¹ (MAT)

503. Computational Statistics and Data Analysis. Cr. 3
Prereq: introductory computer experience; one course in statistics. No graduate degree credit. Basic concepts of estimation, testing hypothesis; linear regression, analysis of variance; time series analysis; understanding and interpretation of statistics packages such as SPSS, SAS or BMDP. (I)

507. Advanced Calculus. Cr. 4
Prereq: MAT 204. Derivatives of implicit functions; Lagrange multipliers; implicit function theorems; transformations and mappings; vector fields and the theorems of Green and Stokes; uniform convergence; advanced topics in power series; improper integrals and functions defined by improper integrals; Fourier series and integrals. (T)

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 204. 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. Metareults 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 204 or consent of instructor. Unique factorization theorem; order of magnitude of arithmetic functions; congruences, quadratic residues, law of reciprocity; continued fractions; elements of geometry of numbers; second pearl of number theory. (B)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

541. Applied Linear Algebra. Cr. 4

Prereq: MAT 204. 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 204. Linear algebra: vector spaces, linear transformations, polynomials, determinants, eigenvalues and eigenvectors, canonical forms. Introduction to group theory: groups, subgroups, cosets (Lagrange's theorem), homomorphisms and quotient groups, permutation groups. (T)

543. Algebra II. Cr. 4

Prereq: MAT 542. Group theory continued: Sylow Theorems, finite Abelian groups. Ring Theory, rings, domains, fields, fields of quotients, homomorphisms and ideals, P.I.D.s and U.F.D.s, polynomial rings; Field extensions: splitting fields, finite fields. (T)

553. Differential Geometry of Curves and Surfaces I. Cr. 3

Prereq: MAT 204. Classical differential geometry of curves and surfaces in \mathbb{R}^3 (to the third power). (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. Probability and Stochastic Processes. Cr. 4

Prereq: MAT 204. No credit after MAT 615; only two credits after MAT 502 or MAT 221. 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; random walks; Markov chains; Poisson processes. (T)

577. Mathematical Models in Operations Research. Cr. 3

Prereq: MAT 204 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 204. 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 204. 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)

614. Topics in Mathematics for High School Teachers I. Cr. 3

Prereq: MAT 204. Only 2 credits toward graduation after MAT 556. Modern geometry; Euclidean geometry based on Hilbert's axioms; projective and affine planes; non-Euclidean geometries. (Y)

615. Topics in Mathematics for High School Teachers II. Cr. 3

Prereq: MAT 204. No credit after MAT 570; only one credit toward graduation after MAT 221. Combinatorial analysis; basic concepts and methods of probability and statistical inference. (Y)

616. Topics in Mathematics for High School Teachers III. Cr. 3

Prereq: MAT 204. 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, Ramser 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)

653. Differential Geometry of Curves and Surfaces II. Cr. 3

Prereq: MAT 553 or consent of instructor. Continuation of MAT 553 with emphasis on global theory. (I)

660. Complex Analysis. Cr. 4

Prereq: MAT 561 or consent of instructor. Complex differentiation; elementary functions; Cauchy's integral theorem; power series; Laurent expansions; singularities; residue theorem; entire and meromorphic functions; Riemann mapping theorem. (B)

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; Kunnet theorem. (B)

752. Algebraic Topology II. Cr. 3

Prereq: MAT 751. Cohomology ring; orientation and duality on manifolds; homotopy theory, Hurewicz theorem. (B)

753. Riemannian Geometry. Cr. 3

Prereq: MAT 750. Tensor Fields; Lie derivative; Riemannian manifolds; connections; geodesics; completeness; curvature. (B)

757. Topics in Geometry and Topology. Cr. 3-4(Max. 12)

Prereq: MAT 650 or consent of instructor. Topics from Lie theory; complex manifolds; integral geometry; geometric integration theory; algebraic geometry; algebraic groups; singularity theory; geometric topology; metric continua; fixed point theory; point set topology; topological groups; differential topology; stable homotopy; H-spaces; characteristic classes; K-theory. Topics to be announced in *Schedule of Classes*. (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 theorem; open mapping and closed graph theorems; Banach spaces; convexity; Hahn-Banach theorem, and Krien-Milman theorem; duality; reflexivity, weak topologies; classical Banach spaces; Hilbert spaces; normed algebras and spectral theory of operators. (B)

767. Topics in Analysis. Cr. 3-4(Max. 12)

Topics selected from such areas as Banach spaces; locally convex spaces; operator theory; distribution theory; Hardy spaces; Fourier series; group representations; harmonic analysis; Banach algebras; geometric measure theory; semi-groups of operators. Topics to be announced in *Schedule of Classes*. (B)

768. Topics in Complex Analysis. Cr. 3-4(Max. 12)

Prereq: MAT 660 or consent of instructor. Topics in complex function theory selected from such areas as conformal mapping; analytic continuation; Schlicht functions; value distribution theory; subharmonic functions and potential theory; Fourier integrals; approximation theorems; Riemann surfaces; analytic number theory; functions of several complex variables. Topics to be announced in *Schedule of Classes*. (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*. (B)

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. (D)

799. Master's Essay Direction. Cr. 1-3

Prereq: consent of adviser. (D)

850. Advanced Topics in Topology. Cr. 2-4(Max. 12)

Prereq: consent of instructor. (D)

860. Advanced Topics in Analysis. Cr. 2-4(Max. 12)

Prereq: MAT 761. (D)

895. Mathematics Seminar. Cr. 1-3(Max. 8)

Seminar in selected research areas. Students report to the seminar on recent research. Topics to be announced in *Schedule of Classes*. (D)

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 graduate credit; credit in College of Education only. Discussion and development of the mathematics upon which much of the current elementary school mathematics curriculum is based. Sets and Venn diagrams; systems of numeration; prime numbers, least common multiple, greatest common divisor; number systems, inverses, identity, associativity, commutativity, and distributivity; modular arithmetic; notions of ratio and percentage. (Y)

517. **Mathematics for Elementary School Teachers II.** (MAE 506). Cr. 3

Prereq: MAT 516. No graduate credit; credit only in College of Education. A survey of the real number system, algebraic operations, systems of linear equations, theory of equations. (Y)

518. **Mathematics for Junior High School Teachers I.** (MAE 510). Cr. 3

Prereq: MAT 517. No graduate credit; credit in College of Education only. Basic concepts of Euclidean geometry; trigonometric solutions of triangles. (Y)

519. **Mathematics for Junior High School Teachers II.** (MAE 511). Cr. 3

Prereq: MAT 518. Credit only in College of Education. 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

Chairperson: Jacob Lassner

Professor

Jacob Lassner

Associate Professors

Aleya A. Rouchdy, Ivan Starr,

Graduate Degrees

Master of Arts — with a major in Near East languages and specializations in Arabic and 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 13. 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 190 and 20-28, 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 either Aramaic or Arabic. In addition to Hebrew courses, the student will be required to take either six credits in Aramaic or 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, 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, 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.

COURSES OF INSTRUCTION¹

Arabic (ARB)

502. Medieval Arabic Texts II. Cr. 3

Prereq: ARB 501 or consent of instructor. Continuation of ARB 501. (B)

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. (F)

Hebrew (HEB)

500. Post-Biblical Texts. Cr. 3

Prereq: HEB 201 or consent of instructor. Selected readings of prose texts. (I)

507. Readings in the Bible. Cr. 3(Max. 9)

Prereq: HEB 501 or consent of instructor. (I)

590. Directed Study. Cr. 3-6(Max. 9)

Prereq: undergrad., consent of chairperson; grad., consent of chairperson and graduate officer. Readings; consultations, reports. (T)

782. Hebrew Seminar. Cr. 3(Max. 9)

Prereq: HEB 501 or 507 or consent of instructor. Selected topics. (I)

Near Eastern Languages and Literatures (N E)

533. (ANT 533) Arab Society in Transition. Cr. 3

Prereq: ANT 210, SOC 200 or consent of instructor. Distinctive social and cultural institutions and processes of change in the Arab Middle East. Regional variations; background and discussion of current political and economic systems and their relations to international systems. (Y)

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)



¹ See page 461 for interpretation of numbering system, signs and abbreviations

NUTRITION AND FOOD SCIENCE

Office: 160 Old Main
 Chairperson: Leora A. Shelef
 Administrative Assistant: Evette Weaver

Professors

Mary Jane Bostick (Emerita), Leora A. Shelef, Wallace T. Williams

Associate Professor

Michael B. Zemel

Assistant Professors

K.-L. Catherine Jen, Margene A. Wagstaff

Lecturers

Linda W. Clay, Susan H. Ryskamp

Field Instructor

Mary Smardzewski (Harper-Grace Hospital)

Associates

Anatomy and Cell Biology: T. Getchell, Ph.D.; Biochemistry: S.C. Brooks, Ph.D., David R. Evans, Ph.D., C.P. Lee, Ph.D., R.A. Mitchell, Ph.D., C.J. Parker, Jr., Ph.D.; Biological Sciences: J.M. Jay, Ph.D.; Chemistry: L.J. Marnett, Ph.D.; Family Medicine: M.M. Urberg, M.D., Ph.D.; Internal Medicine: J.V. Felicetta, M.D., G. Grunberger, M.D., S. Kasim, M.D., J.R. Sowers, M.D., M. Walsh, Ph.D.; Physiology: J. Dunbar, Ph.D.; Surgery and Biochemistry: V.M. Sardesai, Ph.D.

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 — Interdisciplinary with a joint major in Nutrition and Food Science and one of the following departments: Biochemistry, Biological Sciences, Chemistry, or others by individual approval.

Master's Degrees

Admission to these programs is contingent upon admission to the Graduate School; for requirements, see page 13. 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 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 and quantitative) score of 1000 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 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 or dietetics. A final oral examination is required of all students pursuing Plan A or Plan C. Upon the recommendation of the adviser, those under Plan B may request a waiver of the oral examination. The waiver may be granted only if the student has maintained a 3.50 h.p.a. and has demonstrated good communication skills.

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 sixteen credits in laboratory course work. Course 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. The committee on graduate studies may require satisfactory achievement in a comprehensive examination before candidacy is recommended. The applicant must file a copy of the *Plan of Work* with the Graduate Office.

General Requirements (Plans A, B and C)

	credits
NFS 606 — Research Problems in Nutrition and Food Science	4
NFS 785 — Seminar	2
At least two other 700-level courses in Nutrition and Food Science	

Additional Requirements (Plans A and B)

NFS 799 (Plan B) Essay	3
NFS 899 (Plan A) Thesis	8

At least two courses from each elective set I and II below, and additional courses to provide a minimum of thirty-two credits, which may include NFS 790 (Directed Study), and NFS 796 (Graduate Research).

ELECTIVE SET I

NFS 513 — Advanced Food Science	4
NFS 617 — Experiments in Quality Control (Coreq: NFS 716)	2
NFS 713 — Food Preservation	4
NFS 716 — Food Standards and Quality Control (Coreq: NFS 617)	2

ELECTIVE SET II

NFS 522 — Community Aspects of Nutrition	4
NFS 523 — Nutrition and Metabolism	4
NFS 525 — Nutrition and Disease	4

NFS 622 – Nutrition Self–Studies and Analysis	3
NFS 721 – Nutrition Through the Life Cycle	3
NFS 789 – Workshop in Mineral Metabolism	3
NFS 789 – Workshop in Vitamin Metabolism	3

Additional Requirements (Plan C)

I. A minimum of 20 credits in Nutrition and Food Science to be selected from the following:

NFS 522 – Community Aspects of Nutrition.....	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 617 – Food Standards and Quality Control Laboratory.....	2
NFS 685 – Seminar in Food Science and Nutrition	2
* NFS 713 – Food Preservation.....	4
* NFS 716 – Food Standards and Quality Control.....	2
NFS 726 – Practicum: Nutrition.....	2-4
NFS 790 – Directed Study (Max. 8 Cr.)	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
MGT 706 – Management and the Organization.....	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 (Sixteen Credits)

Candidates for this degree may satisfy the laboratory course credit requirement with courses from disciplines related to nutrition and food science, or by the following NFS selections:

NFS 513 – Advanced Food Science.....	4
NFS 617 – Experiments in Quality Control.....	2
NFS 622 – Nutrition Self Studies and Analysis	3
NFS 713 – Food Preservation.....	4
NFS 716 – Food Standards and Quality Control.....	2

The following may count as laboratory credit at the discretion of the adviser:

NFS 796 – Research in Nutrition and Food Science.....	3-6
NFS 799 – Master's Essay.....	3
NFS 899 – Master's Thesis.....	8

– 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 (FAC 592) and up to four credits in the practicum in nutrition (FAC 526) in association with the dietetic internship experience. In addition, upon approval of the academic adviser and the internship director, qualified students may pursue a directed study (FAC 790) during an eight week residency program with emphasis on either clinical nutrition or management.

* Required course.

Doctor of Philosophy

The doctoral program in nutrition and food science is offered on an interdisciplinary basis as a combined major with another department, i.e., Biochemistry, Biological Sciences, and Food Science. Other departments may qualify for joint offering of the Ph.D. program. This department and students are invited to seek recommendations from the graduate adviser.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13. The interdisciplinary curriculum requires an individual plan integrating course work and research in two departments. Approval of the graduate committee of both departments and the Dean of the Graduate School. Applicants to the program must have a master's degree in nutrition and food science or in a related science, a minimum honor point average of 3.0 and a combined verbal and quantitative GRE score of 1000 or greater.

Candidacy: In order to become a candidate for the Ph.D. degree, an applicant must successfully complete a qualifying examination. The examination has both written and oral components. The written examination consists of two sections, one in nutrition and food science and the other in the cognate discipline. The oral examination will include both major fields.

Degree Requirements: A minimum of ninety graduate credits beyond the baccalaureate are required for completion of the Ph.D. program. Normally, an interdisciplinary Ph.D. program will consist of graduate level course work distributed as follows:

1. 24-30 credits in nutrition and food science
2. 25-30 credits in the co-major discipline
3. 30 credits in dissertation direction
4. additional course work in cognate areas.

Dissertation: The intent of this program is to provide the student with the opportunity to apply the theory and methodology of a cognate discipline to research topics in nutrition and food science. The research component (dissertation direction) must reflect the philosophy; that is, it must integrate approaches taken by the participating co-discipline with research in nutrition and food science. Therefore, the research topic must be approved by the Graduate Committees in Nutrition and Food Science and the cognate department before any research begins. It is preferred, but not mandatory, that the research be conducted in the Department of Nutrition and Food Science laboratories. Because of the interdisciplinary nature, the research topic must be developed under the guidance of two co-advisers, one from each of the participating departments.

Assistantships

Assistantships are available each year to applicants having the highest scholarship and showing the greatest potential capacity for professional achievement. Each assistantship presumes an average of twenty hours per week of service to the instructional program in the Department. Letters of application should be directed to the Chairperson of the Department. A limited number of research assistantships are also available.

COURSES OF INSTRUCTION¹ (NFS)

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*. (Y)

513. Advanced Food Science. Cr. 4

Prereq: NFS 213 or equiv., CHM 224. Material fee as indicated in *Schedule of Classes*. Advanced study of the chemical, biological and physical properties of foods. (W)

522. Community Aspects of Nutrition. Cr. 4

Prereq: NFS 213, 214, 221. Introduction to community assessment. Assessment in determining cultural, economic, and lifestyle interrelationships that impact on nutrition problems and education needs throughout the life cycle. Skill development in marketing, planning, presenting, and evaluating nutrition education activities. (F)

523. Nutrition and Metabolism. Cr. 4

Prereq: NFS 221, BIO 187 or equiv., CHM 224 or equiv. The physio-biochemical properties of nutrients and their bionutritional interrelationships at the cellular and sub-cellular level. Carbohydrate, protein, and lipid metabolism and the role of vitamins and minerals in these metabolic processes. (F)

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)

526. Practicum in Nutrition. Cr. 2-4

Prereq: NFS 525 or consent of instructor. Offered for S and U grades only. Open only to seniors. Supervised participation in professional experiences in community agencies or nutrition clinics, diet counseling for individuals and small groups included. (F,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)

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. 3-4

Prereq: consent of instructor. Research orientation: acquaintance with published data, principles of design, methods of collecting data, and basic statistical analysis. (W)

616. Food Standards and Quality Control. Cr. 2

Prereq: NFS 213, CHM 224; or equiv. No credit after NFS 716. National and international food law, interpretations of regulatory food standards and determination of conformity of food products to

them. Methods of food inspection. (F)

617. Food Standards and Quality Control Laboratory. Cr. 2

Prereq: one course each in food science, organic chemistry, and microbiology; coreq: NFS 616 or 716. Material fee as indicated in *Schedule of Classes*. (F)

622. Nutrition Self-Studies and Analysis. Cr. 3

Prereq: NFS 523. Material fee as indicated in *Schedule of Classes*. Experience in following a prescribed diet, biological sample collection, laboratory analytical procedures, data interpretation, working with laboratory animals. Emphasis on dietary and biochemical assessment. (W)

685. Seminar. Cr. 2-4(Max. 6)

Prereq: consent of instructor; senior standing. Topics to be announced in *Schedule of Classes*. (F,W)

713. (NFS 413) Food Preservation. Cr. 3 or 4

Prereq: BIO 221, NFS 213, CHM 224; or equiv. Material 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)

716. Food Standards and Quality Control. Cr. 2

Prereq: NFS 213, CHM 224; or equiv. No credit after NFS 616. National and international food law. Interpretation of regulatory food standards and determination of conformity of food products to them. Methods of food inspection. (F)

721. Nutrition in 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)

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)

735. Organization and Management of Foodservice Systems. Cr. 4

Prereq: NFS 531 or equiv. and consent of instructor. No credit after NFS 535. Systems approach to planning, organizing, controlling, and evaluating managerial resources. Uniform required for field work. (F)

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 (Min. 3)

Prereq: consent of adviser. (T)

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

Prereq: consent of adviser. (T)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

PHILOSOPHY

Office: 767 Mackenzie Hall

Chairperson: William D. Stine

Professors

Richard B. Angell, Alfred Stern

Associate Professors

Barbara M. Humphries, Lawrence B. Lombard, T. Michael McKinsey, Lawrence Powers, Bruce A. Russell, William D. Stine, Robert J. Titiev, Robert J. Yanal

Assistant Professor

Charlotte E. Witt

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 13. 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: Thirty credits in course work, plus a two 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.

Doctor of Philosophy with a Major in Philosophy

Admission to this program is contingent upon admission to the Graduate School, for requirements, see page 13.

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 20-28 and 190, 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 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

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.

COURSES OF INSTRUCTION¹ (PHI)

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.

541. Plato. Cr. 4

Prereq: any philosophy course at the 200 level or above, or class major, or consent of instructor. Selected readings on topics in Plato.

542. Aristotle. Cr. 4

Prereq: any philosophy course at the 200 level or above, or class major, or consent of instructor. Selected readings on topics in Aristotle.

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.

¹ See page 461 for interpretation of numbering system. signs abbreviations

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)

551. Special Topics in the History of Philosophy. Cr. 4 (Max. 8)
Prereq: any course in the History of Philosophy group or consent of instructor. Topics to be announced in *Schedule of Classes*. (I)

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: one 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: one 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)

532. Special Topics in Ethics. Cr. 4 (Max. 8)
Prereq: one philosophy course at the 200 level or above or consent of instructor. Selected topics in normative and meta-ethics. Topics to be announced in *Schedule of Classes*. (I)

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)

560. Philosophy of Religion. Cr. 4
Prereq: any philosophy course at 200-level or above, or consent of instructor. Intensive investigation and discussion of special topics or particular authors in the philosophy of religion. Topics and authors to be announced in *Schedule of Classes*. (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. Advanced Topics in Philosophy. Cr. 4 (Max. 8)
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. 2-4 (Max. 8)
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.

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

Chairperson: David M. Fradkin

Assistant Chairperson: Talbert S. Stein

Professors

George B. Beard, William P. Beres, Henry V. Bohm, Juei-Teng G. Harry H. Denman, Gerald L. Dunifer, Lawrence D. Favro, David Fradkin, Suraj N. Gupta (Distinguished), Walter E. Kauppila, Wook Kim, Pao-Kuang Kuo, William B. Rolnick, Alvin Saperstein, Martin Stearns (Emeritus), Talbert S. Stein, Melbourne Stewart, Robert L. Thomas, Lowell E. Wenger

Associate Professors

Jhy-Jiun Chang, William E. Dorenbusch, Patrick F. Kenney, Jogindra M. Wadehra

Assistant Professors

Caroline G. Morgan-Pond, Karur R. Padmanabhan

Instructor

Ching-Kwan Kwan

Adjunct Professors

Edward C. Lim, Eleftherios M. Logothetis, Pieter K. Rol, Melvin Shaw

Adjunct Associate Professor

John E. Keem

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 broad-based knowledge and problem-solving skills that are needed in order to be a productive physicist in an academic, government, 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 13. 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.

Candidacy must be established by the time twelve credits have been earned.

Physics Colloquium (PHY 895): It is recommended that all candidates register for and attend the Departmental Physics Colloquium each semester they are in residence.

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 190 and 20-28, 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; 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, 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, 756. Students specializing in any branch of theoretical physics are encouraged to take either Physics 742 or Physics 885. 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 be given 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 20-28 and 190, respectively.

Physics Colloquium (PHY 895): It is recommended that all candidates register for and attend the Departmental Physics Colloquium each semester they are in residence.

Financial Aids

Graduate teaching appointments are available to qualified entering 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 Knöller 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.

COURSES OF INSTRUCTION¹

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)

502. Physical Basis of the Fine Arts. Cr. 3

No credit for physics majors. Music, color and perception; waves and information-energy transfer; generation of musical sounds, perception of tone quality, the physics and physiology of sound and color; psychophysics of music and light, holography. (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*. 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*. 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.

560. Applied Electricity and Magnetism. Cr. 3

Prereq: PHY 218 or 214, MAT 204. Material fee as indicated in *Schedule of Classes*. Electrostatics, magnetostatics, dielectric materials, capacitors, inductors, D.C. and A.C. circuits, complex representation of current elements, rectifiers and filters, junctions and an introduction to transistors.

562. Electronics and Electrical Measurements. Cr. 5

Prereq: PHY 560 or consent of instructor. Material fee as indicated in *Schedule of Classes*. Amplifier circuits, operational amplifiers, oscillators, digital electronics, analog and digital measurements.

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.

600. Physics for Secondary-School Teachers. Cr. 6

Prereq: written consent of instructor. Open only to pre-college teachers. Course may extend over two semesters before full credit awarded. Intensive course in physics and astronomy for pre-college teachers of physical science, physics, and/or chemistry. Physics content on the non-calculus level, special talks by guest experts, production of videotape modules for classroom instructional use.

601. The Physics of Waves I: Sound and Music. Cr. 4

Prereq: introductory physics course in mechanics, or consent of instructor. Open only to pre-college teachers. Ideas of introductory mechanics and Newton's laws as applied to mechanical waves, emphasis on sound and music, and interaction of these waves with the human organism.

602. Workshop for Teachers of Physics. Cr. 3

Prereq: written consent of instructor. Open only to teachers. Intensive scholarly workshop for teachers of precollege physics, includes series of talks by guest experts in physics, study of recent research on problem-solving in physics, production of videotape modules for instructional use in classroom.

603. The Physics of Waves II: Light and Color. Cr. 4

Prereq: introductory physics course in electricity and magnetism, or consent of instructor. Open only to pre-college teachers. Ideas of introductory electricity and magnetism, and Maxwell's description applied to electromagnetic waves; emphasis on visible light and color and interaction of these waves with the human organism.

605. Special Topics in Physics for Secondary-School Educators. Cr. 4-8

Prereq: introductory physics courses in mechanics, and in electricity and magnetism; or consent of instructor. Open only to pre-college teachers. Topics, including astronomy, modern physics and cosmology, optics, electronics; to be announced in *Schedule of Classes*.

620. Theoretical Mechanics. Cr. 4

Prereq: PHY 520 and MAT 204. 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

¹ See page 461 for interpretation of numbering system, signs and abbreviations

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 204 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. 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)

688. Lab-Computer Interfacing. Cr. 4

Prereq: PHY 562 and CSC 100 or consent of instructor. Material fee as indicated in *Schedule of Classes*. Design of experiments and experimental apparatus for digital control and digital data acquisition and storage, using microprocessors and microcomputers. (B:F)

691. Special Topics. Cr. 1-4(Max. 4)

Prereq: consent of instructor. Topics and prerequisites for each section to be announced in *Schedule of Classes*. More than one section may be elected in a semester.

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; experimental methods, detector, accelerators and colliders. (W)

707. Survey of Nuclear Physics. Cr. 3

Prereq: PHY 330, 520. Material fee as indicated in *Schedule of Classes*. Topics include: nuclear properties, radioactivity, nuclear mass, nuclear models, nuclear moments, excited states, nuclear fission and nuclear reactions. (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. 4

Prereq: PHY 681 and 720 or consent of instructor. 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. 4

Prereq: PHY 740. Material fee as indicated in *Schedule of Classes*. Continuation of PHY 740. (W)

742. Relativistic Quantum Mechanics. Cr. 4

Prereq: PHY 741. Material fee as indicated in *Schedule of Classes*. Specialized problems using relativistic wave equations and introduction to field theory. (I)

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)

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)

880. Nuclear Physics. Cr. 4

Prereq or coreq: PHY 741 or consent of instructor. Material fee as indicated in *Schedule of Classes*. Static electric and magnetic moments, bound properties of the N-P system, nuclear interactions, saturation properties, exchange forces, isospin, electromagnetic transitions, nuclear models, scattering, nuclear reactions. (I)

885. Quantum Theory of Fields I. Cr. 3

Prereq: PHY 741. Material fee as indicated in *Schedule of Classes*.

Principles of quantum field theory. Quantum electrodynamics and its applications. Introduction to strong, weak and gravitational interactions. (1:F)

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: 856 Mackenzie Hall

Chairperson: Charles D. Elder

Professors

Philip R. Abbott, David W. Adamany, Pi-chao Chen, Edward J. Cushman (Emeritus), Rondal G. Downing, Charles D. Elder, Ott Feinstein, Theodore B. Fleming, Jr. (Emeritus), Louis L. Friedland (Emeritus), Wesley L. Gould (Emeritus), Donald S. Hecoc (Emeritus), Charles J. Parrish, Henry J. Pratt, Maurice M. Ramsey (Emeritus), Murray B. Seidler (Emeritus), Jorge Tapia-Videla, C. Dale Vinyard, Maurice Waters, Harold L. Wolman

Associate Professors

James T. Chalmers, Richard C. Elling, Roy B. Flemming, Ray E. Johnston, Robert W. Miller, Alfred M. Pelham (Emeritus), Wilbur C. Rich

Assistant Professors

Susan P. Fino, John M. Strate

Lecturer

Kenneth H. Hill

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 basic 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 13. A strong undergraduate performance is a prerequisite and substantial undergraduate preparation in the social sciences is recommended. Applicants must take the aptitude section of the Graduate Record Examination and have the results sent to the department.

Applicants to the program should consult the Departmental 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 20-28 and 190, 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 GRE 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, prior course work in micro and macroeconomics, and an introductory statistics course. 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

In this degree program, graduate study in the organization and management of government, directed field training, and research are designed to prepare students for careers in public and quasi-public agencies. 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 13. Applicants should consult the Department's M.P.A. program director. Strong undergraduate preparation in the social sciences is recommended. additional undergraduate course work may be specified where such preparation is inadequate and Applicants must take the aptitude section of the Graduate Record Examination and have the results sent to the Department.

For further information, prospective applicants should consult the pamphlets: *Policies and Procedures Governing Graduate Study in Political Science* and *Master of Public Administration Program*, which are available from the Department on request.

DEGREE REQUIREMENTS: The Master of Public Administration is offered under the following options:

Plan B: Thirty-nine credits including a three credit essay.

Plan C: Thirty-nine credits in course work.

Of the thirty-nine credits required for the degree, at least twenty-seven 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 20-28 and 190, 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
Gerontology and Aging Policy Management
Health Services Administration
Management Information Systems
Organizational Behavior and Management
Personnel Systems and Human Resources Management
Policy Analysis and Evaluation
Public Finance
Public Planning Techniques
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 34.

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 options:

Plan B: Thirty-nine credits including a three credit essay.

Plan C: Thirty-nine credits of course work.

Thirty-nine credits of graduate course work are required for this degree, but at least 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 20-28 and 190, respectively.

Further information is contained in the Department's brochure *Policies and Procedures Governing Graduate Study in Political Science*, which is available from the Department on request.

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 13. 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 20-28).

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 this discipline indicates not merely superior knowledge of political science or public administration 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 Public Administration, Public Policy, or Urban Politics. Minor concentrations may be in any of the above or in American Government and Politics. 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.

Completion of a special research skill requirement and a general statistics requirement, Political Science 563 and 664 (or their equivalents);

Completion of a preliminary oral qualifying examination;

Completion of the final qualifying examination (written and oral);

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, Scholarships, and Awards

Students admitted to graduate study in Political Science may apply for University fellowships, scholarships, and other forms of financial aid as described on page 30. In addition, they may be eligible for the following awards and assistantships offered through the Department.

Assistantships: Teaching and research assistantships in the Department of Political Science are available on a competitive basis to qualified students. Inquiries and applications should be directed to the Department's graduate adviser.

Awards: The *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 *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.

COURSES OF INSTRUCTION¹ (P S)

503. Black Politics. Cr. 4

Nature and texture of black politics; various perspectives of politics by blacks; the impact of blacks on American politics. (Y)

504. American Political Reform Movements. Cr. 4

Socialism, communism, liberalism, feminism, and the black revolution, in terms of historical backgrounds, impact on the larger society, contemporary strengths, weaknesses and prospects. (B)

506. Comparative American State Politics and Policy. Cr. 4

Prereq: P S 101 or 103 or 207 or 306. 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. (Y)

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

Prereq: P S 101 or 103. 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. (Y)

549. Topics in Public Policy. Cr. 4(Max. 8)

Examination of selected areas of public policy, focusing on matters of national and/or international importance. Topics vary to include such policies as those relating to the environment, health, population, and social welfare. Topics to be announced in *Schedule of Classes*. (I)

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; 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. Political Economy of East Asia. Cr. 4

Introductory survey of postwar political and economic development of East Asia: China, Japan, South Korea, Taiwan, Hong Kong, Singapore. (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)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

- 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)
- 591. Political Science Internship. (U S 602). Cr. 1-4(Max. 6)**
Prereq: consent of undergraduate adviser. Open only to political science majors or minors, urban studies co-majors, or students with twelve credits or more in political science. Offered for S and U grades only. Internship in a public or quasi-public organization, agency, civic or voluntary group, or campaign organization. Collateral reading, written work, arranged conferences with supervisor. (T)
- 599. Special Topics in Political Science. Cr. 1-4**
Prereq: consent of chairperson or undergraduate adviser. Open only to juniors and seniors. Topics to be announced in *Schedule of Classes* (I)
- 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)
- 632. Management Science in the Public Sector. Cr. 3**
Prereq: P S 563. Introduction to the techniques of management science including linear programming, decision theory, queuing theory, and other methods designed to improve the quality of organizational performance with special attention paid to their usefulness in solving public management problems. (B)
- 634. Employee Relations in the Public Sector. Cr. 3**
Prereq: P S 231. Open only to seniors and graduate students. Examination of collective bargaining and public employee unionism in federal, state and local governments. (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. Comparative analysis of major problems and issues affecting national administrative institutions, structures, processes and behavior in a cross-cultural perspective. (I)
- 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)
- 664. Statistics and Data Analysis in Political Science II. Cr. 3**
Prereq: P S 663 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)
- 679. Topics in Comparative Politics. Cr. 3**
Analysis of specialized topics, to be announced in *Schedule of Classes*. (I)
- 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 American governmental institutions with special emphasis on Congress and the Presidency.
- 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.
- 724. Urban Public Policy. (U P 765). Cr. 3**
Influences on urban policy makers, policy-making implementation, service distribution and policy impacts. Application to substantive policy areas.
- 725. Seminar in Urban Administration. (U P 735). Cr. 3**
Public administration in agencies with urban-related policy and program functions. Focus on: public services delivery; urban system development; program-project design, implementation and evaluation and intergovernmental relations.
- 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.
- 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. (I)
- 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.
- 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.
- 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.
- 736. Hospital Administration. Cr. 3**
Prereq: P S 730. No credit after C M 750. Administrative problems of hospitals; analysis of current practices and techniques for managing patient traffic, treatment, interdepartmental/agency coordination and employee relations. Political, legal and organizational issues raised by the operation of these institutions.
- 738. Financial Administration of Health Services. Cr. 3**
Prereq: P S 734. Analysis of impact of government policy on the financial management of health facilities and services such as

hospitals, HMOs, clinics and nursing homes. (Y)

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)

Normative Issues in Public Policy. Cr. 3
Exploration of the normative foundations and implications of public policy issues. (B)

Health Care Policy in the United States. Cr. 3
Prereq: graduate standing. Evolution of health care policy in the United States; current health programs, their social consequences and possible alternatives. (Y)

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. (Y)

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)

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)

Directed Study. Cr. 1-6
Prereq: fifteen graduate credits in political science; written consent of chairperson and graduate adviser. (T)

Research in Political Science. Cr. 1-9
Open only to students admitted to doctoral study. (T)

Master's Essay Direction. Cr. 1-3(3 req.)
Prereq: consent of adviser. (T)

Readings in Political Science. Cr. 3(Max. 6)
Prereq: consent of adviser. (T)

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)

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)

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

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
Chairperson: M. Marlyne Kilbey
Associate Chairperson: Alan R. Bass
Administrative Assistant: Imogene Angell

Professors

Ernest L. Abel, Joel W. Ager, Sheldon Alexander, Lynn R. Anderson, David Asdourian, Alan R. Bass, Sandor B. Brent, C.G. Browne (Emeritus), Donald N. Elliott (Emeritus), Ira J. Firestone, LaMaurice H. Gardner, Kalman J. Kaplan, M. Marlyne Kilbey, Arthur Kornhauser (Emeritus), Gisela Labouvie-Vief, Sheldon J. Lachman, Sheldon G. Levy, Wilson McTeer (Emeritus), Hjalmar Rosen, Gerald Rosenbaum, Eli Saltz, Carolyn M. Shantz, Charles M. Solley, Ross Stagner (Emeritus), Laurence J. Stettner, Dalmas A. Taylor, John E. Teahan, Francine Wehmer, R. Douglas Whitman

Associate Professors

Röbert F. Berman, Kenneth S. Davidson, Joseph M. Fitzgerald, Winifred R. Fraser (Emeritus), S. Edson Haven (Emeritus), Rolando R. Henry, Joseph L. Jacobson, Melissa G. Kaplan, Cary M. Lichtman, Michael M. Reece (Emeritus), Annette U. Rickel, Patricia Siple, Rebecca A. Treiman, Julie A. Tucker, Kathryn Urberg, Rudy E. Vuchinich, Glenn E. Weisfeld, Alice M. Young

Assistant Professors

Leslie Isler, Hilary Ratner, Lois Tetric

Lecturer

Linda K. Forsberg

Research Associate

Gregory T. Smith

Research Scientist

Sandra Jacobson

Adjunct Professors

Kenneth M. Adams, Donald F. Caldwell, Samuel Gershon, Mark S. Goldman, Marvin Hyman, David Lachar, Donald W. Nielsen, Allen Raskin, Eli Z. Rubin

Adjunct Associate Professors

Gregory Brown, Shirley I. Dobie, David Faigenbaum, Robert R. Freedman, Charles L. Gdowski, Alan G. Glaros, James L. Grisell, Sandra W. Jacobson, Valerie Klinge, Richard M. Lee, Helene Lycaki, Mark W. Shatz, Herbert Silverman, Michael K. Tanenhaus

Adjunct Assistant Professors

Linda S. Angell, Kenneth M. Axelrad, Rebecca D. Baird, Jesse Wylie-Oliver Bell, Jr., David Benjamins, Michael Butkus, Louis A. Chiodo, Joan Chodorkoff, Allan B. DeHorn, Jerel E. Del Dotto, Grenae D. Dudley, Lisa A. Fruchtman, Manfred F. Greiffenstein, Melanie Hwalek, Joan Lessen-Firestone, Ronald F. Lewis, Ned Papania, Edward C. Podany, Arthur Robin, Daniel L. Rourke, Douglas L. Shore, Barry A. Tanner, Walter J. Zetuskay

Graduate Degrees

Master of Arts in Psychology: Human Development

Master of Arts — with a Major in Psychology

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 13. Students may enter the program in either Fall or Winter semesters and may apply for admission any time during the year. No application will be considered without prior consultation with a graduate adviser for the program. In order to arrange for a pre-application consultation, contact the Graduate Secretary, Department of Psychology, 71 W. Warren Avenue, Detroit, Michigan 48202.

DEGREE REQUIREMENTS: The Master of Arts in Psychology: Human Development is offered 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 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, those pursuing Plan B may request a waiver of the oral examination, provided 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 13. Only students who intend to complete a doctoral degree 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 as well as 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 is required.

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 in clinical and industrial/organizational psychology must be received by the Department Graduate Committee by February 15. All forms for the other program areas must be received by March 1. Applicants will be notified of the admission committee's decision by April 15.

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 a 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 that degree as a preliminary stage in doctoral study and should refer to the above section, under Master of Arts with a Major in Psychology, for admission requirements. The work of students entering this program with advanced degrees will be evaluated to determine the extent to which it satisfies the requirements of the M.A. degree in psychology.

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 20-28 and 190, respectively. All graduate students are expected to maintain 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: Basic and applied work in the area of cognitive functioning includes human learning and memory, psychology of language, and information processing. An interdisciplinary approach is stressed with research faculty drawn from developmental psychology, neuropsychology, linguistics, and learning disabilities programs.

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 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 social learning. Opportunities exist for field experience in various agencies and organizations in the community.

Residence: All new doctoral students must spend their *first academic year* on a full-time basis. By Departmental regulation, they are required to complete during this first year at least six three-credit courses, exclusive of research and thesis credits. 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 be engaged 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

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 on application procedures is available in the Psychology Graduate Office.

COURSES OF INSTRUCTION¹ (PSY)

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)

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)

535. Assessment of Personality. Cr. 3

Prereq: PSY 101 or 102; 331. Background, development, and application of objective, projective, and behavioral techniques in the assessment of personality. (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,

¹ See page 461 for interpretation of numbering system, signs and abbreviations

- sampling, and data collection techniques of use to marketers and consumerists. (Y)
- 562. Psychology of Mass Behavior. Cr. 3**
Prereq: PSY 101 or 102. Psychological processes; emotion, motivation, cognition, leadership, communication, and behavioral contagion in the initiation and maintenance of mass behavior, including panics and riots, social and political movements. (I)
- 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)
- 564. Psychology of Attitudes and Interpersonal Attraction. Cr. 3**
Prereq: PSY 101 or 102. Nature and significance of attitudes, opinions, beliefs. Structure and functions of attitudes on methods of change. (I)
- 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)
- 580. Maturation and Development of the Individual. Cr. 3**
No credit after FAC 180. Infancy through adolescence; critical problems in each period; development of personal identity. (I)
- 606. Sensory Processes. Cr. 3**
Prereq: PSY 405 or 505 or written consent of instructor. Advanced study of physiological mechanisms and psychological processes involved in sensory and perceptual experiences; laboratory work. (I)
- 609. Higher Mental Processes. Cr. 3**
Prereq: PSY 101 or 102. Distinctiveness of human thought processes considered from theoretical and experimental viewpoints. Comparative and developmental approach; focus on problems and issues. (I)
- 610. Research Methods in Cognitive Psychology. (LIN 610). Cr. 3**
Prereq: written consent of instructor. Survey of research methods in cognitive psychology, emphasizing relationship to contemporary content and theory. Investigation of memory, language processing, perception, and attention. (I)
- 616. Use of Computers in Psychological Research. Cr. 3**
Prereq: PSY 410. Computer applications in current psychological research. Not a course in computer programming; prior training recommended but not required. (I)
- 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)
- 640. Approaches to Child Rearing. Cr. 3**
Undergrad. prereq: PSY 240 and either 244 or 245. Child rearing theories, research concerned with contemporary child rearing practices and their effects. Implications for social policy and for teachers, social workers, and other professionals. (I)
- 642. Psychology of Infant Behavior and Development. (PS 343). 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. (F)
- 643. Psychological Problems of Development in Childhood. Cr. 3**
Prereq: PSY 240. Introduction to the relation between normal and atypical development during childhood; common behavioral disorders, such as: aggression, anxiety, dependency, and school phobia. (I)
- 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: satisfactory health record, TB test within last six months; PSY 642 or equiv. Orientation to infant research, assessment, and programming. Experience in infant observation and testing within the Psychology Infant Laboratory. (I)
- 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. (W)
- 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)
- 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)
- 699. Advanced Special Topics. Cr. 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. (W)

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, disated measures, randomized block, factorial and mixed designs. netic and particle radiation; pulsars, quasars and black holes; galactic structure and cosmology. ction of music. rn physics will be presupposed. r cylindrical symmetry. Mechanics of met (W)

718. Research Design and Methodology. Cr. 3

Prereq: PSY 716 or consent of instructor. 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). Cr. 3

Prereq: written consent of instructor. 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. 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. (W)

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. (F)

733. Clinical Neuropsychology. Cr. 3

Prereq: PSY 721 or 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. (F)

736. Experimental Psychodynamics II. Cr. 3

Prereq: PSY 735 or consent of instructor. Continuation of PSY 735. Emphasis on schizophrenia and brain dysfunction. (W)

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. (F,W)

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 curent 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. (F)
- 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. Research Methods in Industrial Criterion Development. 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. (F)
- 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. (W)
- 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 as used in industry; research methods for motivation, job satisfaction, and morale; research interpretations in theoretical frameworks. (I)
- 758. Theories and Issues in 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 theoretical and research areas of social psychology; current issues and research. (I)
- 763. Group Processes. Cr. 3**
Prereq: PSY 762 or equiv. or consent of instructor. Contemporary approaches to research on social influence processes, power structure, conformity processes, and problem solving in the small group. Methodology. (I)
- 764. Psychology of Group Intervention. Cr. 3**
Prereq: PSY 763. Review of theories and research on techniques for enhancing group effectiveness. Applications of principles of small group behavior in industry and community. (I)
- 765. Social Conflict and Social Cooperation. Cr. 3**
Prereq: PSY 762 or equiv. or consent of instructor. Description of basic social motives such as aggression, empathy, guilt, gratitude and achievement or dominance-striving. Functional analysis of these motives in social processes such as cooperation, conflict resolution, role specialization, and friendship. (I)
- 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 office. 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. (I)
- 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 psychiatry. 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. (I)

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. (F)

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. (W)

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. (F)

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. (W)

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; core material on sociological, psychological and behavioral foundations of alcohol problems; current research. (F)

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. (W)

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 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. Evaluation of the literature on current research or theoretical topic. (Y)

864. Seminar in Applied Social Psychology. Cr. 3

Prereq: PSY 762 or equiv. or consent of instructor. Applications of social psychological theory and research on environmental, educational, economic, political, legal and community settings. Relationships of social psychology to allied disciplines: sociology, economics, history, anthropology and others. (B)

865. Seminar in Advanced Topics in Social Psychological Research. Cr. 1-3 (Max. 6)

Prereq: PSY 762 or equiv. or consent of instructor. Field and survey techniques, unobtrusive measures, computer simulation, advanced data analysis, group observation techniques. (I)

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. (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. (F,W)

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. 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. S and U grades only. (T)

ROMANCE AND GERMANIC LANGUAGES AND LITERATURES

Office: 487 Manoogian Hall
Chairperson: Richard Vernier
Academic Services Officer: Mary Hoffiz

Professors

Vincent C. Almazan (Emeritus), Fernande Bassan, Henry N. Bershas (Emeritus), Manuela M. Cirre (Emeritus), Carl O. Colditz (Emeritus), Penrith B. Goff, Jacques L. Salvan (Emeritus), Marvin S. Schindler, E. Burrows Smith (Emeritus), Guy Stern, Richard Vernier

Associate Professors

Vladimir Bezdek (Emeritus), Achim Bonawitz, Alfred Cobbs, Erhard Dabringhaus (Emeritus), Andrea di Tommaso, Uwe K. Faulhaber, Michael J. Giordano, Jesus Gutierrez, Donald P. Haase, Louise M. Jefferson, Louis Kibler, Charlotte Lemke (Emeritus), Jacqueline Morton, Hermann D. Poster (Emeritus), Hector R. Romero, Sol Rossman, Maria C. Roth, Gary E. Scavnický, Donald E. Schurknight, Donald C. Spinelli, A. Monica Wagner

Lecturer

Claude Astrachan

Director of Foreign Language Laboratories

Farouk Alameddine

Graduate Degrees

Master of Arts—with a major in French, German, 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 13. 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 190 and 20-28, respectively.

— With a Major in French

Under Plans A and B

Candidates are required to take French 692, 730, and 751. 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. 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 692, 730, and 751. 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. 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 German

Under Plans A and B

Candidates are required to take German 751 and 752. At least five weeks prior to the time the degree is to be granted, candidates must pass a comprehensive oral examination.

— 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.

— 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 literature of the Medieval period, the Golden Age, the eighteenth, nineteenth, and twentieth centuries, both peninsular and South American. 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, 541, 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, 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 13. 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 and Germanic Languages and Literatures.

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

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.

COURSES OF INSTRUCTION

No knowledge of a foreign language is presumed or required for the following courses which are conducted in English with all reading in English Translation.

French in English Translation (FRE)

691. Contemporary French Criticism. Cr. 4

Theory and practice of contemporary French criticism; structuralist and post-structuralist works: Barthes, Todorov, and Derrida. 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. Advanced Speaking and Writing. Cr. 4

Prereq: FRE 310 or equiv. or consent of instructor. Spoken French in the context of French civilization. Readings and writing skills based on contemporary French texts, translations. (B)

520. Language Skills: Phonetics and Diction. Cr. 3

Prereq: FRE 310 or equiv. 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 310. 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 310 or consent of instructor. Advanced French grammar. Translation exercises from English to French; study of appropriate grammar rules. (B)
- 640. The Structure of French. Cr. 4**
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, society, institutions, and culture; interrelation of cultural trends in French art and thought. Films, slides, visits to the Detroit Institute of Art. (B)
- 646. Civilization "sur le Motif". Cr. 4**
Prereq: FRE 310. 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)
- 651. French Sixteenth Century Literature. Cr. 4(Max. 8)**
Prereq: FRE 361. Study of the literary trends of the Renaissance: Marot, Sceve, Labe, Du Bellay, Ronsard, D'Aubigne, Montaigne and others. Content will vary to cover a genre, literary movement, literary school, or period. Topics to be announced in *Schedule of Classes*. (B)
- 663. French Seventeenth Century Literature. Cr. 4(Max. 8)**
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(Max. 8)**
Prereq: FRE 362. 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)
- 681. French Nineteenth Century Literature. Cr. 4(Max. 8)**
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)
- 683. French Lyric Poetry. Cr. 4**
Prereq: FRE 362. The development of the lyric genre, from the origin of its formal conventions to modern challenges to the tradition. Emphasis on oral interpretation and textual analysis of poetry from Baudelaire to the present. (I)
- 684. French Twentieth Century Literature. Cr. 4(Max. 8)**
Prereq: FRE 362. Novel and drama, literary movements and representative authors from the turn of the century to the present: Proust to Le Clezio; Jarry to Tardieu. Course content will cover a genre or literary movement, school or period. Topics will be announced in the *Schedule of Classes*. (B)
- 686. Francophone Literature. 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)

- 692. French Bibliography, Research Methods, and Literature. Cr. 4**
Prereq: two 600-level French literature courses. Open only to and graduate students. Initiation to French bibliographical and their usage in research. Methodology for papers, dissertations. Explication de textes. Theory of literature. (I)
- 730. Introduction to Romance Philology. (SPA 730) Cr. 3**
Prereq: graduate major in French, Italian, or Spanish, or Department. Historical development and earliest texts of Romance languages: Latin substrata, historical diffusion of Latin, linguistic borrowings, classification, and characteristics of various Romance languages. (I)
- 751. Medieval French Language and Literature. Cr. 4**
Prereq: FRE 730. Required of French majors. Study of French language and readings representative of the literature of the Middle Ages. (I)
- 777. Special Studies in French Literature. Cr. 4(Max. 8)**
Prereq: minimum of eight credits in 600-level French literature or consent of adviser. Works of an outstanding writer, a 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 philological themes. (I)
- 871. Seminar in the French Renaissance. Cr. 4(Max. 8)**
Prereq: minimum of eight credits in 600-level French literature or consent of instructor. Specified aspect, movement, author, group of authors. (I)
- 872. Seminar in French Classicism. Cr. 4(Max. 8)**
Prereq: minimum of eight credits in 600-level French literature or consent of instructor. Specified aspect, movement, author, group of authors. (I)
- 873. Seminar in the French Enlightenment. Cr. 4(Max. 8)**
Prereq: minimum of eight credits in 600-level French literature or consent of instructor. Specified aspect, movement, author, 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 or consent of instructor. Specified aspect, movement, author, 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 or consent of instructor. Specified aspect, movement, author, 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. No degree credit toward Ph.D. Controlled application of active language skills for students electing a Ph.D. minor in French. (I)
- 590. Directed Study. Cr. 1-4(Max. 8)**
Prereq: undergrad., consent of adviser and chairperson; grad. consent of chairperson, adviser, and graduate officer. (I)

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)

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)
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)
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)

Special Courses

500. **Minor Language Practicum.** Cr. 3(Max. 9)
Prereq: consent of graduate adviser. Offered for S and U grades only. No Ph.D. degree credit. Controlled application of active language skills for students electing a Ph.D. minor in German. (T)
590. **Directed Study.** Cr. 1-4(Max. 8)
Undergrad. prereq: consent of German adviser; grad. prereq: consent of German 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 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)

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)
666. **Studies in Renaissance Literature.** Cr. 4(Max. 12)
Prereq: ITA 360 or consent of instructor. The major contributions of the Italian Renaissance, including the epic poetry of Boiardo, Pulci, Ariosto, and Tasso; the *Novellieri*; and the lyric poets from Petrarch to Marino. 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.** 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)

- 520. Spanish Phonetics. Cr. 3**
Prereq: SPA 310 or consent of instructor. A systematic study of Spanish sounds; intensive drill in accurate pronunciation. (B)
- 530. Advanced Grammar and Stylistics. Cr. 3**
Prereq: SPA 410 or placement. Intensive study of grammar and syntax. Translation of literary texts into Spanish. Free composition and conversation. Conducted in Spanish. (B)
- 541. Chicano, Cuban, and Puerto Rican Spanish. (CBS 541). Cr. 3**
Prereq: SPA 202. Practical linguistic description of the Chicano, Cuban, and Puerto Rican varieties of Latin-American 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)
- 642. Spanish Literature of the Renaissance. Cr. 4**
Prereq: SPA 361, 362. Literary genres of the sixteenth century (poetry and narrative: picaresque, pastoral, morisco, and chivalric). (Formerly SPA 651.) (B)
- 643. Spanish Literature of the Baroque Period. Cr. 4**
Prereq: SPA 361, 362. Great poets of the Spanish seventeenth century: Lope de Vega, Gongora, Quevedo; as well as the prose of Quevedo and Gracian. Literary selections studied within the unique cultural climate of the Spanish Baroque. (Formerly SPA 651.)
- 644. Spanish Literature of the Eighteenth Century. Cr. 4**
Prereq: SPA 361, 362. Literature of the Spanish Enlightenment: major works and literary trends and movements in the Spanish eighteenth century up to Romanticism. (Formerly SPA 652.)
- 645. Spanish Romanticism. Cr. 4**
Prereq: SPA 361, 362. Origins and development of Romanticism in Spain: theatre, poetry, costumbrismo, and novel. (Formerly SPA 652.)
- 646. The Spanish Novel of the Nineteenth Century. Cr. 4**
Prereq: SPA 361, 362. Representative works of the Realist and Naturalist movements. (Formerly SPA 693.)
- 647. The Spanish Novel of the Twentieth Century. Cr. 4**
Prereq: SPA 361, 362. Novelists of the Generation of 1898 and representative authors before and after the Civil War; includes trends as Trementismo, Social Realism, and the contemporary experimental novel. (Formerly SPA 693.)
- 649. Spanish Poetry of the Nineteenth and Twentieth Centuries. Cr. 4**
Prereq: SPA 361 and 362. Representative figures and trends in Modern and contemporary Spanish poetry. Post-Romantic Symbolists, the Generations of 1898 and 1927, and the contemporary poets.
- 656. Cervantes. Cr. 4**
Prereq: SPA 361 and 362. A detailed study of *Don Quijote* and other short works of Cervantes.
- 657. The Comedia. Cr. 4**
Prereq: SPA 361 and 362. Analysis of representative plays of Lope de Vega, Ruiz de Alarcon, Tirso de Molina, Calderon, and other dramatists of the Golden Age.
- 659. Genres and Topics in Peninsular Spanish Literature. Cr. 4**
Prereq: SPA 361 or 362. Topics such as modern Spanish literature of the Generation of 1898, to be announced in *Schedule of Classes*.
- 660. Spanish American Colonial Literature. Cr. 4**
Prereq: SPA 361 or 362. Major figures from the sixteenth to the nineteenth centuries. Poetry, prose, and theatre; the literature of conquest; conflicts and tension of the dominant and the conquered societies.
- 661. The Spanish American Novel I. Cr. 4**
Prereq: SPA 361, 362. 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 660.)
- 662. The Spanish American Novel II. Cr. 4**
Prereq: SPA 361, 362. The modern novel in Spanish America: stages of evolution through the vanguard period into the contemporary stage, with emphasis on representative figures such as Carpentier, Cortazar, and Garcia Marquez. (Formerly SPA 686.)
- 663. Spanish American Poetry. Cr. 4**
Prereq: SPA 361, 362. Major poets and their texts from the period of Independence through the early stages of Modernism, Modernism, Vanguard, to contemporary poetry.
- 669. Genres and Topics in Spanish American Literature. Cr. 4**
Prereq: SPA 361 or 362. 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.** 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)

842. **Seminar in Hispanic Linguistics.** Cr. 4(Max. 12)
Prereq: SPA 541 or consent of instructor. 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)

862. **Seminar in Spanish American Poetry.** Cr. 4
Prereq: graduate major in Spanish or consent of instructor. Poetry in Spanish America: evolution, history, manifestations, movements from Independence to the present. Topics to be announced in *Schedule of Classes*. (I)

886. **Seminar in Hispanic Studies.** Cr. 4(Max. 12)
Prereq: graduate major in Spanish. Topics in Peninsular or Latin American literature or linguistics 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)

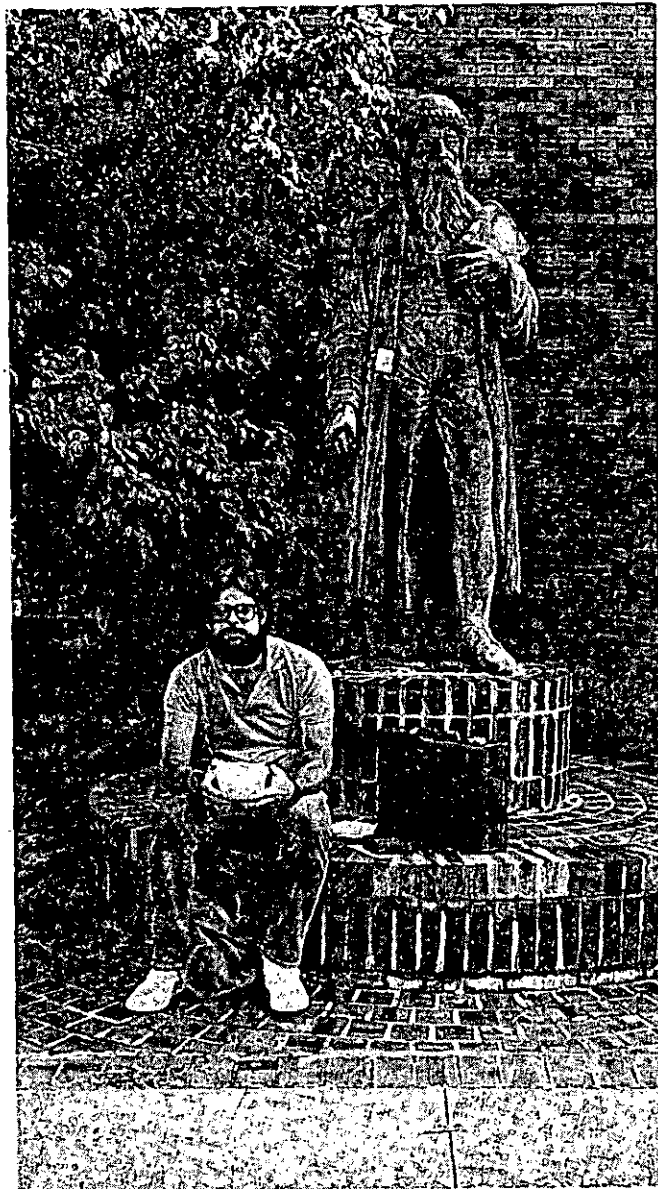
796. **Research Project.** Cr. 1-4(Max. 12)
Prereq: consent of Spanish adviser. (T)

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: 756 Mackenzie Hall

Chairperson: Mary C. Sengstock

Professors

Joseph L. Albini, J. Ross Eshleman, Mel J. Ravitz, Raye A. Rosen (Emeritus), Mary C. Sengstock, Leon H. Warshay, Eleanor P. Wolf (Emeritus)

Associate Professors

Clifford J. Clarke, Edmund G. Doherty, Thomas J. Duggan, Marshall J. Graney, V. Lee Hamilton, Robert F. Kelly, Mary Jane Van Meter, Rhonda Montgomery

Assistant Professors

Israel L. Barak-Glantz, Robert G. Newby

Adjunct Associate Professor

Janet R. Hankin

Adjunct Assistant Professor

William Hoffman, Dorothy Kispert

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 190 and 20-28, 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 13. 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 six 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 Graduate Program Coordinator, 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 Coordinator, Department of Sociology.

An honor point average of at least 3.3 in upper division courses, and sociology courses, is required for admission. An undergraduate major in sociology is not an absolute requirement for admission; 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, 405 (or 605 or 606).

Candidacy must be established by the time fifteen credits have been earned.

DEGREE REQUIREMENTS:

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); eighteen credits in sociology and related fields; Sociology 720; and one additional graduate seminar. The eighteen elective credits must include Sociology 628, and either 605 or 606. A final written or oral examination may be required in sociology at the discretion of the Department.

PLAN B requires thirty-two credits in course work including: an essay (SOC 799, three credits); Sociology 628, 720, 605 or 606; one seminar; experience in research in a substantive area through completion of Sociology 801 or an approved alternative; and at least two other sociology courses.

PLAN C, involving thirty-two credits in course work and demonstration of research competence by oral examination, is open only to master's students who intend to enter the doctoral program and who demonstrate exceptional ability, particularly in theory and methods. Consult the Department Chairperson or the Graduate Program Coordinator for further details.

— 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. Approximately thirteen courses are taken, as outlined in the following program:

	credits
SOC 658 — Introduction to Applied Sociology I	2
SOC 659 or SOC 655 or SOC 721	
— Introduction to Applied Sociology II	2
— Dynamics of Urban Social Action	3
— Social Evaluation Research Methodology	3
SOC 700 — Internship in Applied Sociology	3
SOC 605 — Sociological Theory Before 1920	3
SOC 606 — Sociological Theory After 1920	3
SOC 628 — Social Statistics	4
SOC 720 — Techniques of Social Research	3
One advanced seminar in applied sociology	3
Three specialization courses chosen with adviser	9
SOC 799 — Master's Essay	3

Doctor of Philosophy with a Major in Sociology

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13. 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 six 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 200, 410, 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, 756 Mackenzie Hall. The completed forms are to be returned to the Graduate Program Coordinator 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 take or have completed Sociology 605, 606, 628, 629 and 720, and either 705 or 806. Qualifying examinations for doctoral applicants will cover three of the major areas in sociology: one of these must be in methodology; 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

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 Coordinator 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.



COURSES OF INSTRUCTION¹ (SOC)

- 501. Selected Sociological Topics. Cr. 3**
Topics to be announced in *Schedule of Classes*. (I)
- 533. (ANT 533) Arab Society in Transition. Cr. 3**
Prereq: ANT 210, SOC 200 or consent of instructor. Distinctive social and cultural institutions and processes of change in the Arab Middle East. Regional variations; background and discussion of current political and economic systems and their relation to international systems. (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)
- 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. (UP 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. Cr. 3**
Theoretical orientations applied analytically to enhance 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)
- 558. Ethnic Groups in Urban America. Cr. 3**
Immigrants and their descendants in United States society. Problems of immigrants in American life, the processes and theories of adjustment and assimilation. Designed for students who may work with persons of variant ethnic backgrounds: health personnel, teachers, social workers, as well as sociology majors. (I)
- 562. Social Aspects in Industry. Cr. 3**
The conditions and consequences of industrialization on the organization of work. Topics may include structural patterns in industry, inter-industry comparisons, cross-cultural comparisons, the automobile industry as a special case. (I)
- 563. American Labor: Blue Collar, White Collar. Cr. 3**
Theory of working class organization. History of the development of industrial working organizations; unions and bureaucracy; white collar unionism; perspectives for the future of American unionism. (I)
- 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)
- 583. Juvenile Delinquency. Cr. 3**
Nature, incidence, causes, treatment, prevention and control of juvenile delinquency. The juvenile justice system as distinguished from the criminal justice system. (Y)
- 585. Social Organization of Correctional/Penal Institutions. Cr. 3**
Field trips to prisons may be required. Survey of theory, research and practice in the field of the social organization of penal institutions: prison organization and the prison subculture. (Y)
- 586. Sociology and Social Psychology of Confinement. Cr. 3**
Prereq: consent of instructor. Survey of theory, research and practice in confinement in correctional and mental institutions. Impact of confinement upon the individual personality; his ability to function as a member of society. Divergent policies and their implications. (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 Programs. Cr. 1**
Prereq. or coreq: SOC 587. Role of law, court system, schools, public and private agencies, and other factors in the prevention and treatment of family violence. Representatives of various community agencies

¹ See page 461 for interpretation of numbering system, signs and abbreviations

will speak to class. (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. (I)

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)

637. Sociology of Knowledge. Cr. 3
Socio-cultural conditions underlying human knowledge and its employment. Foundations of myth, ideals, ideologies; other ways of thought in the social process. Significant contributors to the field. (I)

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. 4
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. Family Systems and Interventionists. Cr. 1
Prereq. or coreq: SOC 643. Policies affecting families and family-based intervention strategies. Effects of policies on various aspects of family interaction. (Y)

646. Family-Based Intervention Techniques. Cr. 4
Prereq: an introductory social science course. Variety of strategies for working with families on an in-home basis, to change family interaction, child-rearing patterns, health practices, and home management. Focus on high-risk urban families. (Y)

655. Dynamics of Urban Social Action. (U P 645). Cr. 3
The nature and forms of social action. Practical examples of organization and planning; uses of power, non-violence, violence and relationships of these actions to achieving social change. (I)

658. Introduction to Applied Sociology I. Cr. 2
Prereq: graduate students or advanced social science undergraduates. The logic of applied sociological analysis, policy research design and ethical issues characteristic of applied sociology. (Y)

659. Introduction to Applied Sociology II. Cr. 2
Prereq: graduate students or advanced social science undergraduates. Continuation of SOC 658. Critical examination of a series of applied social research projects, and of the contributions of allied social sciences and professions such as anthropology, economics, political science, and law. Development of writing skills for policy makers; project in applied sociology. (Y)

660. Economic Sociology. Cr. 3
Analysis of economic systems, their development and processes. The corporation as an institution and its growth and influence in the total society. Relationship between economic structure, social class and social change.

677. Sociology and 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)

678. Intergenerational Relations: Adult Children and Their Elderly Parents. Cr. 4
Prereq: introductory course in a social science or gerontology. Historical and cross-cultural experiences contrasted with current demographic features of the aging population and its adult children; emphasis on institutionalization, family caregiving, elder abuse. (B)

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)

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)

705. Comparative Schools of Sociological Theory. Cr. 3
Prereq: SOC 605 or 606 or equiv. or consent of instructor. Analysis of theories in sociology, current theories and their antecedents, from a schools perspective. (B)

720. Advanced Survey of Approaches and Techniques of Social Research. Cr. 3
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)

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)
801. **Practicum in Sociological Research. Cr. 3**
Prereq: graduate standing. Experience in synthesizing theory and research through the actual conduct of social inquiry. (I)
806. **Seminar in Sociological Theory. Cr. 3** (I)
810. **Seminar in Social Psychology. Cr. 3** (I)
821. **Seminar in Methods of Social Research and Statistics. Cr. 3** (I)
840. **Seminar in Sociology of the Family. Cr. 3**
Prereq: graduate standing in sociology or prior coursework in marriage/family area. (I)
880. **Seminar in Deviance and Criminology. (CRJ 778). Cr. 3** (I)
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)

SPEECH COMMUNICATION AND JOURNALISM

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Chairman: Edward J. Pappas
Graduate Officer: Lynn S. Bliss

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Darryl J. Fox, Anita R. Lienert, Janice A. Pagano, Kristine V. Sbaschnig, Robert G. Steele, Richard A. Wright

Adjunct Faculty

Herbert J. Bloom, Richard M. Cole, Richard Frankel, Donald I. Kapentansky

Cooperating Faculty, Department of Audiology, School of Medicine

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Graduate Degrees

Master of Arts — with a major in Speech Communication and emphases in public relations and organizational communication; radio-television-film; communication disorders and sciences; audiology; speech communication education; communication and rhetorical processes; oral interpretation; or general speech.

Doctor of Philosophy — with a major in Speech Communication and emphases in communication and rhetorical process; radio-television-film; communication disorders and sciences; audiology; oral interpretation; or general speech.

The Department offers a wide variety of graduate degree programs from among its several academic areas. In the area of general speech, 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 communication disorders and sciences, the Department (in conjunction with the Department of Audiology) 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 and 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 pathology and audiology.

In the area of communication and rhetorical processes, the Department offers the M.A. and the Ph.D. degree programs. At the M.A. level, specialization may be taken in public relations and organizational communication. 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 mixes 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, a speech pathology laboratory with highly specialized equipment, 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 its research. Conversely, through its research, consulting, and other services, the Department endeavors to carry into the community the benefits of the knowledge acquired in the classroom and laboratory.

Master of Arts with a Major in Speech Communication

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13. 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 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 190 and 20-28, respectively.

Essays or theses may be written in any of the principal fields: communication and rhetorical processes; oral interpretation; communication disorders and sciences; audiology; radio-television-film; speech education; or in any combination of these fields with related fields. A final oral examination may be required.

CONCENTRATION REQUIREMENTS

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 the 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: SPB 700; SPD 636, 664, 702, 730, 736, 738, 760, 761, 762, 763, 764, 765, 766 and 767. A student who earns three 'C's will be terminated from the program upon recommendation of the CDS area faculty.

Communication and Rhetorical Process: Students in this area are required to take SPB 700 and should elect 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 rhetoric and public address, communication theory or oral interpretation.

General Speech: students must take SPB 700 and course work in at least two areas of the Department, including two courses numbered above 700. The *Plan of Work* should be developed in consultation with a graduate adviser to meet individual career needs.

Oral Interpretation: Those specializing in oral interpretation 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 following courses are required: SPB 700; SPC 510, 516, 520, 625, and 716 or 724. At least two electives must be chosen from SPC 611, 617, 619, 620, 710, 712, 721, 726, and 897. At least one elective must be chosen from SPR 540, 551, 553, 758, or 759. At least one elective must be chosen from Marketing, subject to adviser's approval; electives from another department, such as Psychology, Sociology, English or Economics may be substituted for the Marketing course with adviser's prior approval.

Radio Television and Film: 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 501; SPE 606, 607 and 781; SPR 551. Election of all course work must be approved by the adviser.

Doctor of Philosophy with a Major in Speech Communication

At the Ph.D. level the primary aims of this Department are to help students develop the theoretical basis and analytical skills necessary for the study of various communication acts and to improve their ability to communicate effectively in a variety of media and forums. 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 training in such professional communication areas as radio, television, and film, organizational communication and public relations, and speech and language pathology.
3. To prepare students for communication related careers in public service and private business organizations.
4. To prepare students as speech communication educators.

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13. In addition, applicants to the Ph.D. program in Speech Communication and Journalism 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. 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 speech should provide three letters of recommendation verifying academic interest and ability. The applicant should consult the Chairperson of the Departmental Graduate Committee as soon as possible.

For those desiring to specialize in audiology, it is recommended that early contact be made with the Department of Audiology, School of Medicine, 5E, University Health Center, 4201 St. Antoine, for specific requirements.

DEGREE REQUIREMENTS: The Doctor of Philosophy requires ninety credits beyond the baccalaureate degree (the communication and rhetorical process 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 Liberal Arts and the Graduate School governing graduate scholarship and degrees; see pages 190 and 20-28, respectively.

Additional Departmental requirements include: (1) SPB 700 or its equivalent; (2) a departmental major and departmental minor, and a minor outside the Department; (3) four courses (five courses for communication and rhetorical process concentration) 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 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.

Fellowships and Assistantships

Each year graduate assistantships and fellowships are awarded to qualified graduate students. Assistantships are awarded for teaching basic courses, working with the forensics program 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.

COURSES OF INSTRUCTION¹

Basic Speech (SPB)

- 590. Honors Directed Study. Cr. 3**
Prereq: admission to department honors program; SPB 491. Writing of senior honors essay under direction of faculty adviser. (I)
- 700. Introduction to Graduate Study in Speech. 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)

Communication, Rhetoric and Public Address (SPC)

- 501. Psychology of Human Communication. Cr. 3**
Prereq: SPB 200 or equiv. Basic psychological principles as applied to human and interpersonal communication: process nature, emotion, motivation, language and personality. (I)
- 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. Issues concerning the education of black children. (Y)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

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. (Y)

520. Group Communication and Human Interaction. Cr. 3

No Ph.D. credit in communication and rhetorical processes. 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)

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 200, 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)

710. Advanced Studies in Persuasion. Cr. 3

Prereq: SPC 521. Analysis and discussion of cognitive consistency theories, affiliation, achievement, and emotional balance theories; search for an eclectic theory of persuasion. (I)

712. Studies in Contemporary Public Address. Cr. 3(Max. 6)

Prereq: SPC 210. Critical analysis of rhetoric and strategy of group efforts to bring about change over a period of time. Topics: political campaigns (offered in even-numbered years); social movements (odd-numbered years). (F)

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)

718. Speech, Language, and Social Relationships. (LIN 718). Cr. 3

Relation of speech and language patterns to social interaction. Ethnolinguistics, forms of address, social class perceptions, other topics. (Y)

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)

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)

729. Contemporary Rhetorical Theory. Cr. 3

Exploratory analysis of a broad spectrum of recent works relevant to the art of discourse. (B)

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. (F)

829. Advanced Research Methods in Speech Communication. Cr. 3

Student computer account required. Topics to be announced in *Schedule of Classes*. (I)

Communication Disorders and Sciences (SPD)

508. Phonetics. (SED 532). Cr. 3

Multisensory study of sounds in the English language, emphasizing acoustic, physiologic, kinesio logic approaches. (F)

509. Anatomy and Physiology of the Speech Mechanism. (SED 533). Cr. 3

General science of normal speech; anatomy, physiology and mechanics of respiration, phonation, resonance, articulation. (W)

514. Introduction to Speech Science. (SED 507). Cr. 3

Prereq: SPD 508, 509. Overview of the basic processes of speech production; presentation of the principles of psychology, acoustics, phonetics, linguistics, semantics, and neurology involved in normal speech production. (F)

530. Introduction to Speech Pathology. (SED 530). Cr. 3-4

Development of speech correction in education; classification, basic principles, methods of diagnosing and treating speech deficits; clinical observations required for majors only. (F,S)

531. Clinical Methods in Speech Pathology. (SED 531). Cr. 3

Prereq: SPD 530. Procedures and materials for clinical diagnosis of articulatory, language, rhythm, and voice deficits of organic and non-organic causation. (W)

532. Normal Language Acquisition and Usage. (SED 536) (LIN 536). Cr. 3

Language development in children and the associated areas of emotional and motor development; language stimulation techniques and programs. (F)

536. Clinical Practice in Speech Pathology. (SED 534). Cr. 2 (Max. 8)

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)

632. Organization and Methods in Speech Pathology. (SED 632). Cr. 3

Class organization, management, material, teaching aids, techniques. (I)

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; SPD 508, 509, 514, 530, 532. Diagnostic tests and instruments used in the appraisal of speech-language disorders. Test protocol and administration procedure. (W)

660. Introduction to Articulation Disorders. (SED 660). Cr. 3

Prereq: SPD 530. Introduction to basic concepts related to acquisition and manifestations of articulation disorders in children and adults. (F)

661. Introduction to Stuttering. (SED 661). Cr. 3

Prereq: SPD 530. Introduction to basic concepts related to acquisition and manifestations of stuttering disorders in children and adults. (F)

662. Introduction to Voice Disorders and Cleft Palate. (SED 662). Cr. 3

Prereq: SPD 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. (W)

664. Language Pathology: Etiology and Diagnosis. (SED 664) (LIN 664). Cr. 3

Prereq: SPD 530 and 532. Descriptions, etiology, methods of diagnosis of language disorders in children. (F,S)

702. Advanced Principles and Methods in Speech Science. (SED 732). Cr. 3

Prereq: SPD 514. 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 based on clinical models and 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 (Max. 8)

Prereq: written consent of instructor. Advanced professional experience in clinical speech 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)

760. Advanced Clinical Methods: Articulation. (SED 760). Cr. 3

Prereq: SPD 660. The etiology, diagnosis and advanced treatment regimens of articulation disorders in children and adults. (F)

761. Advanced Clinical Methods: Stuttering. (SED 761). Cr. 3

Prereq: SPD 661, 730. The etiology, diagnosis and treatment of stuttering disorders in children and adults. (S)

762. Advanced Clinical Methods: Voice Disorders. (SED 762). Cr. 3

Prereq: SPD 662. The etiology, diagnosis and treatment of voice disorders in children and adults. (W)

763. Advanced Clinical Methods: Aphasia. (SED 763). Cr. 3

Prereq: SPD 663. Assessment and remediation principles designed for the adult aphasic. (Y)

764. Advanced Clinical Methods: Language Disorders. (SED 764). Cr. 3

Prereq: SPD 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: SPD 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

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)

809. **Research in Speech Science.** (SED 836). Cr. 3 (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)
Topics to be announced in *Schedule of Classes*. (T)

Speech Education (SPE)

606. **Teaching Communication at the Secondary Level.** (SE 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, and other reading and speaking contests. (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: SPE 781. Offered for S and U grades only. (I)

784. **Seminar in Speech Education II.** Cr. 3
Prereq: SPE 781. Continuation of SPE 781. (I)

Film (SPF)

502. **Studies in Film History.** Cr. 4 (Max. 12)
Prereq: SPF 201 or 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: SPF 201 or 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: SPR 221 or SPF 201. Material fee as indicated in *Schedule of Classes*. Experience with the preparation, shooting and editing of video projects in film-style production. (T)

543. **Film Production I.** Cr. 4
Prereq: junior standing or above. Introduction to principles of cinematography (cameras, lenses, film stock, pictorial composition,

and lighting) and editing (including screen continuity and sound interlock); projects utilize Super 8mm and 16mm equipment. (I)

544. **Film Production II.** Cr. 4
Prereq: SPF 543; junior standing or above. Continuation of SPF 543. All aspects of sound motion picture production including emphasis on scripting, budgeting, shooting and direction, post-production, sound mixing and AB roll editing. (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. **Law of the Press.** 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)

521. **Newsletters and Corporate Publications.** Cr. 3
Prereq: SPJ 321. Editing journalism newsletter; trips to area magazines; editing internal publications. Journalism skills course. (T)

Audiology (SPM)

540. **Introduction to Audiology.** (AUD 540) (SED 540). Cr. 3
Introduction to physics of sound, anatomy of the hearing mechanism, audiometry, hearing aids, habilitation and rehabilitation of the hearing handicapped. (S)

542. **Auditory Training and Speech Reading.** (AUD 542) (SED 551). Cr. 3
Prereq: SPM 540. Principles and methods of auditory training and speech reading for the hearing impaired. Observations required. (W)

544. **Practicum in Audiology.** (AUD 544) (SED 541). (Lab: 6). Cr. 1
Prereq: SPM 540. Material fee as indicated in *Schedule of Classes*. Supervised training and practice for clinical certification; not open for credit to graduate students in audiology. (I)

548. **Clinical Instruments.** (AUD 548). Cr. 3
Prereq: graduate status in audiology. Design, calibration, and use of electro- and bio-acoustic instruments in clinical audiology. (F)

640. **Anatomy and Physiology of the Auditory and Vestibular Systems.** (AUD 640). Cr. 4
Prereq: graduate status in audiology. Functional anatomy, physiology, and central pathways of the auditory and vestibular system. (F)

641. **Pure-Tone and Speech Audiometry.** (AUD 641). Cr. 4
Prereq: graduate status in audiology. Fundamental principles and clinical applications of pure-tone and speech audiometry. Laboratory

assignments required. (F)

642. Special Audiologic Procedures. (AUD 642). Cr. 4
Prereq: SPM 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. (AUD 643). Cr. 4
Prereq: SPM 641. Electroacoustic and clinical aspects of acoustic amplifiers for the hearing handicapped. (W)

645. Clinical Topics in Audiology. (AUD 645). Cr. 1-2(Max. 8)
In-depth study of special current topics in audiology. Topics to be announced in *Schedule of Classes*. (Y)

740. Research Projects in Audiology. (AUD 740). 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)

742. Industrial and Community Problems in Audiology. (AUD 742). 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. (AUD 743). Cr. 3
Prereq: SPM 641. Introduction to embryology, tests, test procedures, and counseling of parents with hearing-handicapped children. (S)

745. Statistical and Experimental Procedures in Audiology I. (AUD 745). 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)

746. Statistical and Experimental Procedures in Audiology II. (AUD 746). Cr. 4
Prereq: SPM 745. Material fee as indicated in *Schedule of Classes*. Continuation of SPM 745. Application of analysis of variance procedures to auditory, psychophysical, and behavioral data. (I)

749. Educational Management of Hearing-Impaired Children. (AUD 749). Cr. 3
Prereq: SPM 643, 743. Pre-school guidance and counseling, modern educational models and placements options and the role of the audiologist in educational management. (F)

843. Electronystagmography. (AUD 843). Cr. 2
Instrumentation, procedures, and interpretation of ENG records. (I)

848. Seminar in Audiology. (AUD 848). Cr. 3(Max. 12) (W)

Oral Interpretation (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)

555. Performance Workshop. Cr. 1-2(Max. 4)
Prereq: SPO 250 or equiv. Workshop in conjunction with oral interpretation activities: festivals, contests, public performances such as Interpreter's Theatre productions and Readers' Bureau programs. (Y)

556. Oral Interpretation of Shakespeare. Cr. 3(Max. 6)
Prereq: SPO 250 or equiv. Analysis and performance of Shakespeare's plays and poetry. (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. Oral Interpretation 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 Oral Interpretation. Cr. 1-2(Max. 8)
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 211; 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 221 or SPF 201. 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 I. Cr. 4**
Prereq: SPR 211; 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. Television Production II. Cr. 4**
Prereq: SPR 541; junior standing or above. Material fee as indicated in *Schedule of Classes*. Continuation of SPR 541. Organization and execution of the television studio director's tasks. (Y)
- 551. Mass Communications and Society. Cr. 3**
Prereq: junior standing or above. Theoretical and practical research on the social functions and effects of the mass media. (T)
- 553. Audience Measurement and Survey Techniques in Electronic Media. Cr. 3**
Prereq: SPR 201; junior standing or above. Theory and application of quantitative research techniques in surveying audiences for electronic media. (B)
- 555. Broadcast Management. Cr. 3**
Prereq: SPR 201; junior standing or above. Principles of radio and television management; objectives, procedures and policies in radio and television station development and operation. Discussions with management executives. Market 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. Individual Projects and Internships in Radio-Television-Film. Cr. 1-4(Max. 8)**
Prereq: senior or graduate standing and 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. 2**
Application and evaluation of command languages, files and programs of computer based or controlled instructional languages to the communications media. (Y)

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 library 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 librarianship 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 most recent change in the Library Science Program is the addition of a certificate program in archival administration, offered in conjunction with the History Department of the College of Liberal Arts.

Today the Library Science Program is under the administrative jurisdiction of the Director of the University Libraries, with degrees granted by the Graduate School of the University. Since the first library courses were offered in 1918, the program has experienced many changes, but its mission has remained constant: to prepare men and women for challenging service in what is now the dynamic field of library and information sciences.

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 everchanging society. To achieve these goals, the Program sets the following general objectives for its students:

1. To evaluate the library and the library information profession in their historical, social, technological, 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 and examine the concepts, structure, and organization of knowledge;
4. To select, acquire, organize, store, retrieve, and disseminate information and materials;
5. To apply the concept of information transfer to facilitate access to recorded knowledge;

6. To develop sensitivity to the opportunity and responsibility of library/information service in an urban, multi-ethnic setting as well as an understanding of the distinctiveness of each library/information center as a component of a specific environment;

7. To identify the needs of individuals and groups for library/information services, design plans, and implement programs that respond to identified needs;

8. To evaluate and utilize current and emerging technologies in the organization and retrieval of information;

9. To apply principles of effective management to the operation of library/information centers;

10. To examine, assess, and apply research in professional practice in the solution of library/information problems;

11. To develop a personal philosophy of ethics, professionalism, and professional accountability;

12. 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-one 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 (IBM 4381-2) 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.

Graduate Degrees and Certificates

Master of Science in Library Science

Specialist Certificate in Librarianship

Certificate in Archival Administration

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. 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 non-library settings.

Admission Requirements

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13. In addition, Master of Science in Library Science applicants must satisfy the following criteria:

1. Have an undergraduate degree from a regionally accredited college or university with course work distributed so as to provide a minimum of seventy semester credits in general education.
2. Have an honor point average of 2.6 or better (C = 2.0). (Conditional admission may be authorized upon review if the applicant's h.p.a. is between 2.25 and 2.6);
3. Submit a typewritten statement (not to exceed one page) of educational objectives; and
4. Have an interview with a faculty adviser in the Library Science Program if the student's undergraduate h.p.a. is between 2.25 and 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 25) requiring a minimum of thirty-six credits to be distributed as follows: Twenty-two credits in the library science professional core (including a three credit essay or project: L S 799), and fourteen credits in an area of professional concentration. A maximum of six credits in courses outside of library science may be accepted as cognates.

Professional Core (Twenty-two Credits)

L S 601 – Introduction to Librarianship.....	3
L S 610 – Bibliographic Database Command Languages.....	1

L S 611 – General Reference Service.....	3
L S 621 – Technical Services in Libraries.....	3
L S 781 – Automation and Data Processing for Libraries.....	3
L S 799 – Master's Seminar and Essay or Project.....	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 (Fourteen Credits)

A *Plan of Work* is a formal statement of the goals and prescribed courses of an academic program. The library science master's 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* for his/her academic goals.

Specialist Program 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 personnel, children, the elderly, the handicapped, institutionalized persons);
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 13. In addition, applicants to the Specialist Program in Librarianship must satisfy the following criteria:

1. Have a master's degree in librarianship; with an honor point average of at least 3.5;
2. Have professional employment experience as a librarian or information specialist;

3. Submit a typewritten statement (not to exceed one page) of educational objectives; and
4. Submit four letters of recommendation attesting to professional competence and leadership potential.

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. 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 have established archives for the first time. 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 293.

Certificate Requirements

Students must complete twelve credits selected from the following:

	<i>credits</i>
L S 771 -- Introduction to Archival Methods I	3
L S 772 -- Introduction to Archival Methods II	3
L S 773 -- Conservation and Administration of Photograph Collections	3
L S 775 -- Introduction to Archival and Library Conservation	3
* L S 776 -- Principles and Practices of Archival Conservation	3
L S 777 -- Oral History: A Methodology for Research	3
L S 781 -- Automation and Data Processing for Libraries	3

* Recommended for those with no previous archival experience.

FINANCIAL AIDS, ACTIVITIES AND AWARDS

Financial Aid

Each year library science students are eligible to apply for Graduate Professional Scholarships. These awards provide resident tuition (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, 222 Administrative Services Building.

Internships

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. Participation is voluntary; however, 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 Library Science Program.

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 University Libraries.

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 \$4300 to \$7700 per year, in addition to 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; and by the first day of the Fall term for Winter 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.

Scholarships and Awards

Patricia A. Knapp Award: 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.

Library Science Alumni Scholarships: 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 Scholarship: a partial scholarship based on academic qualifications, character, and financial need. These scholarships are not available on an annual basis.

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.

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.

Faculty

Office: 106 Kresge Library; (313) 577-1825

Dean of University Libraries and Library Sciences: Peter Spyers-Duran
Director of Library Science Program: Joseph J. Mika

Professors

Robert Booth (Emeritus), Genevieve M. Casey (Emerita), Margaret Grazier (Emerita), Philip Mason, Joseph J. Mika, Vern Pings (Emeritus), Peter Spyers-Duran

Associate Professors

Miriam Larson (Emerita), Betty Maurstad (Emerita), Edith Phillips, Bruce Shuman

Assistant Professors

Arthur Gunn, Carole McCollough

Adjunct and Cooperating Faculty

Donald Bissett, Professor, College of Education; John Childs, Professor, College of Education; Georgia Clark, Arthur Neef Law Library; Anaclare Evans, Shiffman Medical Library; Edna Jolliff, Harper Hospital; Margery Long, Associate Professor, Archives; Genevieve Oldani-Caruso, UNISYS Corporation; Joan Rabins, Archivist, Reuther Library; R. Craig Roney, Assistant Professor, College of Education; Albert Stahl, Associate Professor, College of Education; Jacqueline Tilles, Associate Professor, College of Education; Faith Van Toll, Shiffman Medical Library

COURSES OF INSTRUCTION¹ (L S)

601. Introduction to Librarianship. Cr. 3
The development and place of libraries in society; objectives, functions of and trends in major types of libraries. (T)

610. Bibliographic Data Base Command Languages. Cr. 1
Offered for S and U grades only. Explanation and demonstration of command languages used to access online data bases of DIALOG Information Services, System Development Corporation, Bibliographic Retrieval Systems, and H.W. Wilson Company. (T)

611. General Reference Service. 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; processes used in exploiting library resources to supply information. (T)

621. Technical Services in Libraries. Cr. 3
Objectives and methods of acquisition, classification, cataloging, preparation of books and related materials in libraries. (T)

631. School Library Media Programs. Cr. 4
Role of library media programs in the school; methods of planning, organizing, and operating such programs; impact of technology on instruction and library service. (F,S)

637. (IT 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. (IT 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 non-fiction. (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 extra-literary factors affecting the older child's experiences with fiction and non-fiction. (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)

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)

711. Subject Reference and Bibliography: Humanities. Cr. 3
Prereq: L S 611. 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. (F,S)

712. Subject Reference and Bibliography: Science and Technology. Cr. 3
Prereq: L S 611. 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 data bases. (F,W)

713. Subject Reference and Bibliography: Social Sciences. Cr. 3
Prereq: L S 611. 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. (T)

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. (IT 711) Instructional Design. Cr. 4
Prereq: IT 511 or IT 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 in Libraries. 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)

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. (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
Continuation of L S 771. (W)

¹ See page 461 for interpretation of numbering system, signs and abbreviations.

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)

776. Principles and Practices of Archival and Library Conservation. (HIS 782). Cr. 3

Prereq: L S 775. Advanced course in library and archival conservation providing theory and practice of basic laboratory preservation and restoration treatment. (I)

777. (HIS 786) Oral History: A Methodology for Research. Cr. 3

Techniques of gathering data from individuals for use in research, classroom teaching; historical, cultural or other contexts. (I)

781. Automation and Data Processing for Libraries. Cr. 3

Storage and retrieval problems as approached by conventional and nonconventional methods. Computer applications in libraries. (T)

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 prior to registration. 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. Terminal Master's Seminar and Essay or Project. Cr. 3

Prereq: written consent of adviser. Role of research in development of the profession. Research methods; analysis and evaluation of research reports. (T)

811. Government Publications. Cr. 3

Prereq: L S 713 or consent of instructor. Selection, acquisition, access, and reference use of major federal, state and local documents. Introduction to Canadian, British and United Nations 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. (F)

812. Legal Information Resources and Services. Cr. 2

Acquaintance with the foundations of federal and state law; analysis of legal information problems; selection, organization and use of the basic tools in legal research. (S)

813. Business and Industry Information for Librarians. Cr. 3

Exploration of the structure, functional organization, and information needs of industrial, investment, and business enterprises. Study of bibliographic control of relevant literature, information sources, and specialized services. (W)

821. Advanced Classification and Cataloging. Cr. 3

Prereq: L S 621 or consent of instructor. Advanced problems in descriptive cataloging, including different forms of materials, and automated cataloging. Further study of theory, structure and application of classification systems and subject heading lists. (I)

823. Indexing and Abstracting. Cr. 3

Prereq: L S 621. Indexing and abstracting theoretics, standards, and practice in a range of disciplines, materials, and formats in vocabulary

control and thesaurus construction. Automatic indexing and computerized applications in information processing. (Y)

824. Bibliographic Data Bases. Cr. 3

Prereq: L S 781. Overview of data bases and data based services. Question negotiation and online search techniques, system selection, implementation and management. Hands-on training in an information retrieval system. (Y)

841. Library Systems and Services. Cr. 1-3(Max. 12)

Prereq: consent of adviser. Current administrative problems affecting library systems and services. Topics to be announced in *Schedule of Classes*. (I)

853. Advanced Automation and Data Processing for Libraries. Cr. 2

Prereq: L S 781. Basic programming and systems analysis for libraries. Examination of data management systems used for the automation of library functions. (I)

898. Specialist's Research Project and Seminar. Cr. 3

Prereq: written consent of adviser. Advanced research methods and application. (I)



STATE COLLEGE, PENNSYLVANIA

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College of Lifelong Learning

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Foreword

The College of Lifelong Learning (CLL) is principally responsible for outreach programs and off-campus course offerings of CLL and other schools and colleges of Wayne State University. To perform its duties, the College operates numerous instruction centers throughout the Detroit metropolitan area and engages in the delivery of instructional programs through television broadcasting. By way of such efforts, the College serves a diverse student audience: working adults who are unable to accommodate their schedules to the traditional on-campus programs of study; persons desiring courses of instruction at their place of employment; persons needing special guidance to help them participate in higher education; persons working on university degrees; and others who are simply taking classes to improve technical skills or enrich their educational background.

For this variety of student interests the College sponsors a corresponding array of services. Through the University Studies/Weekend College program (US/WCP) the College offers an interdisciplinary curriculum in the arts and sciences leading to the Bachelor of General Studies or the Bachelor of Technical and General Studies degrees. Additionally, CLL offers off-campus classes from other Wayne State university colleges which can be used to fulfill credit requirements for many undergraduate and graduate degree and certificate programs.

For individuals not intent upon pursuing a degree or certificate, the College offers noncredit courses in which skill development and knowledge acquisition may be enhanced without the customary routine of homework, examinations, and written assignments. A similar opportunity is provided by the CLL Visitor's Program through which individuals enroll for regular credit courses on or off campus on a noncredit basis and at greatly reduced fees.

By way of assisting those whose educational background has left them unprepared for university classes, the College administers a Community Education program and a Division of Adult Learning Services. The latter department helps adult students plan a university education by evaluating their preparedness for college and providing remedial and tutorial assistance where needed. Counselors of this agency work closely with students in program planning and the selection of classes.

Instructional Centers

The College of Lifelong Learning maintains comprehensive instructional centers at convenient locations throughout the Detroit metropolitan area:

Birmingham Center Groves High School 20400 W. Thirteen Mile Birmingham, MI 48010 Telephone: 642-2661, 577-3605 Manager: W. Kathryn Flack	Livonia Center Bentley High School 15100 Hubbard Livonia, MI 48154 Telephone: 284-5335 Manager: Sharon O'Brien
Downriver Center Schafer High School 15100 Northline Southgate, MI 48195 Telephone: 284-5335, 577-4680 Manager: Sharon O'Brien	Northeast Center St. Basil School 22860 Schroeder East Detroit, MI 48021 Telephone: 771-3735, 577-3590 Manager: Irene Gordon

Eastside Detroit Center
3127 E. Canfield
Detroit, MI 48207
Telephone: 577-4701
Manager: Michael Wright

Harper Woods Center
Bishop Gallagher High School
19360 Harper Avenue
Harper Woods, MI 48225
Telephone: 771-3730
Manager: Irene Gordon

Northwest Detroit Center
18100 Meyer Road
Detroit, MI 48235
Telephone: 577-2937
Manager: Cynthia Ward

Southfield Center
25610 W. Eleven Mile
Southfield, MI 48034
Telephone: 358-2104, 577-3592
Manager: Robert Erickson

Sterling Heights Center
Heritage Junior High School
37400 Dodge Park
Sterling Heights, MI 48077
Telephone: 978-7881, 577-4470
Manager: Sue English



METROPOLITAN PROGRAMS AND SUMMER SESSIONS

Acting Associate Dean: Phyllis Jonas

Coordinator of Off-Campus Centers: Kris Krzyanski

Coordinator of Programming: Barbara Roseboro

Center Managers

Susan English, Robert Erickson, W. Kathryn Flack, Irene Gordon, Sharon O'Brien, Cynthia Ward, Michael Wright

Programmers

Lynne Fuller, Linda Robertson, Roy Robinson, Regina Ross, Lorraine Serra, William Slater, Donna Sotille, George Swan, Mary Kay Urlick

The Division of Metropolitan Programs and Summer Sessions is responsible for making available off-campus enrollment in the courses and degree programs offered by other Wayne State University schools and colleges. Close coordination with academic units assures that courses are appropriately selected, staffed, and scheduled. Many courses carry full university credit and can be used to complete Wayne State University degree programs. The Division also develops and offers—often in conjunction with cooperating schools and colleges—a variety of non-credit career and professional development courses. The Visitor's Program makes it possible for interested community members to enroll for a wide variety of Wayne State courses on a non-credit basis at reduced tuition rates. Program centers are maintained at convenient locations (see above).

Admission Requirements

Most credit courses offered through the Division of Metropolitan Programs are open to all students who are qualified by virtue of meeting the prerequisites for individual courses or, in cases where there are no prerequisites, on the basis of their own assessment of their aptitudes. These criteria apply regardless of whether or not the student has been formally matriculated at the University. Those individuals who have been formally admitted to Wayne State University for a degree or certificate program or post-baccalaureate study, and are in good academic standing, will have course credits and grades earned through CLL recorded on their transcripts in the same manner as credits earned on campus.

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 school or college, some credits earned in this status may be applied toward degrees, but students are advised to consult specific degree program and are urged to process formal application and admission documents as soon as possible.

Counseling and Advising

Counseling and advising services for students in the Division of Metropolitan Programs are provided through CLL's Division of Adult Learning Services and by the managers of CLL's suburban centers. Students who do not have formal matriculated status in the University are especially urged to confer with a counselor before registration. Skilled counselors offer assistance with educational problems or degree objectives. Appointments may be arranged by telephone: 577-4671.

Academic Programs

The Division of Metropolitan Programs offers entire curricula or selected courses applicable to many Wayne State degrees at convenient times and places for adult learners. The following schools and colleges regularly offer courses through CLL:

Business Administration: Bachelor's and Master of Business Administration programs are offered in Oakland County at the Birmingham Center, and in Macomb County at the Sterling Heights Center. A large number of evening courses are also available on the main University campus.

School of Business Administration courses in the 600-609 series are open only to students holding matriculated graduate status at Wayne State University.

Education: Bachelor's, master's, and doctoral programs are offered at off-campus locations, at the request of local schools and/or districts; and during the late afternoon and evening on the main campus.

Engineering: Limited course offerings, primarily in Engineering Technology, are offered off-campus; a larger variety of bachelor's and master's courses are available on campus during the evening.

Fine and Performing Arts: Undergraduate courses in music, art, and dance are offered at several off-campus centers and on campus during the evening.

Liberal Arts: Introductory and advanced courses are available at all off-campus locations. Sequences of courses leading to majors in English, political science, and sociology are offered over several semesters at the same location. A large number of undergraduate, master's and doctoral programs are also offered on campus during the evening.

Nursing: Bachelor's and master's courses are offered at several locations, including Macomb County Community College. A variety of late afternoon and evening courses is also offered on the main campus.

Pharmacy: One-day Sunday seminars for pharmacy practitioners and other health care professions are offered on a regular basis. In addition, there is a Home Study program for Wayne State alumni.

Social Work: Bachelor's and master's courses are offered at some off-campus locations and on the campus during evening and weekend hours. Professional continuing education programs are also offered.

Television Courses: Television courses provide a way to earn college credit through courses broadcast on WTVS, Channel 56, or over the College Cable Channel or The Working Channel. Along with the broadcasts, students use a textbook and/or study guide and meet with an instructor at scheduled times.

Career and Professional Development Programs

The Division of Metropolitan Programs 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 and 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 for all interested individuals.

GENERAL MOTORS TECHNICAL CENTER PROGRAM

Approximately seventy courses are scheduled at the Technical Center each year. They are typically scheduled for one evening a week for twelve weeks. Subjects include management, professional development, electronics, computer programming, and automotive technology.

PERSONAL COMPUTING CENTER

Since 1984 Wayne State University has operated a Personal Computing Center in Southfield. Twenty-five IBM Personal Computers, experienced faculty, instruction on best-selling software, hands-on course presentation, qualified laboratory assistance, and free weekend laboratory time assure a degree of quality found among few universities or commercial computer programs. A twelve clock-hour introduction to personal computers course is offered; in addition, classes are available in a variety of software programs.

CERTIFIED EMPLOYEE BENEFIT SPECIALIST PROGRAM

This ten-course program is co-sponsored by the International Foundation of Employee Benefit Plans and the Wharton School of the University of Pennsylvania. It offers an opportunity for participants to earn a professional designation. Course materials, examinations, and grading standards are comparable to the junior and senior level of a typical university. The program covers the legal, financial, and organizational framework within which an employee-benefit plan must function. Emphasis is placed on the principles underlying the design and operation of benefit plans. Two courses are offered each term; certifying examinations covering the subject matter of each of the ten courses are given in January and June.

CERTIFIED FINANCIAL PLANNING

The College of Lifelong Learning offers courses to prepare individuals for the examinations to become a Certified Financial Planner (CFP). This is a two-year, six-course program designed for financial professionals—stockbrokers, insurance specialists, attorneys, accountants—who intend to work with clients to create and implement comprehensive financial plans. Participants who successfully complete the program by passing the six requisite examinations earn a nationally-recognized CFP designation from the International Board of Certified Financial Planners.

VISITOR'S PROGRAM

Individuals interested in taking a class without grades, degree requirements, written assignments or examinations may participate in the Wayne State Visitor's Program. It allows individuals to attend a wide range of selected undergraduate and graduate courses on or off campus for one-half of the freshman tuition rate. Registration for off-campus courses may be completed by mail or telephone through any CLL center or the campus CLL Registration Services office. On-Campus course registration must be completed in person at the University Registration Office, 150 ASB, during the first week of classes.

Registration Services

Coordinator: Melinda Hodges

Office: Room 329, Criminal Justice Building, 6001 Cass Ave., Detroit, Michigan 48202; Telephone: 577-4671

Registration for Off-campus classes is held during the regular early and final registration periods for each University semester (see Academic Calendar, page 4). Registration forms used for such classes are available at any CLL Center or by mail from the Registration Services

Office, 6001 Cass Avenue, Detroit, Michigan 48202, on the main campus. Registration forms may be presented at any of these locations, or if registering by mail, materials and courses schedules may be obtained from and returned to the Registration Services Office. A comprehensive schedule of courses and programs offered through CLL is issued each semester. Individuals wishing to be added to the mailing list should contact the College Marketing and Public Relations Office, 6001 Cass Avenue, Detroit Michigan 48202; telephone: 577-4597.

Fees for credit classes offered by CLL are the regularly established fees of Wayne State University and published each semester in the University Schedule of Classes and the CLL Class Schedule. All fees are subject to change at any time without notice by action of the Board of Governors of the University.

Noncredit classes have no admission requirements and are open to all interested individuals.

CLL also offers courses on alternative schedules, such as seminars and workshops, that are convenient to particular audiences: Half-semester courses are offered on a regular basis at the Livonia Center.

Center for Telecommunications

Director: Paul Fiedler

The College of Lifelong Learning, in cooperation with the University Libraries and WTVS/Channel 56 maintains and operates a center for telecommunications at 77 W. Canfield, Detroit, Michigan 48202. This center is responsible for coordinating instructional television services provided by the College and maintains two twenty-four hour a day ITFS television channels, the College Cable Channel and the Working Channel, in conjunction with WTVS/Channel 56.

Marketing and Public Relations

Director: Joann Condino

The Marketing and Public Relations office cooperates with other agencies within and outside the College of Lifelong Learning to advertise CLL programs through the 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.

College Directory

Dean 577-4575
 Assistant Dean 577-4595
 Administrative Officer 577-4659

CENTER FOR TELECOMMUNICATIONS

Director 577-4636
 Studio 577-4205

DIVISION OF ADULT DEGREE PROGRAMS AND UNIVERSITY STUDIES/WEEKEND COLLEGE

Associate Dean/Director 577-4627
 Associate Director, University Studies/Weekend College 577-4627

DIVISION OF ADULT LEARNING SERVICES and COMMUNITY EDUCATION PROGRAM

Associate Dean/Director 577-4590
 Associate Director, Community Education Program 577-4591
 Coordinator, Registration Services 577-4671
 Counseling Services 577-4671

DIVISION OF METROPOLITAN PROGRAMS AND SUMMER SESSIONS

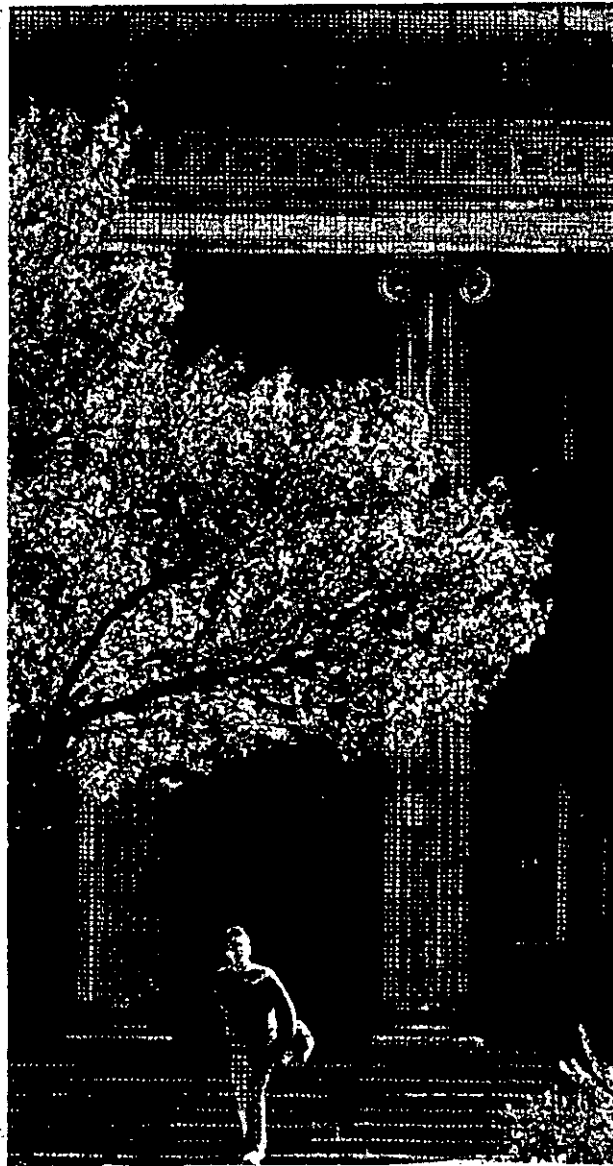
Associate Dean 577-4682
 Coordinator, Off-Campus Centers 577-4682
 Birmingham Center 577-3605 or 642-2661
 Downriver Center 577-4680 or 284-5335
 Eastside Detroit Center 577-4701
 Harper Woods Center 771-3730
 Livonia Center 284-5335
 Northeast Center 577-3590 or 771-3730
 Northwest Detroit Center 577-2937
 Southfield Center 577-3592 or 358-2104
 Sterling Heights Center 577-4470 or 978-7881

Programming Coordination 577-4682

Business Administration 577-4682
 Career and Personal Development 577-4665
 Certified Employee Benefit Specialist Program 577-4665
 Certified Financial Planning Program 577-4665
 Education 577-4616
 Engineering 577-4682
 Fine and Performing Arts 577-4682
 General Motors Technical Center Program 577-4665
 Health and Physical Education 577-4616
 Liberal Arts 577-4682
 Library Science 577-4682
 Nursing 577-4616
 Personal computing Center 577-3595 or 356-1540
 Pharmacy and Allied Health 577-4616
 Social Work 577-4616
 Telecourses 577-4636
 Urban, Labor and Metropolitan Affairs 577-4682
 Visitor's Program 577-4665

DIVISION OF MARKETING AND PUBLIC RELATIONS

Director 577-4597



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2. *Methodology*

3. *Results and Discussion*

4. *Conclusion*

5. *References*

6. *Appendix*

7. *Notes*

8. *Footnotes*

9. *Index*

10. *Summary*

Academic Calendar 1987-1989

YEAR I STUDENTS—1987-88

Registration.....	Mon., Aug. 17 - Fri., Aug. 21, 1987
Orientation.....	Thurs., Aug. 20, 1987
Classes Begin.....	Mon., Aug. 24, 1987
Thanksgiving Recess.....	Thurs. and Fri., Nov. 26-27, 1987
Christmas Recess.....	Thurs., Dec. 24, 1987 - Fri., Jan. 1, 1988
Spring Recess.....	Sat., April 16 - Sun., April 24, 1988
Memorial Day Recess.....	Mon., May 30, 1988
Final Comprehensive Examination.....	Thurs. and Fri., June 4-5, 1988
Classes End.....	Fri., June 5, 1988

YEAR II STUDENTS—1987-88

Registration.....	Mon., Aug. 17 - Fri., Aug. 21, 1987
Classes Begin.....	Mon., Aug. 24, 1987
Thanksgiving Recess.....	Thurs. and Fri., Nov. 26-27, 1987
Christmas Recess.....	Thurs., Dec. 24, 1987 - Fri., Jan. 1, 1988
Spring Recess.....	Sat., March 12 - Sun., March 20, 1988
Memorial Day Recess.....	Mon., May 30, 1988
Classes End.....	Fri., June 3, 1988

YEAR III STUDENTS—1987-88

Registration.....	Wed., July 8 - Fri., July 10, 1987
Classes begin.....	Mon., July 13, 1987
Rotation I.....	Mon., July 13 - Sat., Oct. 3, 1987
Rotation II.....	Mon., Oct. 5 - Wed., Dec. 24, 1987
Rotation III.....	Mon., Jan. 4 - Sat., Mar. 26, 1988
Rotation IV.....	Mon., March 28 - Sat., June 18, 1988
Thanksgiving Recess.....	Thurs. and Fri., Nov. 26-27, 1987
Christmas Recess.....	Thurs., Dec. 24, 1987 - Fri., Jan. 1, 1988
Memorial Day Recess.....	Mon., May 30, 1988
Classes End.....	Sat., June 18, 1988

YEAR IV STUDENTS—1987-88

Registration.....	Wed., June 24 - Fri., June 26, 1987
Classes Begin.....	Wed., July 1, 1987
Period 1.....	July, 1987
Period 2.....	August, 1987
Period 3.....	September, 1987
Period 4.....	October, 1987
Period 5.....	November, 1987
Period 6.....	December, 1987
Period 7.....	January, 1988
Period 8.....	February, 1988
Period 9.....	March, 1988
Period 10.....	April, 1988
Period 11.....	May, 1988
Residency Matching Day.....	Wed., March 16, 1988
Commencement.....	Tues., June 7, 1988

YEAR I STUDENTS—1988-89

Registration.....	Mon., Aug. 15 - Fri., Aug. 19, 1988
Orientation.....	Thurs., Aug. 18, 1988
Classes Begin.....	Mon., Aug. 22, 1988
Thanksgiving Recess.....	Thurs. and Fri., Nov. 24-25, 1988
Christmas Recess.....	Sat., Dec. 24, 1988 - Mon., Jan. 2, 1989
Spring Recess.....	Sat., April 15 - Sun., April 23, 1989
Memorial Day Recess.....	Mon., May 29, 1989
Final Comprehensive Examination.....	Thurs. and Fri., June 8-9, 1989
Classes End.....	Fri., June 9, 1989

YEAR II STUDENTS—1988-89

Registration.....	Mon., Aug. 15 - Fri., Aug. 19, 1988
Classes Begin.....	Mon., Aug. 22, 1988
Thanksgiving Recess.....	Thurs. and Fri., Nov. 24-25, 1988
Christmas Recess.....	Sat., Dec. 24, 1988 - Mon., Jan. 2, 1989
Spring Recess.....	Sat., March 18 - Sun., March 26, 1989
Memorial Day Recess.....	Mon., May 29, 1989
Classes End.....	Fri., June 3, 1989

YEAR III STUDENTS—1988-89

Registration.....	Wed. - Fri., July 6 - 8, 1988
Classes Begin.....	Mon., July 11, 1988
Rotation I.....	Mon., July 11 - Sat., Oct. 1, 1988
Rotation II.....	Mon., Oct. 3 - Sat., Dec. 24, 1988
Rotation III.....	Mon., Jan. 2 - Sat., March 25, 1989
Rotation IV.....	Mon., March 27 - Sat., June 17, 1989
Thanksgiving Recess.....	Thurs. and Fri., Nov. 24-25, 1988
Christmas Recess.....	Sat., Dec. 24, 1988 - Mon., Jan. 2, 1989
Memorial Day Recess.....	Mon., May 29, 1989
Classes End.....	Sat., June 17, 1989

YEAR IV STUDENTS—1988-89

Registration.....	Wed., June 27 - Fri., July 1, 1988
Classes Begin.....	Tues., July 5, 1988
Period 1.....	July, 1988
Period 2.....	August, 1988
Period 3.....	September, 1988
Period 4.....	October, 1988
Period 5.....	November, 1988
Period 6.....	December, 1988
Period 7.....	January, 1989
Period 8.....	February, 1989
Period 9.....	March, 1989
Period 10.....	April, 1989
Period 11.....	May, 1989
Residency Matching Day.....	Wed., March 15, 1989
Commencement.....	Tues., June 6, 1989

Foreword

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. Other campus facilities include Shiffman Medical Library, the Lande Medical Research Building, and the C. S. Mott Center for Human Growth and Development. A new clinical research building is planned for completion by 1988.

The primary mission of the School of Medicine is to improve the health of the community through its combined educational, research, and service programs. Wayne State University School of Medicine has been attentive to its obligation and commitment to multiple levels of our society. Because Wayne State has no university hospital, it 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 City and 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.

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, ophthalmology, general surgery and

a number of additional surgical specialties and subspecialties;

Hutzel Hospital, which includes among its areas of excellence: obstetrics, gynecology, gynecologic oncology, 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 Harper 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 under development.

Other Clinical Affiliations

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.

Shiffman Medical Library

Head Librarian: Faith Van Toll

Librarians: Anaclare Evans, Lora Robbins, Ruth Taylor

The School of Medicine Library is located in the Vera Parshall Shiffman Medical Library Building. The structure houses the University Libraries' medical collection consisting of some 170,000 volumes and including over 2,800 current journal subscriptions. These resources comprise the major biomedical collection in the area.

In addition to the usual circulation, reference assistance and computerized database search services to the School of Medicine faculty, students and staff, the library furnishes material to other institutions through interlibrary loan. Interlibrary loan requests number approximately 22,000 per year.

To aid community health care and health sciences education, the library cooperates with other institutions to study present information services in order to establish a suitable library network for the metropolitan Detroit area. The library operates the Detroit Cooperative Cataloging Center (DC3), cataloging the collections of fifteen major health care institutions.

Shiffman Medical Library participates as a resource library within the Greater Midwest Regional Library Network. This organization is composed of twenty-four major biomedical libraries within a ten-state area and supported, in part by federal funds through the National Library of Medicine. The Regional Medical Library's function is to provide health professionals access to the nation's biomedical information resources.

Office of Student Affairs

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.

Development and Alumni Affairs

Office: First Floor, Scott Hall, 540 E. Canfield

Director of Development: Rebecca A. Chapman

Manager of Alumni Affairs: Betty-Anne Leitch

The Development and Alumni 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. Working with the Dean, Alumni Association, Medical School Chairpersons and faculty, the corporate and foundation community, friends and University constituencies, the Development and Alumni Affairs Department sponsors programs and activities to develop understanding and support for the School's mission of education, research, and service to the community.

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 which are awarded at commencement and conducts one or more out-of-the-country postgraduate seminars each year, in addition to the School's sponsorship of reunions at several medical specialty conventions around the country. Alumni and former residents (now numbering over 6,000) and their spouses are encouraged to maintain close ties with the School, either by active participation in alumni affairs, by exchanging news notes with their class agents, or by attending and participating in various School functions. The alumni office carries out the decisions and plans made by the W.S.U. Medical Alumni Board of Governors.

The Medical School'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.

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 specialization in:

Anatomy and Cell Biology

Biochemistry

Immunology and Microbiology

Medical Physics

Molecular Biology and Genetics

Pathology

Pharmacology

Physiology

Master of Science with specialization in:

Anatomy and Cell Biology

Biochemistry

Community Health Services

Immunology and Microbiology

Molecular Biology and Genetics

Pathology

Pharmacology

Physiology

Psychiatry

Radiological Physics

Master of Arts with specialization 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.

Associate Dean for Admissions: Charles C. Vincent, 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 Requirements 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.

The specific recommendations for entrance are: general physics with laboratory, one year; inorganic and organic chemistry with laboratory, one year each; general biology or zoology with laboratory, twelve semester or eighteen quarter credits. The student is urged to select those subjects which will contribute substantially to a broad cultural background. Applicants from professional schools must have completed ninety semester credits in liberal arts courses.

It is to be noted that when students are accepted before completion of their premedical requirements, they must maintain a satisfactory scholastic average in their continued premedical work to warrant enrollment in the School of Medicine.

The *Medical College Admission Test* is required of all applicants for admission into the first year class. Students seeking admission into the September freshman class should take this test no later than October of the previous year. After a preliminary review of application credentials, interviews are held with those applicants who warrant further consideration.

Admission to the First-Year Class

The School of Medicine adheres to the acceptance procedures of the Association of American Medical Colleges, including the 'Early Decision Plan.' Admission procedures of this School are:

1. No place in the first-year class shall be offered to an applicant more than one year before the actual start of instruction for that class.
2. Following the receipt of an offer of a place in the first-year class, a student shall be allowed two weeks in which to make a written reply.
3. Payment of a \$50.00 deposit is required upon acceptance by the student of a place in the first-year class. The deposit will be credited toward the initial tuition payment.
4. No student who has at any time been requested to withdraw for any reason from a medical school in which he/she has been 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 American medical and osteopathic schools, and American citizens enrolled in foreign 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 medical or osteopathic 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 or osteopathic 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: Marjorie A. Edwards, 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

	Resident	Nonresident
Annual Tuition	\$5,330.00	\$10,660.00
Annual Student Fee:		
Years I and II	250.00	250.00
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*
During the seventh through twelfth week of classes	60%
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

Financial assistance awarded by the Office of Financial Aid is based upon demonstrated need as determined by a careful review of the student's budget and family resources.

All students are considered dependent regardless of age or marital status. 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 maximum Guaranteed Student Loan. Financial aid must be applied for each year, in February. Information is available from the Financial Aid Office.

M.D. DEGREE REQUIREMENTS

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, and biochemistry, students learn about the normal structure and function of the human body. In addition, there are units of study devoted to the neurosciences, biostatistics and epidemiology, and human values.

In the second year, through concentrated study of pathology, immunology and microbiology, and pharmacology, 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 psychiatry, human values and ethics, physical diagnosis, clinical interviewing, and the economic, social and political aspects of health care delivery.

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.

* \$50.00 is withheld only if the student withdraws from all courses.

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 Review Committee which may include: promotion, reexamination, repetition of all or part of the year, interruption or suspension 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 Review 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 Review Committee meets to review and approve or modify the recommendations of the primary evaluators. The prime function of this review is to ascertain 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 Review 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 Review 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 Review 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 Review 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). 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.



CONTINUING MEDICAL EDUCATION

Director: Gail Bank, 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. 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 600 physicians in twenty-three

specialty areas of medicine.

Openings for approximately 140 first year post-M.D. physicians are offered in the following specialties: emergency medicine, family practice, general surgery, gynecology/obstetrics, internal medicine, neurology, orthopedic surgery, pathology, pediatrics, physical medicine, radiology, urology, and transitional first year. Full residencies are offered in the following areas: dermatology, emergency medicine, family practice, general surgery, gynecology/obstetrics, hand surgery, internal medicine, 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 are a systematic part of the graduate medical education of the physicians in the program.

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

Master's and Doctoral Degrees

Director: 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.

Admission

Admission to these graduate programs is contingent upon admission to the Graduate School; for requirements, see page 13.

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 (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 six months prior to anticipated matriculation (in the month of January or February for students beginning in the fall semester);
3. Earlier applications will be accepted in most cases; and late applications may be accepted. However, the graduate programs have limited enrollment; thus, late applicants may encounter programs already filled. In addition, most financial aid competition is promulgated in the months of March and April, so that late applicants may have very limited opportunities for assistance.

The following list of Graduate Officers may be contacted through the School of Medicine, Wayne State University, 540 E. Canfield Avenue, Detroit, Michigan 48201.

Anatomy.....	Dr. Jose Rafols
Audiology.....	Dr. William Rintleman
Biochemistry.....	Dr. Charles Parker
Community Medicine.....	Dr. Rosalie Young
Immunology/Microbiology.....	Dr. Charles Jeffries

Medical Physics.....	Dr. Colin Orton
Molecular Biology and Genetics.....	Dr. Orlando Miller
Pathology.....	Mr. Michael Tyrkus
Pharmacology.....	Dr. Russell Yamazaki
Physiology.....	Dr. James Rillema
Psychiatry.....	Dr. Donald Caldwell
Radiological and Medical Physics.....	Dr. Colin Orton

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, Director of 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 related clinical fields are offered under the jurisdiction of the School of Medicine. Majors are available in the following areas: anatomy, biochemistry, Community medicine, immunology and microbiology, molecular biology and genetics, pharmacology, physiology, psychology, and radiological physics. Graduate courses available in these disciplines are listed by department in the following pages. A minimum of thirty credits are required for the master's degree. General requirements for the Master of Science degree may be found on page 25. Specific degree requirements are given in separate brochures, which are available from the individual departments.

Master of Arts

A program leading to the Master of Arts degree is offered by the Department of Audiology. A minimum of forty-three credits is required for the master's degree. General requirements for the Master of Arts degree may be found on page 25.

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, biochemistry, immunology and microbiology, medical physics, pathology, pharmacology and physiology. A new program in molecular biology and genetics is under development. 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. General requirements for the Doctor of Philosophy degree may be found on page 25. Individual departments may have supplementary requirements which are listed in brochures available from the departmental Graduate

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 usual 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 significantly shorter time than is possible by two separate degree programs. Such a program will prepare the student to assume investigative leadership in medical schools and in institutes for medical research. This program is reasonably flexible so that it can be adapted to best suit the student's discipline, needs and objectives.

Admission: A student who has shown outstanding academic excellence may be considered for the combined degree program when he/she has satisfied the requirements for admission to the Graduate School (see page 13) and has been admitted to the School of Medicine. Admission to the combined M.D.-Ph.D. program *must* be approved by the appropriate graduate department of the Medical School, and by the Deans of the School of Medicine and of the Graduate School.

— Interdisciplinary Programs

The combined M.D.-Ph.D. degree program is available in the basic medical science departments which offer Ph.D. training. Special arrangements also may be made for interdisciplinary studies between the School of Medicine and disciplines in other schools and colleges at Wayne State University.

— 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. For further information, students should refer to the appropriate section of this Bulletin.

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. However, the School attempts to generate support for all qualified doctoral students.

CURRICULAR AFFAIRS

Associate Dean: Charles F. Whitten, M.D.

Assistant Dean: George E. Dambach, Ph.D.

The Office of Curricular Affairs' major responsibility is the overall management, administration, and supervision of the undergraduate medical curriculum. In addition, Educational Services and Research, Minority Recruitment, and Conjoint Teaching Services are units under the direction of this office.

Educational Services and Research

Professor

Richard E. Gallagher

Associate Professors

Martin J. Hogan, Frank M. Koen, Norval Scott

Assistant Professor

Richard M. Frankel

The Educational Services and Research unit's mission is: 1) to improve the quality and effectiveness of various aspects of the medical training and health care delivery process; 2) to assist in the design and development of unstructural materials; 3) to encourage and implement systematic efforts to develop and improve methods and procedures for measuring student/physician learning; 4) to investigate various aspects of the behavior of health care providers and consumers and the relationship between the nature of medical training and quality of care.

The unit also offers two degree programs. One program leads to the awarding of a Master of Education degree; the other program leads to the awarding of a Doctor of Philosophy in Education degree. The programs are the joint effort of the Educational Evaluation and Research (EER) program area within the Division of Theoretical and Behavioral Foundations, College of Education; and the Division of Educational Services and Research of the School of Medicine. Both degrees are granted by the College of Education (see page 92). Detailed information on admission can be obtained from the offices of either the College or the School.

School Directory

Dean	1241 Scott Hall; 577-1335
Associate Dean for Admissions	1310 Scott Hall; 577-1466
Associate Dean for Curricular Affairs	1206 Scott Hall; 577-1546
Assistant Dean for Student Affairs	1261 Scott Hall; 577-1463
Assistant Dean for Administration and Finance	1241 Scott Hall; 577-1048
Assistant Dean for Curricular Affairs and Graduate Programs	1253 Scott Hall; 577-1455
Assistant Dean for Medical Center Relations	University Health Center; 745-5194
Assistant Dean for Veterans Administration Hospital Affairs	V.A. Hospital, Allen Park; 562-6000
Affiliated Hospitals Resident Program	University Health Center; 745-5146
Financial Aid	1374 Scott Hall; 577-1039
Records and Registration	1272 Scott Hall; 577-1470

Mailing address for all offices:

Wayne State University
School of Medicine
540 East Canfield
Detroit, Michigan 48201

Information: (313) 577-1460

ANATOMY and CELL BIOLOGY

Office: 8374 Scott Hall

Chairperson: Harry Maisel

Professors

Maurice H. Bernstein, Bent Boving, Thomas V. Getchell, Morris Goodman, Linda D. Hazlett, Gabriel W. Lasker (Emeritus), Harry Maisel, David B. Meyer, Jerald A. Mitchell, Nicholas J. Mizeres, Alex Roher, Robert P. Skoff

Associate Professors

Jose R. Alcalá, Mihir Bagchi, William J. Crossland, Harry Goshgarian, James C. Hazlett, Mauricio A. Lande, Roberta G. Pouchó, Jose A. Rafols, Martha K. Rodin

Adjunct Associate Professors

Renee Laya Boving, Arthur Hamparian, Eugene Plous

Adjunct Assistant Professors

Mark E. Ireland, James B. Stanton, Lacey Walker

Associates

Archie W. Bedell (Family Medicine), Barry A. Bogin (Anthropology), David S. Carlson (Center for Human Growth, University of Michigan), Clifford V. Harding (Ophthalmology), Raymond L. Henry (Physiology), Eugene V. Perrin (Pathology), Gino G. Saliccioli (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 13 and 313, 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 Officer or designated representative is desirable. The Graduate Record Examination with the advanced test in biology is required for unconditional admission, although a student may be

admitted on probation 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 20-28 and 313, respectively.

MASTER OF SCIENCE REQUIREMENTS: This program is offered only as a Plan A master's degree program requiring thirty credits in course work including a thesis. Course selections must include ANA 701, 702, 703, 704, 708, and 713, as well as eight credits in Master's Thesis Research and Direction.

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, 702, 703, 704, 708, and 713.

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 Anatomy and Cell Biology, Wayne State University School of Medicine, 540 East Canfield, Detroit, Michigan 48201.

COURSES OF INSTRUCTION¹ (ANA)

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 I. Cr. 6

Prereq: acceptance in School of Medicine graduate program. Lectures and dissection of the upper limbs, back, and thorax and abdomen. Written and practical examinations given for each region, including a final examination. (F)

702. Human Gross Anatomy II. Cr. 2

Prereq: ANA 701; acceptance in School of Medicine graduate program. Lectures and dissection of the pelvis and perineum, and head and neck. Written and practical examination given for each region, including a final examination. (W)

703. Human Microscopic Anatomy. Cr. 4

The microscopic structure of tissues and organs. Lectures and laboratory study. (W)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

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)

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 immunogenetics, immunogenetics, and biochemical systematics, and their application to the study of primate evolution. (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)

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

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, Bernard G. Sivak

Assistant Professors, Full-Time Affiliate

E. G. Bartholomew, Morris Brown, Samir F. Fuleihan, Marvin R. Jewell, Frances E. Noe, Michael K. Rosenberg, Orlando S. Sison, M. E. Wenokur, Grant Withey

Clinical Assistant Professors

Charles Berman, Eugene Boyle, Willard Holt, Jr., Jack A. Young

Instructors, Full-Time Affiliate

Gerald Berlin, Yale S. Falick, Carl Holsey, Vimala Kunjappan, Samuel Perov, A. Michael Prus, Renato S. Roxas, Ronald Schmier, Sidney Soifer, Selma Velilla

Clinical Instructors

Rolf W. Donath, Robert Goldberger

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

Chairperson: William F. Rintelmann

Professors

Doris V. Allen, George E. Lynn, William F. Rintelmann

Associate Professor

Dale O. Robinson

Adjunct Associate Professors

Donald W. Nielsen, Robert G. Turner

Adjunct Assistant Professor

Anthony A. Muraski

Assistant Professors; Full-Time Affiliate

Frances E. Eldis, Ronald W. Ford

Adjunct Instructor

Sabina A. Schwan

Instructor, Full-Time Affiliate

Gilmour M. Peters

Associate

Charles W. Stockwell (Otolaryngology)

Graduate Degrees

Master of Arts with a major in audiology

Doctor of Philosophy 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.

Programs of study leading to the Master of Arts and the Doctor of Philosophy are offered by this department. The Master of Arts program prepares students for the professional responsibilities of an audiologist in various types of clinical settings. The doctoral program prepares students for a career in university teaching and research involving the normal and/or impaired auditory system.

The Master of Arts program offers students broad and diverse clinical experiences under the direct supervision of the faculty and staff in several clinical settings: the University Health Center, Harper-Grace Hospitals, Children's Hospital, Veterans Administration Medical Center, and various other facilities in the Detroit metropolitan area including hearing aid dispensing centers and private physicians' offices. 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.

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 Neurology and Otolaryngology in the School of Medicine, and Psychology, and Speech Communication and Journalism 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 and Doctor of Philosophy Degrees

Admission to these programs is contingent upon admission to the Graduate School and the School of Medicine; for requirements, see pages 13 and 313, respectively. 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 with an emphasis in either biological or social sciences preferred. An honor point average of 3.0 or better is required for regular admission. Applicants to the Doctor of Philosophy program must have a master's degree, preferably in audiology or a related area, with an honor point average of 3.3 or better. All applicants must submit three letters of recommendation and must provide a written Statement of Intent with their formal application.

Scholarship: All course work must be completed in accordance with the regulations of the Graduate School and the School of Medicine; see pages 20-28 and 313, respectively.

DEGREE REQUIREMENTS: This master's degree is offered only as a Plan C master's program requiring forty-three credits of course work. Specific requirements for the Doctor of Philosophy degree are described in the Graduate School section of this bulletin, beginning on page 25; see also the entries for these programs, and the listing of audiology courses, under the Department of Speech Communication and Journalism, College of Liberal Arts, beginning on page 282. Detailed descriptions and application forms for both the M.A. and Ph.D. programs 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, 540 East Canfield, Detroit, Michigan 48201.

COURSES OF INSTRUCTION¹ (AUD)

540. (SPM 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. (S)

542. (SPM 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. (W)

544. (SPM 544) Practicum in Audiology. (Fld: 6; Lct: 1). Cr. 1
Prereq: AUD 540. Material fee as indicated in *Schedule of Classes*. Supervised training and practice for clinical certification; not open for credit to graduate students in audiology. (I)

548. (SPM 548) Clinical Instruments. Cr. 3
Prereq: graduate status in audiology. Design, calibration, and use of electro- and bioacoustic instruments in clinical audiology. (F)

640. (SPM 640) Anatomy and Physiology of the Auditory and Vestibular Systems. Cr. 4
Prereq: graduate status in audiology. Functional anatomy, physiology, and central pathways of the auditory and vestibular system. (F)

641. (SPM 641) Pure-tone and Speech Audiometry. Cr. 4
Prereq: graduate status in audiology. Fundamental principles and clinical applications of pure-tone and speech audiometry. Laboratory assignments required. (F)

642. (SPM 642) Special Audiologic Procedures. Cr. 4
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. (SPM 643) Hearing Aids. Cr. 4
Prereq: AUD 641. Electroacoustic and clinical aspects of acoustic amplifiers for the hearing handicapped. (W)

645. (SPM 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*. (Y)

740. (SPM 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)

742. (SPM 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. (SPM 743) Pediatric Audiology. Cr. 3
Prereq: AUD 641. Introduction to embryology, tests, test procedures, and counseling of parents with hearing-handicapped children. (S)

745. (SPM 745) Statistical and Experimental Procedures in Audiology I. 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)

746. (SPM 746) Statistical and Experimental Procedures in Audiology II. Cr. 4

Prereq: AUD 745. Material fee as indicated in *Schedule of Classes*. Continuation of AUD 745. Application of analysis of variance procedures to auditory, psychophysical and behavioral data. (I)

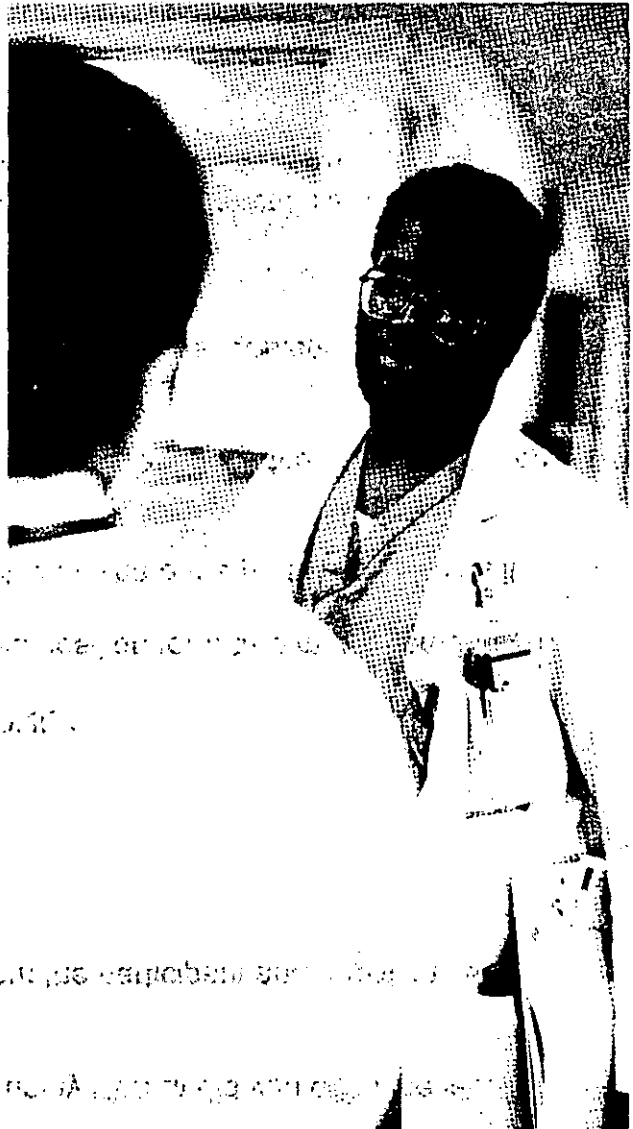
749. (SPM 749) Educational Management of Hearing Impaired Children. Cr. 3

Prereq: AUD 643, 743. Preschool guidance and counseling, modern educational models and placements options, and the role of the audiologist in educational management. (F)

843. (SPM 843) Electronystagmography. Cr. 2

Instrumentation, procedures, and interpretation of ENG recordings. (I)

848. (SPM 848) Seminar in Audiology. Cr. 3(Max. 12) (W)



¹ See page 461 for interpretation of numbering system, signs and abbreviations.

BIOCHEMISTRY

Office: 4374 Scott Hall

Chairperson: Ray K. Brown

Professors

Sam C. Brooks, Ray K. Brown, C. P. Lee, James M. Orten (Emeritus), Serge N. Vinogradov

Associate Professors

Danica Dabich, Marilyn S. Doscher, Brian F. Edwards, David R. Evans, Robert M. Johnson, James J. Lightbody, Leonard I. Malkin, Robert A. Mitchell, Richard B. Needleman, Charles J. Parker, Jr.

Assistant Professors, Full-Time Affiliates

Barkley W. Butler, Jurij Rozhin

Adjunct Professors

Craig Jackson, Joseph D. Shore, Demetrius Tsernoglou

Adjunct Assistant Professors

Raymond E. Karcher, Stanley S. Levinson

Associates

Joyce Benjamins (Neurology), Yoav Ben-Yoseph (Pediatrics), Ta-hsu Chou (Oncology), Dennis Drescher (Ophthalmology), T. H. Kuo (Pathology), Vishwanath M. Sardesai (General Surgery), Frank N. Syner (Gynecology/Obstetrics), Roger Thibert (Pathology), Edward Yurewicz (Gynecology/Obstetrics), Bennie Zak (Pathology), 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.

Master of Science and Doctor of Philosophy Degrees

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.

Admission to these programs is contingent upon admission to the Graduate School (see page 13) and the Graduate Programs of the School of Medicine (see page 313). 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 20-28 and 313, 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, 702, 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, 731, 732 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.

COURSES OF INSTRUCTION¹ (BCH)

501. General Biochemistry Lectures. Cr. 2
Prereq: quantitative analysis. 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. 3
Prereq: organic chemistry. Introduction to biochemistry (first course of the graduate sequence). Structure of biological molecules, enzymes and bioenergetics, intermediary metabolism. (F)

702. General Biochemistry Laboratory. Cr. 3-4
Prereq: quantitative analysis, organic chemistry, general biology. Material fee as indicated in *Schedule of Classes*. Methods of preparative and analytical biochemistry; analysis of biochemical data. (F)

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)

731. Advanced Biochemistry Lecture I. Cr. 3
Prereq: BCH 701 or equiv. Molecular and cell biology: advanced treatment of modern topics including DNA structure and function, transcription, translation, gene control, and recombinant technics, features specific to eukaryotic cells including membranes, cytoskeletal filaments and cell division. (W)

732. Advanced Biochemistry Lectures II. 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)

756. Special Topics in Biochemistry. Cr. 1-6
Prereq: BCH 703 or equiv. Subjects of current importance in biochemistry. (T)

766. Bioenergetics. Cr. 2
Prereq: BCH 701, 702, 703 or equiv. Current knowledge of the biochemical and biophysical properties of the respiratory chain components; control of energy generation, conservation, and utilization; structure function relationship of mitochondrial membranes. Current literature cited. (W)

767. Advanced Biochemistry Laboratory. Cr. 2-10
Prereq: BCH 702, 703. Advanced laboratory techniques as applied to investigations of biological materials. (S,F)

777. Clinical Biochemistry I. (PTH 777). Cr. 2
Prereq: BCH 703 or equiv. Biochemical theory and applications as related to the clinical laboratory. (F)

778. Clinical Biochemistry II. (PTH 778). Cr. 2
Prereq: BCH 703 or equiv., 777. Continuation of BCH 777. (W)

785. Current Topics in Biochemistry. Cr. 1
Study of current biochemical literature, on which student makes oral presentation; faculty and student discussion. (W)

789. Seminar. Cr. 1(Max. 4)
Prereq: BCH 703 or equiv. (F)

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)



¹ See page 461 for interpretation of numbering system, signs and abbreviations.

COMMUNITY MEDICINE

Office: 1369 Scott Hall

Acting Chairperson: John B. Waller, Jr.

Professor

Theodore Goldberg

Associate Professors

Allen H. Reed, Eugene P. Schoener, John B. Waller, Jr.

Adjunct Associate Professors

J. Douglas Peters, Norbert Reinstein, G. Marie Swanson

Clinical Associate Professor

David C. Nolan

Assistant Professors

Antonia D. Abbey, Rosalie F. Young

Adjunct Assistant Professors

Terrence E. Carroll, Marvin A. Cohen, Andrew W. Dahl, Dorothy Eckert, Bettye S. Elkins, J. Kay Felt, Symond R. Gottlieb, Walter A. Markowicz, William A. Satariano, Charles S. Wolfe

Clinical Assistant Professors

Stephen B. Blount, Silas Norman

Adjunct Instructors

Gerald W. Aldridge, Adger Butler, Alma P. A. Chand, James W. Walworth

Associates

Raymond Y. Demers, Paul T. Giblin, John R. F. Ingall, Charles N. Inniss, Marilyn L. Poland, James A. Sedensky

Graduate Degrees

Master of Science with a major in Community Health Services

Graduate Certificate in Community Health Services

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. This program, for students in their first and second years of medical study, includes lectures, seminars and field work in a variety of community and public health service agencies. In class and in field work activities, students deal with the concept of epidemiologic and biometric studies, alternate methods of delivering health care, financing of health care services, comprehensive and family medicine and social-legal aspects of medicine. Attention is also given to the obligations and efforts of society and government to protect and promote the health of its citizens. Collaboration with other schools in the University allows for an interdisciplinary approach to study of the health care system.

The Department also provides elective opportunities 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, 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 13 and 313, respectively.

DEGREE REQUIREMENTS: Candidates for the master's degree must complete thirty credits in course work, under Plan A or Plan B as defined on page 25. Course selections must include C M 601, 710, 724, and 725. 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 20-28 and 313, 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 13 and 313, 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 twelve 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.

Financial Aid: The University offers a limited number of Graduate Scholarships and University Fellowships available to students in community medicine programs.

COURSES OF INSTRUCTION¹ (C M)

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. 2. Prereq: C M 601 or equiv. For students in the medical care, pharmacologic, and allied health fields. Introduction to analysis of variance and research design in health investigations; linear regression

¹ See page 146 for interpretation of numbering system, signs, and abbreviations.

and correlation; enumeration data; nonparametric methods; bio-assay; statistical analysis of health data. (B:F)

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. (F)

721. Research Methods for Health Professionals. Cr. 3

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; report writing and grant applications. (F)

722. Survey of Program Evaluation in Health Services. Cr. 3

Prereq: consent of instructor. Background and history of program evaluations; different approaches; organizational and ethical issues; definition of objectives; issues in measurement, data collection and analysis; implementation of results.

724. Epidemiology. (OEH 724). 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. (S)

725. Applied Epidemiology. Cr. 3

Prereq: C M 724. Epidemiological principles and practice as applied to researchable health delivery or health questions. Design, conduct and analysis of non-experimental studies. (B)

730. Health Care Policy. Cr. 3

Required of all M.S. students in Community Health Services program. Concepts, issues, and problems in health care policy; substantive information regarding policy formulation and content. (B:W)

732. The Social Basis of Health Care. Cr. 3

Prereq: consent of instructor. Concepts, issues, and problems related to the social basis of health care; strategies and tactics for community health care organization and change.

733. Issues in Community and Public Health. Cr. 2

National, regional and local health problems and health care-delivery issues, presented and compared in lectures. Independent student field investigation of major health problem with societal implications, such as quality of care, home care, and the like. (B)

740. Survey of Health Economics. Cr. 3

Required of all M.S. students in Community Health Services program. Examination of the fundamental concepts of economics as they apply to the health sector: demands, production, cost, supply, market and non-market resource allocation. (B:S)

789. Master's Seminar. Cr. 1

Offered for S and U grades only. Required of and restricted to M.S. students in Community Health Services Program. Presentation and discussion of thesis work-in-progress and other relevant research. (S)

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)

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

Chairperson: Ken Hashimoto

Professors

Donald J. Birmingham (Emeritus), Ken Hashimoto

Clinical Professors

Jules Altman, Isadore Botvinick, Thomas A. Chapel, Ralph J. Coskey, John N. Grekin, Amir H. Mehregan, Coleman Mopper, Harold Plotnick

Associate Professors

Aurel P. Lupulescu, Earl J. Rudner

Clinical Associate Professors

Thomas F. Downham II, Richard F. Elton, Richard J. Ferrara, Syed L. Husain Hamzavi, Homayoon Rahbari, Robert J. Schoenfeld, Oscar D. Schwartz, Benjamin Schwimmer, Andrew E. Segal, Renato G. Staricco, 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, Neldagae S. Chisa, Alan D. Cohen, Carl J. Cohen, Robert P. Fosnaugh, Mohammad Ghaemi, Stanley Greenberg, Joel J. Harris, Martin Hart, Robert P. Heidelberg, Lawrence Krugel, Edward S. Lerchin, Antonina Müller, Constantin Predeteanu, Richard S. Schwartz, Marvin D. Siegel, Richard H. Smith, Daniel M. Stewart, Antoinette Tanay, Jay Victor, Harold R. Wagenberg

Instructor

Saeed A. Daneshvar

Clinical Instructors

Stanley Alfred, Barry I. Auster, David Blum, Henry G. Bryan, Stephen I. Field, Alan Fligel, Michael S. Frank, Larry E. Heath, Mark J. Jaffe, Nora Maya Kachaturoff, Joseph W. Kaufman, Sato Jean Kegler, Ronald D. Kerwin, Marvin E. Klein, Sanford Kornwise, Bruce L. Krieger, Judith T. Lipinski, Jolanta E. Malinowski, Michael J. Redmond, Jeffrey M. Shuster, Everett B. Simmons, Jr., Richard A. Stone, Allen N. Tesser

Associates

Charles D. Jeffries, Nikolai Rachmaninoff

The instructional and research activities of this department focus on the skin as a distinct organ of the body and the basic principles of medicine exemplified in the skin and its diseases are related to general body pathophysiology. This knowledge, together with the relevance of dermatology to general medical practice as well as specific diagnosis and treatment of cutaneous disorders, comprises the curricular offering of the Department.

FAMILY MEDICINE

Office: 4J, 4201 St. Antoine

Chairperson: John J. Dallman

Director of Family Practice Residency: Stanley K. Saunders

Professors

John J. Dallman, Richard E. Gallagher, Joseph W. Hess, Aaron L. Rutledge

Associate Professors

Raymond Y. Demers, Martin J. Hogan

Clinical Associate Professors

John M. Battle, Archie W. Bedell, George A. Dean, George Mogill, Jack Ryan, Paul T. Werner

Adjunct Associate Professor

Frank M. Koen

Assistant Professors

Hassan Amirikia, Yvonne Friday, Victoria Neale, Stanley K. Saunders, Martin M. Urberg

Assistant Professors, Full-Time Affiliate

John J. Escott, Hans J. Koek, Robert J. Totoff

Clinical Assistant Professors

Korkut Akan, Leonard Birndorf, Roy W. Boyer, Eugene J. Cetnar, Arthur M. Cooper, Diane A. Culik, Robert D. Danforth, Bernard Dash, Thomas J. Ganos, Christopher D. Goldsby, William G. Grannis, Frederick Grose, Cecelia F. Hissong, Samson A. Inwald, Van O. Keeler, Paula J. Kim, Charles J. Lapp, William C. Larsen, John L. Lehtinen, Dennis F. Levin, Jack A. Litwin, John W. Mackenzie, John N. Mehelas, Barbara F. Mercer, Peter F. Nowosielski, Charles W. Oakes, Gary G. Otsuji, Kris Parnicky, Frank P. Raiford III, Gerald Rakotz, Larry J. Sell, Abraham B. Solomon, Jack M. Stack, Amos Taylor III, Thomas A. Tenaglia, Larry C. Thompson, Robert J. Urban, William F. Von Valtier, Ralph F. Woodbury, Learie N. Yuille, Louis R. Zakoi

Adjunct Assistant Professors

Lois J. Martindale, Jane R. Thomas

Instructor

Dennis V. Adams

Clinical Instructors

Joseph Arens, Melvyn Friedman, Kathleen M. Fulgenzi, Gary R. Gazella, John A. Geralt, Donald G. Gerard, Michael B. Karbal, Joanne McKune, Nevena M. Mihailoff, Donald L. Newman, Robert C. Orr, Christopher J. Pabian, Howard B. Schwartz, Thomas O. Selznick, Jean Sinkoff, Michael J. Smallwood, Duane E. Smith, Anthony C. Southall, Robert Wolfe, Gayla N. Zoghlin

Adjunct Instructors

Joseph G. Dogariu, Claire M. Galed, Gerald Terlap

Lecturer

H. William Townsley

Associates

Richard D. Anslow (Internal Medicine), George Blum (Pediatrics), John B. Bryan (Internal Medicine), Robert Cubberly (Internal Medicine), Leon Morris (Internal Medicine), Kenneth Newton (Internal Medicine), Ananda S. Prasad (Internal Medicine), George Ritter (Internal Medicine), Eugene Schoener (Pharmacology), Thomas B. Stock (Internal Medicine), Ignatios Voudoukis (Internal Medicine), Edward J. Zaleski (Internal Medicine)

Undergraduate Education

In the *first year*, the Department of Family Medicine coordinates and participates in a year-long curricular unit designed to (a) introduce medical students to the need for more family physicians throughout Michigan and nationally, (b) acquaint students with the basic concepts and clinical skills of Family Medicine and other medical disciplines, and (c) examine some of the moral, ethical and organizational issues of contemporary concern in the evolution of a responsive health care delivery system designed to meet the needs of society.

In the *second year*, the Department continues orientation toward basic concerns of Family Medicine including the ambulatory approach to common clinical problems, and emphasis on psycho-social as well as biological aspects of patient care. Faculty of the Department participate in the Introduction to Clinical Medicine course designed to further refine the students' ability to take an appropriate history, perform a physical examination and apply information thus obtained to clinical diagnosis.

In the *third year*, the Department administers a required four-week rotation in Family Medicine. During this rotation, students have the opportunity for a preceptorship with a family physician engaged in full-time community practice. Students may request placements from a list of over 200 practicing physicians throughout the State, including the Upper and Lower Peninsulas and rural, suburban and urban practice settings. An alternative option to the preceptorship is a four-week Family Medicine clerkship. The Year III clerkships are specially organized educational activities based in Family Practice Residency Training Programs in the Detroit area, one of which is located in the Department's home base in the University Health Center in the Detroit Medical Center. Other placements are available in affiliated community hospital sponsored Family Practice Residency Programs in metropolitan Detroit. Formal examination and evaluation procedures are incorporated into this rotation.

In the *fourth year*, the Department offers a number of electives, including additional preceptorship experience with practicing family physicians, specially designed programs in Family Practice Residencies and other options which deal with health care delivery and primary care. An adult general medicine inpatient rotation is also offered.

Graduate Education

The Department, in cooperation with Harper-Grace and Hutzel Hospitals 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 Centers, located at the University Health Center, and adjacent to Grace Hospital. Hospital rotations are arranged through a network of five cooperating community hospitals in the Detroit area.

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 Centers and related institutions. Patient care functions are performed in collaboration with other health professionals such as clinical nurse specialists, clinical pharmacists, 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. Admissions for inpatient care are to Detroit Medical Center hospitals.

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 biophysical approaches to modifying chronic pain as seen in primary care. 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
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, Seymour Levine, Paul C. Montgomery, Robert H. Swanborg, Lawrence M. Weiner

Adjunct Professor

M. D. Poulik

Associate Professors

William J. Brown, Stephen P. Lerman, Sunil Palchaudhuri, Helene C. Rauch, V. Fay Righthand, Roy S. Sundick, Harley U. Tse

Adjunct Associate Professors

Heiner Frost

Assistant Professors

Lee Carrick, Jr., Thomas C. Holland, Lily A. Jones, Ian M. Zitron

Adjunct Assistant Professors

Jenn Chenn, Gerald Denys, Alvaro Giraldo, Frank Gnabasik, Brenda W. McCurdy, Emmy Peck, Nicholas Radoiu, Howard R. Toben, Mary P. Whitcomb

Associates

Flossie Cohen (Pediatrics), Gloria Heppner (Pathology), William Hoffman (Pediatrics), Joseph Kaplan (Pediatrics), James L. Lightbody (Biochemistry), Barbara J. McArthur (Nursing), 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 gene 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, 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 genome 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 13) and the Graduate Programs of the School of Medicine (see page 313). 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; and 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 20-28 and 313, respectively.

Master of Science: 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 25. Required courses include BCH 701; I M 701, 702, and 703.

Doctor of Philosophy: 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, Michigan.

COURSES OF INSTRUCTION (I M)

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)

660. Medical Mycology. Cr. 2

Discussions of the fungal diseases of man relating ecologic associations, disease, and laboratory diagnosis. Laboratory exercises permit isolation and gross and microscopic examination of the organisms and the application of special tests used for identification of the fungi. (I)

701. Fundamentals of Immunology. Cr. 2

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. 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)

751. Medical Microbiology. Cr. 5

Prereq: I M 750. Lectures, laboratory and quizzes in the fundamentals of bacteriology, immunology, mycology, parasitology, and virology. Cultural and serological characteristics of pathogenic microorganisms; techniques employed in the diagnosis of infectious diseases. (I)

758. Clinical Microbiology Practice. (Fld: 2). Cr. 3

Prereq: I M 551, 751 or equiv. Training and experience in the diagnostic microbiology laboratory at approved affiliated hospitals, under the supervision of the faculty of the Department of Immunology and the School of Medicine. Opportunity for students to apply training received in formal courses; introduction to problems arising in clinical work. (T)

764. Clinical Immunopathology. Cr. 2

Prereq: I M 760 or 765. Study of pathogenic conditions in which the immune system plays a major role; clinical studies. (I)

765. Immunochemistry. Cr. 2

Prereq: I M 748. Study of immune phenomena at the molecular level; chemical nature of antigens, antibodies and complement; methods of detection; theories on the mechanism of antibody synthesis. (I)

775. Bacterial Metabolism. Cr. 2

Prereq: I M 750; BCH 701 recommended. Chemical activities and organization of the bacterial cell in relation to biochemical function.

See page 461 for interpretation of numbering system, signs and abbreviations.

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. 3

Prereq: I M 780 or equiv. Principles of gene transfer; physical and genetic aspects of recombination; plasmid DNA structure, genetics and regulation. (B:W)

784. Recent Advances in Immunology and Microbiology. Cr. 1-5

Seminars in selected areas. (T)

785. Current Trends in Immunology and Microbiology. Cr. 1-5(Max. 20)

Offered for S and U grades only. Lectures and discussions of current literature and research problems. (T)

789. Seminar. Cr. 1

Offered for S and U grades only. (T)

796. Research. Cr. 1-8(Max. 12)

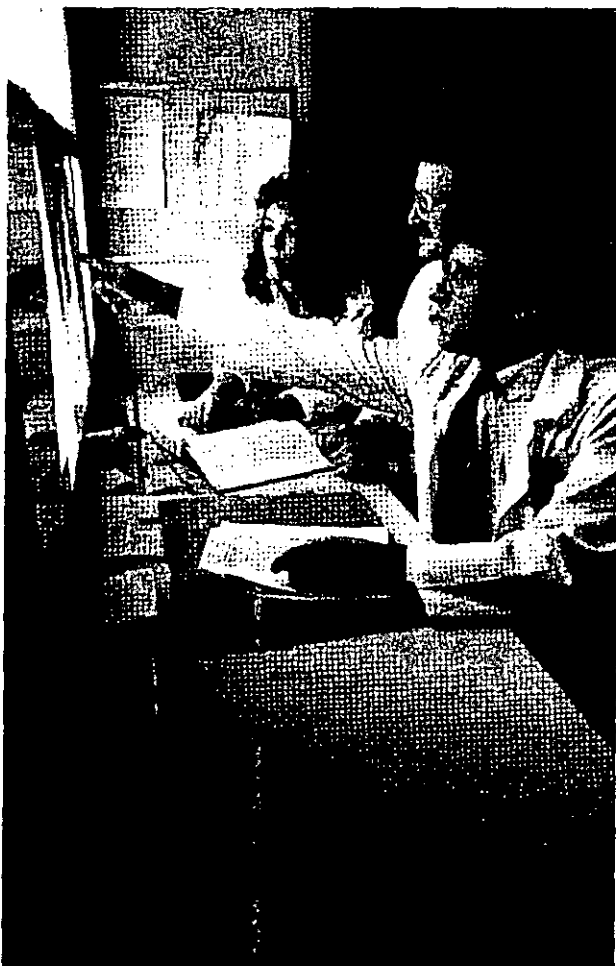
Offered for S and U grades only. (T)

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)



326 School of Medicine

INTERNAL MEDICINE

Office: 2 Webber North—Harper-Grace Hospital

Chairperson: Vainutis K. Vaitkevicius

Professors

Muhyi Al-Sarraf, Arnold R. Axelrod, Laurence H. Baker, Carter R. Bishop, Michael J. Brennan, Richard W. Carlson, Stanislav Chladek, I. Muir Clapper (Emeritus), Felix Fernandez-Mardrid, Jerome P. Horwitz, David H. Kessel, Robert A. Kloner, Stephen A. Lerner, Benjamin M. Lewis, Gordon D. Luk, Patricia Lynne-Davies, Robert E. Mack, Franklin D. McDonald, Alexander N. Nakeff, Ananda S. Prasad, Pritpal S. Puri, Melvyn Rubenfire, Michael K. Samson, Jack D. Sobel, James R. Sowers, Frederick N. Talmers, Liborio Tranchida, Vainutis K. Vaitkevicius, Manuel Valdivieso, Frederick A. Valeriote, Joshua Wynne, Jiri Zemlicka

Clinical Professors

A. Robert Arnstein, Abraham A. Becker, Nathan Brooks, Sidney Friedlaender, Franklin E. Hull, Jack M. Kaufman, A. Martin Lerner, Charles P. Lucas, Hyman S. Mellen, A. Hazen Price (Emeritus), Arnold W. Shafer, Nelson M. Taylor

Associate Professors

Michael Alkan, Nandalal Bagchi, Kenneth L. Bergsman, William Boden, Pravit Cadnapaphornchai, Thomas H. Corbett, Ralph D. Cushing, Mark B. Edelstein, Robert R. Frank, Michael A. Geheb, Jose L. Granda, George Grunberger, Stephen J. Gunther, Lance Heilbrun, Nicholas Z. Kerin, Riad Khatib, Joseph L. Kinzie, Michael H. Lehmann, Donald P. Levine, T. Barry Levine, Sudesh K. Mahajan, Charles M. McEwen, Jr., Stephen D. Migdal, Milton G. Mutchnick, William G. Negendank, Voravit Ratanatharathorn, Melvin L. Reed, Milagros P. Reyes, Bohumil A. Samal, Stephen A. Sapareto, Rick J. Schiebinger, Lyle L. Sensenbrenner, Ila Shah-Reddy, Amnuay Singhakowinta, Waldemar J. Wajszczuk, Francis M. Wilson

Clinical Associate Professors

Ali A. Abbasi, Leonard C. Alexander, Richard D. Anslow, Howard B. Appelman, Jeffrey D. Band, Thomas M. Batchelor, John G. Bielawski, Robert E. Birk, Robert W. Black, James C. Brown, Richard C. Connelly, Ralph R. Cooper, David A. Decker, Robert C. Douglass Jr., Wolf F. C. Duvernoy, C. Rupert Edwards, I. Donald Fagin, Gilbert J. Galens, Sunilendu N. Ganguly, Eugene A. Gelzayd, Abraham H. Grant, Robert H. Hamburg, Glenn I. Miller, Samuel D. Indenbau, Prem V. Khilanani, Sander P. Klein, Krishna G. Kumar, Carl B. Lauter, Stanley H. Levy, Luis C. Maas, Richard S. McCaughey, William G. McDonald, Mark R. McQuiggan (Emeritus), William H. Morse, Edward C. Nedwicki, Lloyd J. Paul, Thomas J. Petz, Joseph A. Rinaldo, Arthur Rose, Everett N. Rottenberg, Hershel Sandberg, John R. Schneider, Manuel Sklar, Rachel E. Turner, Clarence B. Vaughn, Ignatios J. Voudoukis, Freeman M. Wilner, Clyde Y. Wu, Eldred G. Zobl

Assistant Professors

Daoud K. Abu-Hamdan, Ayad M. Al-Katib, Freda L. Arlow, Joseph J. Bander, Mohammed N. Bazzi, Howard R. Beckman, Gregory E. Berger, Surjit S. Bhasin, Changiz Z. Bidari, Oscar Bigman, Robert E. Bloom, Alvin L. Bowles, Arlene Bradley, Chaim M. Brickman, Robert J. Bryg, Robert C. Burack, Colin A. Campbell, Douglas Campbell, Lavoisier J. Cardozo, Guy Chabot, Pranatharthi H. Chandrasekar, Ben D.-M. Chen, Ta-Hsu Chou, Lawrence R. Crane, Glenn D. Cummings, Sudhir G. Desai, Basim Dubaybo, Murray N. Ehrnpreis,

John F. Ensley, Jeffrey L. Evelhoch, James V. Felicetta, Brenda E. Field, Lawrence Flaherty, Richard M. Frankel, Howard Frumin, Mark J. Goldberg, Pamela R. Gordon, Hugh W. Greville, John R. Haapaniemi, Marilyn T. Haupt, James Heinsimer, Robert L. Iverson, Scott Jacober, David B. Jacobs, Richard Jaszewski, Glenn Kaatz, Chatchada Karanes, Sidika E. Kasim, Sleman Khoury, Julie A. Kish, Dana G. Kissner, Paul Z. Kissner, Pavel Komanicky, Willanc S. Krell, James A. Kruse, Steven J. Lavine, Horchang H. Lee, Joseph Levy, Michael E. Maddens, Silvana Martino, Maureen D. Mayes, Massoud Motamedi, Bernhard F. Muller, Ethelann Murray, Richard Pazdur, Elizabeth A. Poplín, Karin Przyklenk, R. Stewart Robertson, Linea L. Rydstedt, Subhash C. Sabharwal, Donald J. Salberg, Arthur Santora, Muhammad S. Shurafa, Dale H. Sillix, Michael R. Simon, James H. Sondheim, Ronaldo B. Supena, Efsthathios S. Tapazoglou, Zoltan G. Turi, Enrique Urdanivia, Mary F. Walsh, Harold J. Willens, Antoinette J. Wozniak, David A. Wrisley, Ernest L. Yoder

Clinical Assistant Professors

Hakam T. Abu-Zahra, Seymour S. Adelson, Edward Adler, Patricia A. Ball, Lal G. Banerji, E. Martin Barbour, Fernando Bermudez, Ratilal D. Bhakta, Oswald Bostic, Horace F. Bradfield, Ernesto R. Briones, John H. Burrows, Eulogio M. Caoili, Raymond C. Christensen, Eudoro Coello, Robert M. Cutler, Lingareddy Devireddy, Walter DiGiulio, Howard J. Dworkin, Robert H. Earhart, Michael H. Eidelman, Reginald H. Ernst, Michael J. Federman, Richard S. Fine, John M. Formolo, Marcia Fowler, Roman Franklin, John E. Freitas, Emanuel Frisch, James P. Gallagher, Steven D. Gellman, William Gibson, Donovan H. Givens Jr., Howard S. Goldberg, Herbert Goldstein, Henry L. Green, Robert J. Griffin, Subhash C. Gulati, Harcourt G. Harris, Hugh W. Henderson, Raymond Henkin, M. Colton Hutchins, David M. Jacobs, George Kadian, Sheldon M. Kantor, Bruce L. Kaplan, Gregory P. Karris, Rachel B. Keith, Vithal Kinhal, Arthur Klass, Herman Klein, Jay H. Kozlowski, Michael C. Kozonis, Robert B. Leach, Cheng-Chong J. Lee, Hahn J. Lee, Lyla J. Leipzig, Nicholas J. Lekas, Melvin A. Lester, Gerald J. Levinson, Pavel L. Lomen, Berton L. London, Gerald N. Loomus, Reuben Lopatin, Stephanie M. Lucas, Ivan J. Mader, Leslie Mandel, Donald B. McDonald, Nancy M. Mcquire, Donald A. Meier, Leonard W. Melander, Ramesh K. Mohindra, Leon H. Morris, John W. Moynihan, Ian H. Murray, 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, Claus P. Petermann, James K. Piper, Louis S. Pollens, Nicholas Radoiu, George A. Ritter, Harold Rodner, Solomon I. Rosenblatt, Leonard J. Rosenthal, Steven B. Rubin, Vinod B. Sanghi, Klaus P. Schmidt, Leonard Schreier, Paul S. Seifert, Howard S. Shapiro, Janette D. Sherman, Richard D. Silts, Young Ho Sohn, John P. Speck, Laurence E. Stawick, Thomas B. Stock, Sheldon S. Stoffer, John M. Stone, Komol Surakomol, Richard A. Wetzeli, Craig A. Wheeler, Steven Widlansky, Theodore A. Wizenberg, Stanley B. Wolfe, Samir R. Yahia, Jose E. Yanez, Jeffrey M. Zaks

Adjunct Assistant Professor

Nan K. Holmes

Instructors

Joel L. Appel, Elizabeth B. Arnold, Kathy L. Biersack, Marie Bissery, Richard M. Butler, Ricardo Calzada, Peter E. Carson, Ravi Dhar, Pamela Gordon, Syed Jafri, Robert Joseph, Genise E. Kerner, Vijay Kudesia, Carl K. Liapcheff, Renato Mandanas, Boaz Milner, Ramesh Padiyar, Rene Peleman, Noreen F. Rossi, Howard H. Schubiner, Mohamed S. Siddique, Barbara Siepierski, Richard Sola, Russell T. Steinman, James C. Sunstrum, Mary B. Tupper, Gerald Turlo, Lawrence Warbasse, Nagi S. Zaki

Clinical Instructors

Fazal Ahmad, Naseer Ahmad, Syed Amouzegar, Sidney Maskin, Gary G. Bill, Thomas H. Billingslea, William L. Bristol, Douglass G. Campbell, William R. Carion, Allan W. Chernick, Prabhjeet K. Chhatwal, Leon A. Crumley, Derek G. Desouza, Josephine P. Dhar, Allan E. Dobzyniak, Vilma S. Drelichman, Kenneth J. Dziuba, Michael H. Eidelman, Bruce M. Eisenberg, Juan A. Estigarribia, Gregorio V. Ferrer, Elliott N. Fraiberg, Adrian T. Go, Charles G. Godoshian, Michael A. Grishkoff, Kurt G. Hesse, Stephen D. Hoerler, Pankaj Hukku, Fikry F. Ibrahim, June Jones, Satish N. Kamath, Konstantinos Kapordelis, Edwin C. Kerr, Raphael J. Kiel, Gregory W. Kulesza, Mohan Lall, James E. Lawson, Murray B. Levin, Walter C. Livingston, Pavel L. Lomen, Lawrence J. McNichol, Jeffery A. Meer, Rajeev Mehta, Madjid Mesgarzadeh, Edward Y. Mishal, Ildy V. Molnar, Barry M. Moss, Gordon M. Moss, Lee H. Pai, Ronald D. Pelavin, Mary M. Pikus, Juan C. Rojas, Herbert W. Rossin, Harry H. Rozenweig, Paul E. Ruble, Jagdish K. Sachdeva, Vijay Saigal, Mario D. Santiago, Johann Schmidt, William C. Sharp, Alok Shukla, Hershel A. Shulman, Oscar R. Signori, Sudarshan K. Singal, William Solomon, Freddy R. Sosa, Joseph P. Uberti, Sudhir S. Walavalvar, Henry Yee, Russel H. York, David J. Young, Mark M. Zalupski, Ratna K. Zampani, Syamasundera B. Zampani, Saeed K. Zanjani

Lecturer

Frances W. Beck

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 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 recent expansion of the Department of 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

Chairperson: Orlando J. Miller

Professors

Morris Goodman, Dorothy A. Miller, Orlando J. Miller

Associate Professors

Lawrence Grossman, George Grunberger, R. Thomas Taggart

Assistant Professor

Leon Carlock, Joan Dunbar, David I. Smith

Through teaching and research, this department strives to give the future physician an understanding of the molecular genetic basis of human health and disease, and an appreciation of the role of molecular genetics in effective diagnosis, treatment and prevention of disease. This newly-organized department will offer 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. Inquiries about these programs should be directed to the Graduate Officer, Department of Molecular Biology and Genetics.



NEUROLOGY

Office: 6E University Health Center

Chairperson: Robert P. Lisak

Professors

Joyce A. Benjamins, Robert P. Lisak, Ernst A. Rodin

Professor, Full-Time Affiliate

Roger M. Morrell

Clinical Professors

Raymond B. Bauer, John Gilroy

Associate Professor

John T. McHenry

Associate Professors, Full-Time Affiliate

Sheldon Kapen, Peter LeWitt, Michael A. Nigro

Clinical Associate Professors

Louis E. Rentz, Sheila Sheehan, Janusz J. Zielinski

Adjunct Associate Professor

Ivan LuQui

Assistant Professors

Bernard A. Bast, Paul A. Cullis, MaryAnn Guidice, Margaret E. Martens, Patti L. Peterson, Laurace E. Townsend

Assistant Professor, Full-Time Affiliate

Narayan P. Verma

Clinical Assistant Professors

David Benjamins Joseph Chandler, Jose U. DeSousa, John A. Hughes, Demetrios Kikas, M. Zafar Mahmud, Jasper McLaurin, Robert C. Schwyn, Norman Wechsler

Clinical Instructors

Jacob Daniël, Chandrakant Desai, Raina M. Ernstoff, Cesar D. Hidalgo, George P. Kalas, Jay Kaner, David Lustig, Mark A. Olson, Ayman Rayes, Saleem Tahir

Associates

Ramon Berguer (General Surgery), Robert F. Eriandson (Electrical and Computer Engineering), Morris Goodman (Anatomy), Zwi Hart (Pediatrics), John R. Ingall (Surgery), Chuan-Pu Lee (Biochemistry), George E. Lynn (Audiology), Jeffrey L. Ram (Physiology), Helene Rauch (Immunology and Microbiology), Harvey I. Wilner (Radiology), David Wolfe (Pathology), Gertraud H. Wollschlaeger (Radiology)

Undergraduate Education

The Department of Neurology provides instruction in all years of the medical curriculum. Clinical demonstrations of common neurological abnormalities are presented to students during the first year. In the second year, the neurosciences curriculum consists of both lectures and demonstrations on neurological topics. During the third year, students rotate through the neurology units at one of the W.S.U. affiliated hospitals for a period of two weeks, at which time students receive bedside teaching and are given responsibilities in patient management. The fourth year is entirely elective and programs for four, eight or twelve weeks are offered to interested students. The student works directly with an assigned attending neurologist and assumes considerable responsibility for patient evaluation and management in both inpatient and outpatient settings.

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 at the second post-graduate year level of training.

Research Fellowships

Research fellowships for medical students are available to students in their third and fourth years. They are of two types: a short summer research program during which the student works on one of the two neurology units for a period of six to eight weeks; and a fellowship given to students who show an interest in research on a neurological topic to be conducted during the student's spare time in his/her third and fourth year over the whole of the academic year. Interested students are encouraged to make application to the Department of Neurology.



NEUROSURGERY

Office: 6E University Health Center

Chairperson: L. Murray Thomas

Professors

Voigt R. Hodgson, L. Murray Thomas

Associate Professor

William R. Darmody

Clinical Associate Professor

Arthur B. Eisenbrey

Clinical Assistant Professors

Blaise U. Audet, Robert E. M. Ho, Gerald A. Moore, Antonio A. Quiroga

Instructor

Carlos A. Arce-Puyo

Associates

Albert I. King (Engineering), Harvey I. Wilner (Radiology)

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

Chairperson: Robert J. Sokol

Professors

Ernest L. Abel, Joel Ager, S. Jan Behrman, Bent Boving, Gunter Deppe, Federico Mariona, Orlando Miller, Kamran Moghissi, Henry Nadler, Anthony Sacco, Alfred Sherman, Robert Sokol, Joan Stryker

Clinical Professors

Silvio Aladjem, Julian Smith

Associate Professors

Yoav Ben-Yoseph, Janet Hankin, John Laferla, David Magyar, Bernard Mandelbaum, E. Ralph Margulis, Marilyn Poland, Frank Syner, Charles Vincenti, Edward Yurewicz

Clinical Associate Professors

William Floyd, Sami Guindi

Assistant Professors

Khalid Ataya, Rupinder Bhatia, Sidney Bottoms, William Chavis, Lawrence Chik, Mitchell Dombrowski, Mark Evans, Milton Goldrath, Moustafa Hassan, Marie Hayes, Minuchehr Kashaf, George Kazzi, Don Krohn, Robert Lorenz, John Malone, Vinay Malviya, Ruth Moore, John Musich, David Richardson, David Schwartz, Marappa Subramanian, Dottie Watson, Robert Welch, Ivan Zador

Clinical Assistant Professors

Anan Abdelrahman, Melvern Ayers, William Bentley, Mostafa Bonakdar, S. Leonard Cohn, Julius Combs, Robert Dustin, James Gell, Eli Isaacs, Stanislaw Jaszczak, William Jevons, James Kornmesser, Edward Lichten, Henry Maicki, Philip Pevan, Addison Prince, Michael Prysak, N.S. Rangarajan, Charles Sempere, Joseph Stern, John Tulloch, James Wardell, Irvin Wilner

Instructors

Curtiz Meriwether, Richard Reid

Fellows

Charla Blacker, Richard Bronsteen, Kenneth Ginsburg, Honor Wolfe, Nancy Teaff, Beth Brindley, Mary Helen Quigg, Gregory Goyert

Clinical Instructors

Julio Acosta, Mohammed Ariani, Mohammed Aussie, Mehmet Bayram, Allen Berlin, Jay Berman, Charla Blacker, Donald Blitz, Murray Brickman, Beth Brindley, Richard Bronsteen, Robert Chaitin, Ronald Cheek, Chin-Chuh Chen, Harry Doerr, Jeannette Espy, Kenneth Ginsburg, Gregory Goyert, Nancy Hildebrandt, Cecil Jonas, James Labes, Chitranjan Lall, David Lipschutz, John Malone, Eugene Otlewski, Mary Helen Quigg, Michael Roth, Saeed Saleh, Michael Salesin, Franklin Seabrooks, George Shade, Eugene Snider, Nancy Teaff, Joseph Watts, Honor Wolfe, Seymour Ziegelman

Associates

Hassan Amirikia, 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, gynecologic endocrinology/infertility, and reproductive genetics. In addition, emphasis is placed on family planning and contraceptive technology, sonographic imaging, psychosexual issues, and computer applications in treatment, diagnosis, and research. The faculty integrates basic science and clinical research into clinical practice.

Students gain clinical experience in obstetrics and gynecology in Detroit Medical Center Hospitals—Hutzel, Harper-Grace, and Detroit Receiving—in addition to other affiliated hospitals: 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.



OPHTHALMOLOGY

Office: 101 Kresge Eye Institute
Chairperson: Robert S. Jampel

Professors

Edward S. Essner, Robert N. Frank, Clifford V. Harding, Jr., Robert S. Jampel, Irene E. Loewenfeld, Dong H. Shin

Adjunct Professor

Venkat N. Reddy

Associate Professors

John W. Cowden, Ignaz M. Rabinowicz, Thomas C. Spoor, Fred Zwas

Clinical Associate Professors

David Barsky, Mark S. Blumenkranz, Conrad L. Giles, Lawrence L. Stocker, Michael T. Trese

Clinical Assistant Professors

John D. Baker, John P. Clune, Jo D. Issacson, Howard C. Joondeph, Sheldon D. Stern, Floyd S. Tukul, James E. Watson

Adjunct Assistant Professor

Fritz W. Jardon

Clinical Instructors

William C. Albert, Robert P. Blau, Jerome D. Davis, Lawrence B. Edelman, Maurice A. Hall, Joseph A. Liioi, Marion G. McCall, Alan M. Mindlin, Frank A. Nesi, Robert J. Netzel, Hanna Obertynski, Joel M. Pelavin, John M. Ramocki, Shirley T. Sherrod, Les I. Siegel, Patrick M. Verb, Patrick Villani, Noel A. VonGlahn, 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 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 Harper-Grace Hospitals, 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, as well as a two-year teaching program for ophthalmic technicians and continuing graduate medical education programs.

ORTHOPEDIC SURGERY

Office: 7C Detroit Receiving Hospital/University Health Center
Chairperson: Richard L. Lamont

Adjunct Professor

Albert I. King

Associate Professors

Richard L. LaMont, James R. Ryan, Gino G. Saliccioli

Clinical Associate Professors

Maxwell B. Bardenstein, Maurice E. Castle, James J. Horvath

Adjunct Associate Professor

Harry G. Goshgarian

Assistant Professors

David D. Aronson, Jerome V. Ciullo, Thomas R. Highland, Arthur Manoli II, Berton R. Moed

Clinical Assistant Professors

Milton M. Green, Richard H. Hail, Eugene D. Horrell, G. Richard Jones, Shin-Young Kang, Mark P. Koniuch, Robert S. Levine, Lawrence G. Morawa, Peter Palmer, Guy Pierret, Bala S. Prasad, L. James Roy, William H. Salot, Charles J. Sutherland, Robert A. Teitge

Clinical Instructors

Edward F. Burke, Walter L. Everett, James J. Faremouth, William R. Fulgenzi, Michael J. Geoghegan, Edward S. Jeffries, Wallace E. Johnson, Stuart A. Katz, Christopher L. Lee, Ronald E. Little, John M. McCollough, Leonard M. Pickering, Carl E. Reichert, Jr., L. Carl Samberg, Daniel E. Schechter, Joseph Shurmer, 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

Office: 5E University Clinics Building, 4201 St. Antoine

Chairperson: Robert H. Mathog

Professors

Arnold M. Cohn, Robert H. Mathog, Charles W. Stockwell

Clinical Professors

G. Jan Beekhuis, I. Jerome Hauser (Emeritus), Bruce Proctor, Lyle G. Waggoner

Associate Professor

Dennis G. Drescher, Darlene W. Mood

Clinical Associate Professors

Phillip M. Binns, Ned I. Chalat, James Coyle, Paul J. Dzui, Daniel E. Martin, T. Manford McGee, Richard R. Royer, Miles Taylor, Dieter Wendling

Assistant Professors

John R. Jacobs, Thomas P. Kerr, John R. Siddoway

Clinical Assistant Professors

John A. Fushman, Pierre F. Giammanco, John W. Grigg, Roy Goodman, Edward B. Harrington, H. John Jacob, James K. Johnson, James McKenna, Daniel D. Megler, James Mimura, William J. Rice, Michael E. Rollins, Eugene Rontal, Michael Rontal, Martin B. Trotsky

Instructors

Marian J. Drescher, Mark T. Marunick

Clinical Instructors

John Alter, Donald Baltz, Francis LeVeque, Robert G. Rosen, Edward D. Sarkisian, Douglas D. Strong

The undergraduate teaching program of the Department of Otolaryngology 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

Chairperson: Joseph Wiener

Professors

William J. Brown, Robert D. Coyle, 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, Bennie Zak

Clinical Professors

Jay Bernstein, James J. Humes, James W. Lander, Rosser L. Mainwaring, Barbara F. Rosenberg, Julius Rutzky, Jacob N. Shanberge, Richard H. Walker

Adjunct Professor

Gloria H. Heppner

Associate Professors

Majid A. Alousi, Surath K. Banerjee, Dinyar B. Bhatena, A. Joseph Brough, Jan Cejka, Balvin H.L. Chua, Chung-Ho Chang, Andrew R.W. Climie, Clement A. Diglio, Merlin E. Ekstrom, Suzanne E.G. Fligel, Barbara J. Jenkins, Karel Kithier, Tuan H. Kuo, Stanley S. Levinson

Clinical Associate Professors

Jacob E. Briski, John F. Fennessey, Kenneth A. Greenawald, Carl M. Hasegawa, Molly T. Hayden, Khang-Loon Ho, Herbert I. Krickstein, Noel S. Lawson, Aaron Lupovitch, Gerald H. Mandell, Haresh G. Mirchandani, Waldemar A. Palutke, John T. Piligian, Theodore A. Reyman, Boris K. Silberberg

Adjunct Associate Professor

Emanuel Epstein

Assistant Professors

Joseph D. Artiss, Raj D. Bhan, Harish Budev, Alina M. Domanowska, William F. Fitter, Paula Grammas, W. Dwayne Lawrence, Patrick M. Long, Sudha Narang, Myung S.Y. Pak, Kenneth C. Palmer, Alistair S. Sundareson, Michael A. Tyrkus, Richard J. Zarbo

Clinical Assistant Professors

Gary S. Assarian, Billy Ben Baumann, Edward G. Bernacki, Jr., Donald R. Brock, Song H.N. Chae, Sajal P.L. Choudhury, Thomas F. Dutcher, Marilee H. Frazer, Alvaro A. Giraldo, Paul A. Goodman, Barry R. Herschman, Judith A. Hoschner, Sharada S. Hulbanni, Mujtaba Husain, Frederick L. Kiechle, Allen J. Levine, John H. Libcke, Denis A. Luz, Lawrence E. Nathan, Jr., Anthony C. Noto, Avis M. Olson, Richard J. Pollard, Joseph T. Powner, Opas Ratanaproska, Candace A. Rich, Thomas O. Robbins, Michael F. Schaldenbrand, Marie F. Tenazas-Raval, Benjamin S. Turla, Alexander S. Ullmann, Frank B. Walker, John C. Watts, Richard K. Wesley, Richard M. Zirkin

Adjunct Assistant Professors

Carolyn S. Feldkamp, George A. Fisher, Amy M. Fulton

Instructors

John C. Blaustein, Maria E. Dan, Ghada Khatib, Joseph R. Merline, Hema Venkat

Clinical Instructors

Michael P. Abrash, Bader J. Cassin, Gerald A. Feigin, Gilbert E. Herman, Ian C. Hood, Smita K. Joshi, Sawait Kanluen, Mark D. Kolins, Thomas F. McCormick, Thomas C. Peebles, Donald R. Peven

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 13 and 313, respectively. Applicants to this doctoral program should have a background in one of the chemical or biological sciences. Students with diverse backgrounds will be considered individually if they have special competence related to one of the departmental interests. Applicants are expected to provide their scores on the Graduate Record Examination, 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 20-28 and 313, respectively.

DEGREE REQUIREMENTS: Requirements for students enrolled in the doctoral degree programs are described in the Graduate School section of this bulletin, page 25. Students are expected to demonstrate their understanding of a core curriculum, consisting of general pathology, microanatomy, biochemistry, physiology, cell biology, pharmacology, medical statistics, clinical biochemistry, comparative pathology, analytical toxicology, and immunology and microbiology, 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, nephropathology, cell biology, molecular biology and genetics, virology and tissue culture, comparative pathology, tumor biology and immunology, neurobiology and neuropathology, cytopathology, pulmonary and environmental pathology, perinatal pathology, and forensic pathology. In the field of clinical laboratory sciences the areas of study include: clinical chemistry, chemical pathology, clinical microbiology, immunohematology, immunochemistry and immunopathology, thrombosis and hemostasis, hematopathology and clinical immunology, immunogenetics and cytogenetics.

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.

COURSES OF INSTRUCTION¹ (PTH)

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)

701. Immunochemistry and Plasma Protein Pathology. Cr. 2

Prereq: BCH 701, BCH 703; I M 748. Basics of immunochemical methods which are widely employed for the detection and study of dysproteinemias and many other disorders of body fluids and tissue protein metabolism. (B;W)

702. Tissue Culture: Methods and Applications. Cr. 3

Prereq: BIO 600. Lecture and laboratory introduction to organ and cell culture techniques. (I)

703. Viral-Related Human Disease. Cr. 2

Prereq: PTH 700. Etiology, pathogenesis, pathology and diagnosis of viral-related human disease. (I)

704. Principles of Analytical Toxicology. Cr. 2

Prereq: PHC 750 and PTH 725. Analysis of drugs in biological samples in conjunction with symptomatology of poisoning, metabolic transformations and therapeutic procedures. (Y)

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)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

- 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)
- 729. Biochemical Pathology I. Cr. 2**
Prereq: BCH 701, BCH 703. Alterations of biochemistry associated with disease processes, with emphasis on the application of newer biochemical principles. (B)
- 730. Biochemical Pathology II. Cr. 2**
Prereq: PTH 729. Continuation of alterations of biochemistry associated with disease processes; emphasis on application of newer biochemical principles. (B)
- 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)
- 739. Cancer Biology. Cr. 2**
Prereq: BCH 701, BCH 703; PTH 700. Readings and discussion on current topics in experimental oncology, including neoplastic development, carcinogenesis, progression and metastasis, and host responses. (I)
- 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)
- 744. General Comparative Pathology. Cr. 2**
Prereq: PTH 700. Fundamental mechanisms and manifestations of disease; emphasis on animal disease. Selected pathophysiologic processes involving the major organ systems. (S)
- 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)

- 756. Biochemistry of Muscle Contraction. Cr. 2**
Prereq: BCH 701, BCH 703. Composition, molecular structure and enzymatic aspects of muscle; the molecular dynamics associated with contraction; and patho-biochemical adaptations in myosin ATPase. (I)

- 777. (BCH 777) Clinical Biochemistry I. Cr. 2**
Prereq: BCH 701, BCH 703. Practice of clinical biochemistry in a hospital or reference laboratory; background in direction of clinical chemistry laboratories. (F)

- 778. (BCH 778) Clinical Biochemistry II. Cr. 2**
Prereq: BCH 701, BCH 703. Continuation of PTH 777. Clinical biochemistry background in the direction of hospital or reference laboratories. (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

Chairperson: Alan B. Gruskin

Professors

Flossie Cohen, Sanford Cohen, Adnan Dajani, Larry Fleischmann, Alan B. Gruskin, Ralph Kauffman, Ingeborg Krieger, Jeanne Lusher, Henry L. Nadler, William Pinsky, Ronald Poland, Charles Whitten

Clinical Professor

William Montgomery

Associate Professors

Regine Aronow, Yoav Ben-Yoseph, Ralph Cash, James W. Collins, Barbara Cushing, Reuben Dubois, David Faigenbaum, Paul Giblin, Zwi Hart, Susumu Inoue, Joseph Kaplan, Joseph Miceli, Michael Nigro, Enrique Ostrea, Ward Peterson, Yaddanapudi Ravindranath, Arthur Robin, Ashok P. Sarnaik, Seetha Shankaran, M.C. Thirumoorthi, Robert W. Wilmott

Clinical Associate Professors

E. Bryce Alpern, Nasir Haque, Charles Inniss, Thaddeus Joos, Gerald Katzman, Ruben Kurnetz, James C.S. Perrin, Ali Rabbani, Richard Ryszewski, Natalia Tanner, Arthur Thompson, Seetha Uthappa

Assistant Professors

Basim I. Asmar, Erawati Bawle, Mary P. Bedard, Kanta Bhambhani, Virginia Black, Robert O. Bollinger, Sheldon Brenner, Eugene Cepeda, Sandra Clapp, Lakshmi Das, Jay Eastman, Howard Fischer, Yvonne Friday, Herman B. Gray, Man-Ching Hsu, Bharati Hukku, Nestor Ilagan, William L. Jackson, Peter Karpawich, Nadya Kazzi, Thomas Koepke, Gary Lerner, Ellen Moore, Patricia Moylan, Helen Papaioanou, Burton Perry, Daniel C. Postellon, Douglas Roberts, Norman Rosenberg, Sharada Sarnaik, Jay Shayevitz, Patricia Siegel, Ellen W. Sonda, Stephen Sturman, Vasundhara Tolia, Michael Tyrkus, Indira Warriar, Hu-Hsin Wu

Clinical Assistant Professors

David Benjaminis, E. Dalton Black, Marshall Blondy, George Blum, Avinash Chawla, Michael A. Facktor, Carl Gagliardi, Max Garber, Seymour Gordon, John P. Harm, Louis Heyman, William Howard, Theresa Hsu, Myung Ine, Bahman Joorabachi, Josef Kobiljak, Frederick Margolis, Irving Miller, Abdul M. Mirza, Wallace Nichols, Helen Nutting, Joseph Rivkin, Robert Rooney, William Rubinoff, Hadi Sawaf, Robert Scherer, Emily Seydel, Allen Sosin, Harvey Stein, Gerald Timmis, Nestor J. Truccone, James Trumpour, John Turnbow, Geetha John-Valampampil, Allen Weiner, Rosalyn Weintraub

Adjunct Assistant Professors

Andrew Maltz, Neil Massoud, Steven Spector

Instructors

Jang-Sik Chung, Sudershan Grover, Mark Horton, Steven Kreshover, Ji Baik Kim, Keh-Chyang Liang, Howard Schubiner, Juan Sotomayor, Kalavathy Srinivasan, Sharon L. Tice, Helen Tigchelaar, Thurza Wright

Clinical Instructors

Juan E. Alejos, Emel Bayor, Nirmala Bhaya, Jurin Boriboon, Irving Burton, Robert H. Burge, Helen Byrd, Shobha Chandra, Barbara Chapper, Wyman Cole, Robert Cooper, Eugene Crawley, Rajendra Desai, Joseph Desiato, Margaret Dietze, David Dinger, Sisinio Ferandos, Nathan Firestone, James Fordyce, Gayatri Garg, William Gatfield, Steven Glickfield, Madan Gupta, Rao Guthikonda, Ceres Guzman-Morales, Anne-Marie Ice, Philip Jackson, Amir Kagalwalla, Mary Kokosky, Seymour Krevsky, Alfred K. Newton, Robert Roman, Jorge Rose, Mark Roth, Daniel Schnaar, Marrion Scott, Stanford Singer, Kamilia Snyder, Donald Steepe, Meena Vohra, Joyce G. Wolf, Melisande Womack, Petronio Yadao, Robert Zink

Associates

A. Joseph Brough (Pathology), Jan Cejka (Pathology), Chung-Ho Chang (Pathology), Joseph Fischhoff (Psychiatry), Linda Hryhorczuk (Psychiatry), Michael Klein (Surgery), Richard LaMont (Orthopedic 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), Jacqueline Roskamp (Pathology), Julius Rutzky (Pathology), Thomas Slovis (Radiology)

Formal teaching by the Department of Pediatrics takes place during the third year of the medical school program, in the patient units and clinics of the Children's Hospital of Michigan. The student's role in this instruction constitutes a clerkship, the aim of which is to acquaint him or her 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 and after the clerkship, since Departmental members contribute to the curriculum of basic science courses and provide 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 share of the role of a primary caretaker under the supervision of the resident staff in advanced years of pediatric training. Experience in the areas of subspecialization in pediatrics 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 documentation regarding programs may be obtained by writing to the office of the Chairperson of the Department.

PHARMACOLOGY

Office: 6374 Scott Hall

Chairperson: Paul F. Hollenburg

Professors

Gordon F. Anderson, Saradindu Dutta, Harold Goldman, Paul F. Hollenburg, Ralph Kauffman, David Kessel, Bernard H. Marks

Associate Professors

George E. Dambach, Mary Ann Marrazzi, Roy B. McCauley, Joseph Miceli, David R. Schneider, Eugene P. Schoener, Bonnie F. Sloane, Russell K. Yamazaki

Associate Professor, Full-Time Affiliate

Gregory F. Oxenkrug

Assistant Professor

Douglas G. Roberts

Graduate Degrees

Master of Science in Pharmacology

Doctor of Philosophy in Pharmacology

Pharmacology is the study of the action of chemicals on living systems, ranging in complexity from cells to intact organisms to societies. Research in pharmacology may involve species from microorganisms to man, either normal or diseased. The objective of pharmacology is establishment of the scientific basis for the understanding of rational therapeutics. This involves the use of drugs for the study of the mechanisms of cellular and tissue responses.

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 13) and the Graduate Programs of the School of Medicine (see page 313). 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, with an advanced test in either chemistry or biology. Personal interviews are recommended. 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 20-28 and 313, respectively.

DEGREE REQUIREMENTS: Requirements for students enrolled in graduate degree programs are described in this bulletin on page 25.

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. Other courses are arranged to meet the specific needs and interests of each student. These often include biostatistics, neuroanatomy, general pathology, in addition to advanced courses in the major fields of interest. Research in pharmacology to complete requirements for the Ph.D. degree may be selected from the various fields in which special faculty competence is found in this department, including the areas of biochemical pharmacology and toxicology, cardiovascular pharmacology, cellular pharmacology, nerve and muscle pharmacology and neuroendocrine pharmacology. 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 Graduate Officer, Department of Pharmacology, Wayne State University School of Medicine, 540 East Canfield, Detroit, Michigan 48201.

COURSES OF INSTRUCTION¹ (PHC)

503. Individual Research in Pharmacology. Cr. 2-5

Prereq: undergraduate background in biology and chemistry through organic. 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)

719. (ANA 719) Neuroscience Survey. 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)

750. Pharmacology Lecture. Cr. 4

Prereq: PSL 752, PSL 753, BCH 701. Introductory presentation of drug actions on living tissue. (W)

751. Pharmacology Laboratory. Cr. 2

Prereq: BCH 701, PSL 752, PSL 753. Experience in experimental pharmacology; methods and techniques employed in studying the effects of drugs on living tissue. (W)

752. Cellular Pharmacology. Cr. 2

Advanced presentation of basic drug actions as they affect cells, membranes and macromolecules. (B)

753. Neuropharmacology I. Cr. 2

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)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

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)

755. **Neurochemical Pharmacology. Cr. 3**
Prereq: general biochemistry. Biochemical features special to the nervous system with an emphasis on relating these to neuronal function in health and disease. 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)

760. **Analytical Micromethods of Radioimmunoassay and Enzyme Immunoassay. Cr. 2**
Prereq: graduate standing. Review principles of RIA, radio ligand binding and enzyme mediated immunoassays. Experience with RIA. Theory and technical pitfalls of EMIT, ELISA assays, computer analysis of data, PROTOL, RIANAL, QUAL and autoanal. (Y)

770. **Recent Developments in Pharmacology. Cr. 1-4(Max. 12)**
Prereq: PHC 751 or equiv. Selected topics and readings in pharmacology. (T)

771. **Individual Studies in Pharmacology. Cr. 1-5(Max. 16)** (T)

789. **Seminar. Cr. 1-3(Max. 6)**
Assigned readings and student presentation; faculty and outside speakers. (Y)

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: 824 Rehabilitation Institute

Chairperson: Leonard F. Bender

Professors

Leonard F. Bender, Joseph N. Schaeffer (Emeritus)

Professor, Full-Time Affiliate

Joseph Honet

Associate Professor

Harry O. Ingberg

Associate Professor, Full-Time Affiliate

Frank Blumenthal

Clinical Associate Professors

Frank Cullis, Myron M. LaBan, Saul Weingarten

Assistant Professors, Full-Time Affiliate

Marcel Dijkers, Mark Rottenberg

Clinical Assistant Professors

Jack Belen, Robert L. Joynt, Joseph Meerschaert, James Raikes

Instructors, Full-Time Affiliate

Candace Caveny, Maury Ellenberg, Adel El-Magrabi, Syed Iqbal, Wook Kim, Sung Jin Lim, Asit Ray

Clinical Instructors

Dong W. Lee, Michael G. Sperl, Ronald S. Taylor

Associate

Jane C. S. Perrin (Pediatrics)

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, the principal teaching facility of the Department, and at the following institutions: Harper-Grace Hospital, Detroit Receiving Hospital, Sinai Hospital, Beaumont Hospital and Children's Hospital.

PHYSIOLOGY

Office: 5374 Scott Hall

Chairperson: John W. Phillis

Professors

Paul C. Churchill, Joseph C. Dunbar, Jr., Piero P. Foa (Emeritus), Richard R. Gala, Raymond L. Henry, Felix T. Hong, Eberhard F. Mammen, Jan Nyboer (Emeritus), Lowell E. McCoy, John W. Phillis, James A. Rillema, Walter H. Seegers (Emeritus), Robert S. Shepard, Daniel A. Walz

Associate Professors

Robin A. Barraco, David M. Lawson, David G. Penney, Jeffrey L. Ram, James A. Sedensky, Douglas R. Yingst

Clinical Associate Professor

Allen Silbergleit

Adjunct Associate Professor

Anil K. Bidani

Assistant Professors, Full-Time Affiliate

Thomas R. Brown, Barry A. Franklin, Albert J. Whitty, Michael D. Wider

Associates

Samuel C. Brooks (Biochemistry), Elizabeth J. Dawe (Surgery), Thomas V. Getchell (Anatomy), George Grunberger (Internal Medicine) (Molecular Biology), Patricia Lynne-Davies (Internal Medicine), Franklin McDonald (Internal Medicine), Jerry A. Mitchell (Anatomy), Ruth T. Moore (Obstetrics/Gynecology), Alexander N. Nakeff (Internal Medicine), Karin Przyklenk (Internal Medicine), Richard C. Schaeffer (Internal Medicine), James R. Sowers (Internal Medicine), Marappa Subramanian (Obstetrics/Gynecology)

Graduate Degrees

Master of Science with a major in physiology

Doctor of Philosophy with a major in physiology

The study of physiology is an investigation of bodily function in all of its ramifications, with special emphasis on the characteristics of health and the nature of functional modifications. Practitioners in this discipline attempt to respect the concept of individuality in each case while attending to scientific consideration of the interrelationships, regulation, and control of specific organ systems and functions.

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 13) and the Graduate Programs of the School of Medicine (see page 313). 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 20-28 and 313, 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 25), 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.

COURSES OF INSTRUCTION¹ (PSL)

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)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

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)

750. Developmental Physiology. Cr. 3
Prereq: general physiology, embryology. A study of organ physiology from the developmental viewpoint. (W)

752. Basic Graduate Physiology Lecture. 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)

753. Basic Graduate Physiology Laboratory. Cr. 2(Max. 4)
Prereq: enrollment in graduate program in physiology; coreq: PSL 752. Material fee as indicated in *Schedule of Classes*. Experimental physiology of organ systems. Two semester course; two credits each semester. (F,W)

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. (B)

759. Blood. Cr. 3
Prereq: PSL 752, 753. Details of blood enzymology including hemostasis, blood coagulation, complement system, and fibrinolysis. (B)

760. Advanced Cardiovascular Physiology. Cr. 2
Prereq: PSL 752. Basic principles of heart dynamics and control techniques in measurement of cardiac function. (B)

764. Cell Physiology. Cr. 3
Correlations between ultrastructure, biochemistry and functions in normal and pathological cells. (B)

765. Surgical Physiology. Cr. 4
Material fee as indicated in *Schedule of Classes*. Lectures and laboratory sessions devoted to the basic concepts of surgical principles and techniques related to experimental physiology. (I)

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. (B)

767. 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. (B)

768. Endocrinology. Cr. 4
Prereq: PSL 752. A detailed emphasis on current research. Student participation encouraged; each student required to present a one hour lecture. (B)

782. Biophysical Principles of Transport and Interfacial Processes in Membranes. Cr. 3
Prereq: PSL 752 or equiv.; calculus. Physico-chemical mechanisms of transport and interfacial processes in biomembranes. Principles of electrophysiological measurements with laboratory demonstration.

Course designed for graduate students and advanced medical students. (B)

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: 1437 Lafayette Clinic

Chairperson: Samuel Gershon

Professors

Donald Caldwell (Psychobiology), Joseph Fischhoff, Samuel Gershon, Elliot Luby, Allen Raskin, Norman Rosenzweig, Calvin E. Schorer, Natraj Sitaram

Clinical Professors

Elissa Benedek, Alexander Grinstein, Peter A. Martin, Thomas A. Petty, Nathan Segel, Emanuel Tanay

Associate Professors

Beth Ann Brooks, Louis Chiodo, Bernard Chodorkoff, Beverly J. Fauman, Marvin Hyman (Psychology), Gregory Kapatos, Donald Kuhn, Peter LeWitt, Gregory Oksenkru, Aurelio Ortiz, Alan Rosenbaum, Antal Solym, Thomas M. Sullivan, Ronald E. Trunsky

Clinical Associate Professors

Benjamin Barenholtz, Ronald M. Benson, Victor Bloom, Dale Boesky, Melvin Bornstein, Calvin H. Chen, Sol C. Grossman, Sidney B. Jenkins, Joseph E. Lenzo, Channing T. Lipson, Pang L. Man, Robert Niccolini, Frank Parcells, Carol E. Pearson, Leonard Piggott, Kenneth Pitts, Douglas Sargeni, Kenneth Schooff, Frederick Shevin, Joseph Slusky, Max Warren

Adjunct Associate Professors

Robert Berman, Tamara Ferguson (Sociology), Jack Novick, Robert Freedman

Assistant Professors

Curtis A. Bagne (Epidemiology), Leon E.A. Berman, Linn A. Campbell, Michael Fauman, Matthew Galloway, James Granneman, David Gurevich, Lew M. Hryhorczuk (Biochemistry), Linda Hryhorczuk, Lawrence Jackson, Norman Josef, Surendra Kelwala, Leonard Lachover, Jimmie P. Leleszi, Robert Levine, Gregory Manoy, Marvin Margolis, Norman C. Moore, Robert B. Pohl, John M. Rainey, Abdul G. Riaz, Harvey Rosen, Donald G. Ross, Richard Ruzumna, Vikram Yeragani

Clinical Assistant Professors

Irwin P. Adelson, Seymour Baxter, Lary R. Berkower, Ronald W. Blatt, S.J. Breiner, Raymond Buck, Sung-Ran Cho, Cassius A. DeFlon, Jack Dorman, Fulvio Ferrari, Lionel Finkelstein, Saul Forman, Michael Freedman, Kemal Goknar, Walter Guevara, Louis Hoffman, Kenneth Israel, Nathan Kalichman, Cassandra Klyman, R.G. Mercier, Alvin B. Michaels, John Moran, Philip J. Parker, A. Petrilli, Hyomyeong Rhiew, Ralph Rubenstein, Ronald Selbst, Marvin Sherman, Gerald Shiener, Donald Silver, James Sonnega, Evangeline Spindler, Marvin Starman, Mayer Subrin, Robert S. Underhill, Habib Vaziri, Morris Weiss

Adjunct Assistant Professors

Kenneth Axelrad, Theresa Cali, Louise Centers, Randall Commissaris, David Dietrich, Frank P. Pearsall, Howard Normile, Rosalie Young

Instructors

Asaf Aleem, Emmanuel R. Casenas, Sanjay Dube, Linda Hotchkiss, K.M. Druva Kumar, Evelio Santiago, Ashok Shah, Nargis Singapore

Clinical Instructors

Tariq Abbasi, Jean Alce, S. Bham, Raman Bhavsar, Suresh Bilolikar, Mary Bridges, Pu-Min Chen, Raul J. Guerrero, Harvey W. Halberstadt, L.J. Hatzenbeler, Cyril D. Jones, Irene MacLeod, Miriam Medow, Hubert Miller, Richard Morin, Vincent Pacheco, Thomas Park, Deolixto Pascual, Slobodan Popovic, Vimal P. Puri, Nydia Quiroga, Leonard Rosen, Mohammad Saeed, Wendel Sanders, Rahul Sangal, Edward Siriban, M.J. Steinhardt, Kathiravelu Thabalingam, David Vincent

Adjunct Instructors

Harvey Altman, Karen Chapin, Glenn Good, Constance Halligan, Deanna Holtzman, Nancy Kulish, Elaine Rogan, Walter Sobota, Robert Wills (Social Work)

Associates

John Gilroy (Neurology), James L. Grisell (Psychology), Valerie Klinge (Psychology), Helen Lycaki (Psychology), Martha K. Rodin (Anatomy), Gerald Rosenbaum (Psychology), Eli Z. Rubin (Psychology), Lawrence Tourkow (Psychiatry)

Graduate Degree

Master of Science with a major in psychiatry

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, he/she is 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.

Master of Science

The Department of Psychiatry offers a program leading to the degree of Master of Science for students planning careers in teaching or research. The goal of the program is to provide a comprehensive understanding of the methodology of psychiatric research through concentrated classroom and laboratory participation under the supervision of senior graduate research staff, culminating in the preparation and defense of a thesis based on independent research. The program normally takes four semesters to complete. Modern research and teaching facilities for this program are located primarily at the Lafayette Clinic, a 200-bed research, training, and treatment center administered by the Michigan Department of Health and Wayne State University's Department of Psychiatry. Affiliated with the program are research clinicians and laboratories located at the Wayne State University School of Medicine in the Medical Center, Sinai Hospital of Detroit, the Veterans' Administration Hospital in Allen Park, and Northville State Hospital.

Admission to this program is contingent upon admission to the Graduate School (see page 13) and the Graduate Programs of the

School of Medicine (see page 313). Applicants must have a Doctor of Medicine or Doctor of Philosophy degree from an accredited institution. Preference will be given to applicants who have completed a psychiatric residency or possess a doctorate in the neurosciences (including clinical psychology). In special circumstances, an applicant possessing a master's degree in one of the neurosciences may be permitted entry to the program. Prior to consideration by the Department of Psychiatry, all applicants must meet the admission requirements of the Graduate School of the University.

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 20-28 and 313, respectively.

Admission as an applicant does *not* insure acceptance as a candidate for a degree. By the time eight to twelve graduate credits have been earned, the applicant, under the direction of the adviser, will submit a *Plan of Work* to the College Graduate Office. Candidacy is confirmed upon approval of the *Plan* by the Graduate Office.

Degree Requirements: The Master of Science in Psychiatry is offered by this department only as a Plan A master's program (as defined on page 25), requiring thirty credits in classroom and laboratory study, of which a maximum of eight credits will normally be in an independent thesis research project. All students will be required to complete PSY 715 and 716 (Quantitative Methods in Psychology I and II), and PYC 719 (Neuroscience Survey), unless granted permission to waive these requirements. Upon admission to the M.S. Degree in Psychiatry program, the candidate will be assigned a graduate faculty adviser who will assist the student in preparing a course of study and who will supervise research training.

Assistantships and Research

For information on financial assistance, students should consult or write the Graduate Officer, Department of Psychiatry, Wayne State University School of Medicine, 540 East Canfield, Detroit, Michigan 48201, and should also refer to the graduate financial aid section of this bulletin (page 30).

COURSES OF INSTRUCTION¹ (PYC)

789. **Research Seminar. Cr. 1 (Max. 4)**
Presentations by clinical and basic research staff, guest lecturers and students. (T)

790. **Directed Study. Cr. 1-3 (Max. 6)**
Study, including full literature review, of a problem of current relevance to psychiatry. Detailed guidance of adviser. (T)

796. **Research Problems. Cr. 1-3 (Max. 8)**
Independent research under supervision of departmental staff. Written final report, presentation and critique. (T)

899. **Master's Thesis Research and Direction. Cr. 1-8 (Max. 8)**
Preparation in writing of a scholarly proposal and thesis; defense by oral examination. (T)

RADIATION ONCOLOGY

Office: First Level, University Health Center

Chairperson: William E. Powers

Professors

Kenneth V. Honn, Colin G. Orton, William E. Powers

Clinical Professors

Harold Perry, H. Gunter Seydel

Adjunct Professor

Henry Blosser

Associate Professors

Khurshid Ahmad, Arnold M. Herskovic, Young H. Kim, Don P. Ragan

Clinical Associate Professor

James Herman

Assistant Professors

Donald G. Bronn, Ihn H. Han, Paul B. Lattin, Richard L. Maughan, James M. Onoda, Vaneerat Ratanatharathorn

Clinical Assistant Professors

Hang Chang, Basil Consideine, Jwong H. Ling

Clinical Instructors

Karan S. Dosi, James Gamero, Sue J. Han, Bruce Horowitz, Richard Matter, Gangadhar Vaishampayan

Adjunct Instructors

Janice Campbell, Gary Ezzell, James Spica

Associates

Diane Chadwell (Allied Health), Jeff Evelhoch (Medicine), Michael Flynn (Medicine), Jack Krohmer (Radiology), Joe Mantel (Radiology), Larry Marnett (Chemistry), Walt Nikesch (Radiology), Barbara Orton (Allied Health), Steve Sapareto (Medicine), Bonnie Sloane (Pharmacology), John Taylor (Biological Sciences)

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

¹ See page 461 for interpretation of numbering system, signs and abbreviations

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. 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 13 and 313 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 20-28 and 313, respectively.

DEGREE REQUIREMENTS: The Master of Science in Radiological Physics is offered under Plans A or B as defined by the Graduate School on page 25. 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 thesis 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.



RADIOLOGY

Office: Detroit Receiving Hospital/University Health Center

Chairperson: George A. Kling

Professor

Gertraud Wollschlaeger

Clinical Professors

Melvyn T. Korobkin, Lawrence R. Kuhns, Joseph O. Reed, Thomas L. Slovis, Maurice Tatelman, John N. Wolfe

Associate Professors

Albert Goldstein, Kenneth V. Honn, George A. Kling

Clinical Associate Professors

Philip N. Cascade, David P. Corbett, George C. Evans, Jaiil Farah, Raymond A. Gagliardi, Daniel R. Guyot, Eugene A. Harkaway, Kenneth D. McGinnis, Jaroslaw Muz, Donald L. Otto, Rodney V. Pozderac, Frederick B. Watts, Jr., Harvey I. Wilner

Adjunct Associate Professor

Joseph Mantel

Clinical Assistant Professors

Frederick Cushing, Calvin Ervin, Marvin Gordon, Lewis A. Jones, Jr., Myron H. Joyrich, John K. Kelly, Jr., Vjekoslav Mikelic, Peter R. Miller, Cynthia Nejjuk, Sarah G. Pope, Robert L. Ruskin, Francis P. Shea, Robert A. Songe, Burt T. Weyhing III, Alkis P. Zingas

Adjunct Assistant Professors

Michael J. Flynn, John J. Kim, Walter Nikesch

Clinical Instructors

Kyoung-Soo-Bae, William Moo-Won Chae, David J. Chait, John K. Drumm, Gary Galens, Denise Gray, Bijaya Jans, Thomas P. James, Henrietta A. Juras, Marc Kahn, Asha Kaza, Heung Ki Kim, Karl T. Kristen, James M. Kuhlman, Alfredo Lazo, Joyce A. Lemkin, Rene D. Loreda, Gerald B. Maltzman, Sanford Marks, Joseph Metes, Yogeshkumar Mody, Kenneth M. Nowicki, Jesus Madrid Ocampo, Navinchandra J. Parekh, Philip E. Perkins, Mark F. Pezda, Shakuntala B. Rao, Michael L. Ross, Rojanandham Samudrala, Larry N. Schultz, James A. Selis, Arthur Shufro, Robert D. Steele, Tse-Wai Tong, Isaias Villarosa, Nuromeo O. Vinluan, Sanford E. Wagenberg, Pierre A. Zayat

Adjunct Instructors

Michael G. Crowley, Cheryl Culver, Thomas M. Kumpuris

Associates

Jai Young Lee (Pathology), Colin G. Orton (Radiation Oncology), William E. Powers (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 341) for program descriptions and an outline of admission and degree requirements.

Assistantships and Research: see Department of Radiation Oncology, page 342.

COURSES OF INSTRUCTION¹ (RAD)

501. Radiological Physics I. Cr. 4

Prereq: PHY 218 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)

502. Radiological Physics II. Cr. 4

Prereq: RAD 501. Continuation of RAD 501. (W)

700. Imaging Physics I: Diagnostic Radiology. Cr. 3

Prereq: RAD 501, 502. Conventional diagnostic radiological procedures using ionizing radiation; radiography, fluoroscopy, computed tomography, digital radiography, and mammography. (B)

701. Imaging Physics II: Nuclear Medicine. Cr. 2

Prereq: RAD 501, 502. Physics of nuclear medicine, with emphasis on imaging. (B)

See page 461 for interpretation of numbering system, signs and abbreviations

- 702. Physics of Radiation Therapy. Cr. 3**
Prereq: RAD 501, 502. Lecture and demonstration in physics of radiation therapy. (B)
- 703. Imaging Physics III: Diagnostic Ultrasound. Cr. 2**
Prereq: RAD 501, 502. Diagnostic ultrasound: basic instrumentation, imaging concepts, quality assurance, biological effects. (B)
- 704. Radiation Dosimetry. Cr. 2**
Prereq: RAD 501, 502. Lecture and demonstration on principles of radiation dosimetry. Dosimetry of photons, electrons, neutrons and dose from radioactive materials. (B)
- 707. Radiation Safety. Cr. 2**
Prereq: RAD 501, 502. Lectures on radiation safety procedures and practices; governmental regulations on radiation safety. (B)
- 708. Radiological Physics Laboratory. Cr. 2**
Prereq: RAD 702. Practical laboratory exercises in ionometric and solid-state dosimetry techniques, quality assurance procedures for selected radiation therapy and diagnostic radiological equipment, supervised individual dosimetry projects. (B)
- 709. Biomedical Nuclear Magnetic Resonance. Cr. 2**
Prereq: RAD 502 or consent of adviser. 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. (B)
- 789. Seminar. Cr. 1-3(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)
- 899. Master's Thesis Research and Direction. Cr. 2-8(8 req.)** (T)
- 999. Doctoral Dissertation Research and Direction. Cr. 15**
Prereq: Consent of adviser. Offered for S and U grades only. (T)

SURGERY

Office: 6th Floor, University Health Center

Chairperson: Alexander J. Walt

Professors

Ramon Berguer, John P. Hegggers, Anna M. Ledgerwood, Charles E. Lucas, Eberhard F. Mammen, Martin C. Robson, Jerry C. Rosenberg, Yvan J. Silva, Zwi Steiger, Alexander J. Walt, Arthur W. Weaver, Robert F. Wilson

Clinical Professors

Agustin Arbulu, Eduardo A. Arciniegas, Clifford D. Benson, Adrian Kantrowitz, Robert D. Larsen, Warren O. Nickel, Norman D. Nigro, Joseph L. Posch, Harry C. Saltzstein (Emeritus)

Associate Professors

Robert D. Allaben, Brooks Bock, David L. Bouwman, Charles L. Huang, Michael P. Kaplan, Michael D. Klein, Marian McNamara, Arvin L. Phillipart, Vishwanath M. Sardesai, David J. Smith, Jr., Choichi Sugawa, 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, John R.F. Ingall, Lloyd A. Jacobs, Lyle F. Jacobson, Donald I. Kapetansky, William Lange, Frederick H. Levine, James R. Lloyd, Robert J. Lucas, Andres Resto Soto, Herbert J. Robb, Allen Silbergleit, Homer M. Smathers, Henry J. Vandenberg, Voltrad J. von Berg, Gerald S. Wilson, Scott W. Woods

Assistant Professors

Donald P. Atkinson, Pamela R. Benitez, Michael S. Dahn, Elizabeth J. Dawe, Scott B. Freeman, Ramanlal Golwala, Eti Gursel, Arnold Jones, Marc A. Levison, Mark W. Moritz, Robert M. Nelson, Linda G. Phillips, Walter G. Sullivan, Delford G. Williams III

Clinical Assistant Professors

Susan E. Adelman, Zacarias G. Asuncion, Jr., Jason H. Bodzin, Ruth Campbell, Chairat Chomchai, Vincent J. Gallant, Medhi Hakimi, Eric C. Hanson, William A. Harrity, John M. Hartzell, David B. Hawtof, Solomon R. Hochbaum, John A. Ingold, Franklin R. Jackson, Ali Kafi, Hayward C. Maben, W. Peter McCabe, Steven E. Olchowski, John R. Pfeifer, Robert M. Reynolds, Paul Rizzo, Saul Sakwa, Krishna K. Sawhney, Andrew E. Stefani, Joe G. Talbert, Oscar C. Tumacder, Satish C. Vyas, John F. Weiksnar, Daniel T. Wheatley, A. Neal Wilson, Steven M. Wolf, Michael H. Wood

Adjunct Assistant Professor

Susan M. Fleming

Instructors

Syndi R. Keats, Mary B. Staten-McCormick, Padraic J. Sweeney, Mark L. Zwanger

Clinical Instructors

O. William Brown, Paul E. Clancy, Steve F. Danosi, Munuswamy Dayanandan, Walter O. Evans, Mune Gowda, Khatchadour W. Hamamdjian, Michael T. Heuton, Joseph w. Kosnik, JoAnne Levitan, Ronald A. Rusko, Carl Sacks, Michael J. Schenden, David E. Shull, Thomas S. Siegel, Ward M. Smathers, Ross E. Tabbey

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 assigned patients for study and are encouraged to develop a sense of personal responsibility for their care.

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, Harper-Grace and Hutzel Hospitals. A unique experience is provided to each student by a three 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 both in the emergency room, on the wards, and in the Burn Center.

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: I South, Hutzel Hospital

Chairperson: James M. Pierce, Jr.

Professors

Donald J. Jaffar (Emeritus), Alan D. Perlmutter, James M. Pierce, Jr.

Associate Professor

R. Bruce Filmer

Clinical Associate Professor

Edward J. Shumaker

Assistant Professors

C. B. Dhabawala, Isaac L. Powell, James B. Smith, Jr.

Clinical Assistant Professors

Melvin L. Hollowell, Arthur J. Johnson, Charles Kessler, Joseph R. Oldford, William H. Rattner, Guy W. Sewell, Bageshwari P. Sinha

Clinical Instructors

Stephen A. Liroff, Murray S. Mahlin, Isaac L. Powell, George R. Sewell, Jr., Jeremy D. Webster

Associate

Gordon F. Anderson (Physiology)

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, twenty-six 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 and Hutzel 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

DEAN: LORENE R. FISCHER

Foreword

History

The College of Nursing began in 1930 as one of the departments of the College of Liberal Arts. During the first fifteen years the nursing programs became so varied, the enrollment so large, and the contribution to the total community so important that some commensurate reorganization was deemed necessary. Thus, in 1944, at the request of the Detroit Council on Nursing and the College of Liberal Arts, the Board of Education authorized the establishment of the College of Nursing. The College began to function as one of the components of the University in the spring of 1945.

In 1947, for the first time, the College assumed responsibility for teaching clinical nursing courses in a program leading to the degree of Bachelor of Science in Nursing. A number of hospitals and health agencies were selected by the faculty as settings for the clinical instruction and students from this program were eligible to take the examination for the registered nurse license.

Since 1945, the College has had programs in nursing leading to the degree of Master of Science in Nursing. These programs offer preparation in clinical specialties in nursing. The development of the graduate program has contributed to the strengthening of the research effort of the faculty.

The College has had substantial financial support from public and private sources such as the United States Public Health Service, the Children's Bureau, the W.K. Kellogg Foundation, Greater Detroit Hospital Fund, the Rockefeller Foundation, Richard Cohn Foundation, and the Helen Newberry Joy Fund. Support from these sources made it possible for the College to develop its clinical courses on the undergraduate and graduate levels; to have a new home, the Richard Cohn Memorial Building, in 1960; to contribute to the building of the Helen Newberry Joy residence for women students of the University; and to provide financial assistance to nursing students.

Detroit Education for Nursing via Television (DENT) began in 1966 in response to a request from the Michigan League for Nursing for the College to take the leadership in a project involving twelve schools of nursing. Initially, the project was funded by the Department of Health Education and Welfare to develop televised lessons for the schools. DENT materials are currently available through the Learning Resources Center and inquires for these materials should be directed to the Associate Dean for Undergraduate Studies.

In response to the need for advanced education in clinical nursing research, the graduate faculty in nursing developed a doctoral program leading to the Doctor of Philosophy Degree in Nursing. In October 1974, the Board of Governors approved the program, which began in September 1975. The focus of this program, and the Summer Option that was approved in 1985, is on development of in depth knowledge of nursing theories, skills in theory building, research methods and cognate disciplines.

An Office of Community Educational Services was established within the College in 1974, to promote and coordinate the development of continuing education and academic programs off-campus. With this support the master's program in nursing was transported to the Upper Peninsula of Michigan in 1975, to the west Michigan area in 1977, to Saginaw in 1979, to Traverse City in 1982, and to Kalamazoo in 1985. A part-time Outreach Bachelor of Science in nursing program for the employed nurse in the greater Detroit metropolitan area was begun in 1980.

Philosophy

The College of Nursing functions within the context of Wayne State University and supports the central goals and mission of the University: to nurture the intellectual abilities of students and faculty and to provide education, research and community service. As an urban university, Wayne State accepts responsibility for a reciprocal partnership with the community, using University resources and knowledge in dealing with urban life. This urban context of the University provides a setting for exploring the application of knowledge to professional nursing practice.

Nursing is an academic discipline and profession. As a discipline, nursing develops its body of knowledge using research as the major mode of discovery and validation. The scholarly environment of the University enhances the research and theory development endeavors of the College of Nursing. 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 practice competencies, and the faculty affirms the the necessity and value of clinical practice within a professional nursing program.

The concepts that order the discipline and profession of nursing are derived from knowledge about human beings, health care and environment. These concepts give identity to professional nursing practice and direct inquiry and theory development. Thus, the College of Nursing supports the importance of liberal arts, humanities, and sciences. The faculty believes that programs designed for the preparation of nurses must be composed of the intellectual, social and technical components of a liberal and professional education that are available to students within an institution of higher learning.

Additionally, the faculty believes that learners are self-directed and actively participate in the learning process. Self-direction encourages the development of personal goals and values significant to the profession of nursing. Knowledge acquisition, capacity for critical inquiry, reflection and decision-making prepare learners for responding to issues that confront them as professionals.

Learners from diverse backgrounds enter the College of Nursing to begin or continue their education, and the faculty believes that the diverse characteristics of its students add to the richness of the learning experience. Accordingly, the nursing program seeks to accommodate the special needs, interests and abilities of the students. The faculty supports the right of students to question, challenge and debate within the context of inquiry as an essential ingredient in the student's development. Continuing evaluation on the part of the students and faculty is essential to sustain the integrity of the program.

The faculty of the College of Nursing, as members of the academic community, recognizes that its professional functions extend beyond contributions to formal teaching. Research, practice and community service are also expectations of the faculty role. The faculty views as essential academic freedom, shared governance, opportunity to develop knowledge, and responsibility to incorporate new knowledge into teaching and nursing practice. The faculty assumes responsibility for enhancing the image of the College of Nursing and the university locally and nationally through various avenues including research, scholarship, practice, consultation and participatory decision making.

The objectives of the Master's Program are to prepare graduates of the program to:

1. Practice nursing within a theoretically based framework.
2. Use the process and methods of scientific inquiry in the study of nursing.
3. Evaluate and determine the nature of inter- and intradisciplinary collaboration required for the resolution of health care problems.

4. Formulate a position with respect to nursing's responsibility toward the political, social and ethical issues which have a bearing on the quality of health care.

The objectives of the Doctoral Program are to:

1. Prepare knowledgeable and competent researchers who contribute to the body of nursing knowledge.
2. Prepare scholars who contribute to the discipline of nursing by generating and testing nursing theories and selectively use diverse research methods.
3. Prepare leaders for the discipline and profession of nursing.

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 psychiatric-mental health nursing
child and adolescent psychiatric mental health nursing
community health nursing
nursing, parenting and families
primary care nursing—adult

Post-Master's Specialist Certificate in Nursing *Administration*

Doctor of Philosophy—with a major 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 13. 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., 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 Services.
2. Completion of Graduate Record Examinations, with a composite score (verbal and quantitative) of 800 or above.
3. A minimum of one year's experience as a registered nurse, usually in the clinical area relevant to the student's prospective major.
4. Professional competence as documented by references.
5. Current registered nurse licensure or national registration for international applicants (some majors require licensure in Michigan for all applicants).
6. A personal statement of goals for graduate study.
7. 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 majors. 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 Services, College of Nursing.

Deadline dates for filing applications are the same as for the Graduate School of the University (see page 27), but early filing by prospective full-time students is encouraged since some of the majors may be filled by the fall deadline. Unless otherwise advised, anyone planning to attend full-time should begin in the fall semester. Applications for part-time study may be submitted at any time, though clinical and many cognate courses are offered only in the fall.

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; he/she 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 Services, College of Nursing, two semesters prior to the semester for which re-enrollment is desired. Following a review by the Office of Student Services, the student will be informed of the steps needed to qualify for readmission. Preference for enrollment in required clinical courses is given to current students. Therefore, readmission is not guaranteed or may be delayed.

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 major 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 two academic years of study including forty to forty-eight 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 354 and 20-28 respectively. Credits must be distributed as follows:

	<i>Credits</i>
Clinical Major	17-24
Cognate/Related Science	6-9
Research Sequence	9-15
Elective/Minor sequence (minimum credits)	8

Concentrations currently available to satisfy these four generic requirements are detailed below. Cognates, which are clinically specific, are predetermined by selection of the clinical major and will be found as part of the individual major areas. 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 ten to fifteen 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 major 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 two academic years of full-time study. Part-time students have up to six years to complete degree 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.

Clinical Areas

— Community Health Nursing

This major 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 health care services. Nurses are prepared to practice independently or in collaboration with other professionals and consumers providing services to individuals, families, groups, and communities. The student has an opportunity to develop his/her own goals, expand their study and clinical experience in areas of individual interest.

Theory based practice emphasizes application of the principles of epidemiology, health promotion and disease prevention in the provision of services.

Clinical Requirements

	<i>Credits</i>
NUR 651 — Organization and Change in Health Care Services.....	2
NUR 710 — Theoretical Foundations of Nursing Practice.....	2
NUR 751 — Advanced Community Health Nursing.....	4
NUR 752 — Nursing Care of Families.....	3
NUR 753 — Nursing Care of Groups.....	3
NUR 754 — Nursing Care of Communities.....	3
NUR 756 — Change Strategies in Community Health Nursing.....	3
NUR 785 — Seminar in Clinical Nursing.....	2

Cognates:

Six credits in adviser-approved electives from one health social science area.

— Maternal-Child Health-Nursing, Parenting and Families

This clinical focus offers an opportunity to develop knowledge and expertise in the nursing care of childbearing and childrearing 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 Requirements

	<i>Credits</i>
NUR 710 — Theoretical Foundations of Nursing Practice.....	2
NUR 752 — Nursing Care of Families.....	2
NUR 727 — Nursing, Parenting and Families:	
Synthesis of Scientific Foundations	4
NUR 728 — Nursing, Parenting and Families:	
Evaluation of Advanced Practice.....	3
NUR 729 — Nursing, Parenting and Families:	
Validation of Advanced Practice	4
NUR 785 — Seminar in Clinical Nursing.....	2
NUR 651 or NUR 600	
— Organization and Change of Health Care Service.....	2
— Transcultural Health and Life Cycle.....	3

Cognates:

<i>Nine credits required</i>	<i>Credits</i>
PSL 750 — Developmental Physiology.....	3
BIO 585 — Human Heredity.....	3
PSY 740 — Life Span Development.....	3

— Advanced Medical-Surgical Nursing

This major 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 alterations of self-care ability. The student has the opportunity to develop his/her own goals and to expand his/her study and clinical experience in areas of clinical interest. The clinical practicum emphasizes the clinical nurse-specialist roles of assessor, 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.

Major Requirements

	<i>credits</i>
NUR 710 — Theoretical Foundations of Nursing Practice.....	2
NUR 712 — Adult Clinical Nursing I.....	2
NUR 713 — Adult Clinical Nursing II.....	4
NUR 714 — Adult Clinical Nursing III.....	4
NUR 785 — Seminar in Clinical Nursing.....	2
NUR 651 or NUR 754	
— Organization and Change of Health Care Services.....	2
— Nursing Care of Communities.....	2
NUR 753 or PSY 563	
— Nursing Care of Groups.....	2
— Group Dynamics.....	3

Cognate:

PSL 752, 6 credits required (to be taken in two semesters).

— Primary Care Nursing of Adults

This major prepares the clinical nurse specialist in primary care of adults. The focus of the program 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 is integrated in the program. 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 complimented in an autonomous primary care nursing service with emphasis on the clinical nurse specialist in the roles of practitioner, educator, researcher and care management agent. This program provides students with the aptitudes for critical thinking; the ability to apply theory, conceptual frameworks and research findings to the field of primary care nursing; and the ability to perform the various roles of the clinical nurse specialist.

Major Requirements

	<i>credits</i>
NUR 554 — Assessment (undergraduate prerequisite).....	3
NUR 555 — Advanced Assessment (undergraduate prerequisite).....	1
NUR 710 — Theoretical Foundations of Nursing Practice.....	2
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 785 — Seminar in Clinical Nursing.....	2
NUR 752 or NUR 753	
— Nursing Care of Families.....	2
— Nursing Care of Groups.....	2
NUR 754 or NUR 651	
— Nursing Care of Communities.....	2
— Organization and Change of Health Care Services.....	2

Cognate:

PSL 752, 6 credits required (to be taken in two semesters).

— Adult Psychiatric/Mental Health Nursing

This major 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. A research sequence offers students the opportunity to design and implement a research study. A cognate sequence in psychology offers students the opportunity to augment learning in the nursing major.

Four minor options are available, although not required: teaching in nursing, leadership and administration in nursing, gerontological nursing, and transcultural nursing. Students who do not pursue a minor may elect a set of graduate level courses in nursing or a related discipline.

Major Requirements

	<i>Credits</i>
NUR 710 — Theoretical Foundations of Nursing Practice.....	2
NUR 749 — Human Sexuality.....	2
NUR 760 — Adult Psychiatric-Mental Health Nursing-Individuals.....	6
NUR 762 — Psychiatric-Mental Health Nursing with Groups.....	4
NUR 763 — Psychiatric-Mental Health Nursing with Families.....	3
NUR 764 — Community Mental Health Nursing.....	3
NUR 785 — Seminar in Clinical Nursing.....	2

Cognates:

<i>Nine credits approved by adviser</i>	<i>credits</i>
PSY 528 or PSY 568	
— Psychoanalytic Theory.....	3
— Social Psychology of Personality.....	3
PSY 563 or PSY 763	
— Group Dynamics.....	3
— Group Process.....	3
PSY 505 — Physiological Psychology.....	3

— Child and Adolescent Psychiatric/Mental Health Nursing

This major 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. A research sequence offers students the opportunity to design and implement a research study. A cognate sequence in psychology offers students the opportunity to augment learning in the nursing major.

Four minor options are available, although not required: teaching in nursing, leadership and administration in nursing, gerontological nursing, and transcultural nursing. Students who do not pursue a minor may elect a set of graduate level courses in nursing or a related discipline.

Major Requirements

	<i>credits</i>
NUR 710 – Theoretical Foundations of Nursing Practice.....	2
NUR 749 – Human Sexuality.....	2
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.....	3
NUR 764 – Community Mental Health Nursing.....	3
NUR 785 – Seminar in Clinical Nursing.....	2

Cognates: Nine credits in adviser-approved electives in the behavioral sciences.

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.

Sequence Requirements:

<i>(9 credit minimum)</i>	<i>Credits</i>
NUR 701 – Research in Nursing.....	3
NUR 700 – Statistical Methods in Nursing Research (or equiv.).....	3-4

plus one of the following:

NUR 798 – Field Study.....	3-4
NUR 796 – Research Practicum.....	3-4
NUR 899 – Master's Thesis Research and Direction.....	8

Electives or Minors (8 Credit Minimum)

Students may choose to complete their eight credit elective requirements by electing a minor, an area of concentration or eight graduate credits of their choice.

— Teaching in Nursing

This minor is designed to introduce master's level practitioners to the theory, process and methods of curriculum development and evaluation. A field practice experience under the guidance of a master teacher is required.

Requirements

	<i>credits</i>
NUR 771 – Curriculum Theory Development in Nursing.....	3
NUR 772 – Process of Educational Program Planning in Nursing.....	3
NUR 773 – Field Practice in Clinical Teaching.....	2-6

— Leadership and Administration in Nursing

This minor is designed to prepare master's level clinical practitioners for administrative responsibilities in nursing service. Course content includes administrative and organizational theories as they apply to health care organizations. Special emphasis is placed on the development of the knowledge and skill necessary to manage personnel systems. A field practice experience is required.

Requirements

	<i>credits</i>
NUR 775 – Administrative Process in Nursing.....	3
NUR 776 – Personnel Development.....	3
NUR 777 – Field Practice in Nursing Administration.....	2-6

— Gerontological Nursing

This clinical minor focuses on the unique aspects of the nursing care of the geriatric patient. Required courses focus on the identification of physical and mental health needs of the elderly and the resulting adaptive and pathological conditions. Particular attention is paid to the adequacy of community resources, public programs and gerontological nursing research.

Requirements

	<i>credits</i>
NUR 740 – Gerontological Nursing.....	3
NUR 741 – Psychosocial Aspects of the Aged.....	3
NUR 742 – Seminar: Research in Gerontological Nursing.....	2

— Transcultural Nursing

Minor study in this area prepares students to be knowledgeable and competent in transcultural nursing. Course content includes theories, concepts, and practices of transcultural nursing. Field practice is under the supervision of faculty prepared in transcultural nursing.

Requirements

	<i>Credits</i>
* NUR 600 – Transcultural Health and Life Cycle.....	3-5
NUR 707 – Transcultural Nursing: Theory, Research and Practice.....	3
* NUR 708 – Field Practice in Transcultural Nursing.....	2-5

While students are only required to take eight graduate credits to fulfill the minor, they may elect to take additional transcultural nursing and anthropology courses to support their career goals and to function competently as a transcultural nurse generalist.

— Additional Areas of Concentration

Several series of courses have been developed to prepare master's level practitioners with special knowledge about specific clinical practice problems or clients who have special needs. Sequences offered are subject to change. Interested students should inquire about availability of current offerings. Examples of such sequences include rehabilitation nursing, and nursing of the developmentally disabled.

* Nursing students may elect two additional credits for clinical and practice field studies.

Specialist Certificate in Nursing Administration

This twenty-two credit program leading to a Specialist Certificate in Nursing Administration is designed to prepare nurses for administrative positions in nursing service organizations 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 13. 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.

CERTIFICATE REQUIREMENTS (twenty-two credits)

Goals and Values (3 credits)

C M 740 — Survey of Health Economics.....3

Finance (6 credits)

ACC 602 — Managerial Accounting.....3
Accounting elective.....3

Human Resources (3 credits)

MGT 769 — Executive Development.....3
MGT 775 — Labor Relations and Collective Bargaining.....3
MGT 777 — Union Contract Administration.....3

Management (6 credits)

MGT 762 — Complex Organizations.....3
MGT 763 — Organizational Change and Development.....3
MGT 766 — Entrepreneurial Management.....3
MGT 768 — Executive Decision Making.....3
PSY 755 — Psychological Analysis of Organizations.....3

Nursing (4 credits)

NUR 777 — Field Experience.....2
NUR 710 — Theoretical Foundations of Nursing Practice.....2
NUR 810 — Issues, Methods, and Policies.....2

Total: 22 credits

DOCTOR OF PHILOSOPHY

The faculty of the College of Nursing offers a Doctor of Philosophy program with a major in nursing to prepare highly competent researchers and scholars who will contribute to the body of scientific knowledge in nursing. Students in the program have opportunities to gain in-depth knowledge of nursing theories, develop skills in theory building, research methods and in cognate disciplines bearing upon the development, transmission and use of nursing knowledge.

Admission Requirements

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13. Additionally, students must satisfy the following criteria mandated by the College:

1. A bachelor's or master's degree in nursing or the equivalent (Summer option applicants must have a master's degree in nursing);
2. Current licensure as a registered nurse or national registration for international applicants;
3. An h.p.a. of 3.50 in upper division undergraduate work (defined as last 60 semester credits) and/or a graduate h.p.a. of 3.30;
4. Combined verbal and quantitative Graduate Record Examination General Test Score of at least 1000, with a minimum verbal score of 400 and a minimum quantitative score of 400. Graduate Record Examination scores must *not* be over five years old at the time of the term for which applicant is applying;
5. One year of professional nursing experience;
6. Three references, preferably from nurse faculty, nurse researchers, and/or other professional colleagues (preferably at the doctorally-prepared level) who can evaluate the applicant's clinical competence, scholarship and aptitude for research;
7. Statement of professional goals, research interests, ideas, beliefs and concerns about clinical practice;
8. Two samples of writing (may be published or unpublished);
9. Interviews with a minimum of two graduate faculty members.

Applicants who reside more than 200 miles from campus may be interviewed by telephone if the applicant wishes. Admission decisions reflect careful consideration of the applicant's complete record, interests and the resources of the College.

Application: Two doctoral classes are admitted each year, in the summer and in the fall. The application deadline date for both options is February 15 of each year.

Post-Master's Study: In some instances an applicant for the doctoral program may be admitted as a post-master's student. In this classification, a student may register for a maximum of nine graduate credits; he/she may not register for doctoral nursing courses (NUR 800 or 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 Graduate Studies, 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 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 354 and 20-28 respectively. Credits must be distributed as follows:

<i>Areas of Study</i>	<i>Minimum Graduate Credits</i>
Clinical Nursing.....	18
Nursing Theory (Advanced Nursing Seminars 801,802,810,820).....	15
Related Discipline.....	12
Philosophy of Science (PHI 523).....	4
Advanced Nursing Research Methods (NUR 805).....	3
Statistics.....	8
Dissertation (NUR 999).....	30
Total:	90

Students who do not possess the master's degree in nursing upon admission would be expected to complete degree or clinical requirements for that degree during the program of study outlined above in a N.L.N. accredited program. The areas of advanced clinical practice include nursing of children, adolescents, adults and families with complex health needs within various health care delivery systems. The disciplines from which a sequence of courses might be chosen include: biochemistry, physiology, human development, psychology, sociology, cultural anthropology, political science, philosophy, economics and others. The students will be encouraged to select statistics and methodological courses appropriate to the study of nursing phenomena.

Time Limitation: The length of time taken to complete the program varies with educational preparation prior to admission. Students have a seven-year time limit to complete all 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 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 on an individual basis. Interested doctorally-prepared persons are encouraged to contact the Office for Graduate Studies, College of Nursing.

ACADEMIC PROCEDURES

For complete information regarding academic rules and regulations of the University, students should consult the General Information section of this bulletin, beginning on page 13. 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 Services.

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 Services (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 Services. The student is to have a yearly tuberculin skin test and/or chest X-ray. Students may not be in 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 Services (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 scholarship for graduate students are listed below.

1. With completion of the form: *Request to Repeat a Graduate Course*, a student may repeat one course one time. A course may be repeated only if the student has received less than a 'B-minus'.
2. A grade of less than a 'C-minus' in any clinical (client-based) course automatically means that the student may not continue in the program.

3. A grade of 'C-minus' or better in any course must be achieved before the student may continue in sequential courses.

4. Students must have a minimum of a 3.00 h.p.a. in order to be awarded a graduate degree. Any student achieving less than a 3.00 average at any point in the program must achieve a 3.00 h.p.a. or better within the next twelve credits. Failure to meet the above stipulations will result in the student's dismissal from the program.

5. Any student conditionally admitted must achieve a 3.00 h.p.a. within the *first eight Nursing* credits in 600 (or above) level courses. The student must have an overall 3.00 h.p.a. in order to be transferred from conditional to regular status.

6. Students who have ten credits of less than 'B-minus' work in graduate courses may not continue in the program. For students who repeat a course in which they initially received less than a 'B-minus' or better, the first grade will not count toward the number of allowable credits of 'C' or lower grades (the latter applies only to the Master's program).

7. A student may be excluded from the College at any time without having been previously warned or placed on probation for irresponsible attendance and/or performance in field practice assignments.

Doctoral Degree Scholarship

1. Students who earn more than two grades of 'C' in 800 level courses cannot continue in the doctoral program.

2. No more than ten credits of 'C' can be earned in cognates, or cumulatively in statistics and methods courses and 800 level Nursing courses. Students with more than ten credits of 'C' cannot continue in the doctoral program.

3. A grade of 'C' in Nursing 801 is unsatisfactory for meeting the prerequisite requirement for Nursing 802.

4. Any grade of 'C' or lower is unsatisfactory even though the course has been repeated. The original grade of 'C' remains and is counted in determining the total credits of 'C' grades permitted.

A graduate student in the College of Nursing has the option of electing to repeat One course in which a grade of 'B-' or lower was received. This is a ONE TIME OPTION. Approval to repeat a course must be obtained PRIOR to registration on the form: *Request to Repeat a Graduate Course* to be obtained from the Office of Student Services, 225 Cohn Building. The student is responsible for completing the form and obtaining required signatures BEFORE registering for the course. Failure to obtain PRIOR approval to repeat a course will result in determining the student's honor point average on the basis of grades earned in the original registration AND the repeat of the course. 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.

Attendance

Regularity in attendance and performance is necessary for success in college work. Each faculty member at the beginning of the course will announce his/her attendance requirements. Each student is expected to abide by attendance requirements and to assume responsibility for seeking guidance and direction as needed. Absence from field practice must be reported at once both to the agency and to the faculty member.

Organizations

The College of Nursing Council is composed of elected representatives of students and faculty. Its purpose is to reflect the concerns of the student members to the University and the larger community.

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. A student may be required to withdraw from the College when, in the judgment of the faculty, behavior demonstrates that the student is unsuited for nursing.

Student Rights and Responsibilities for the University: see page 24.

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 Community Educational Services, College of Nursing.

FINANCIAL AIDS

The University Office of Scholarships and Financial Aids, Room 222, Administrative Services Building (see page 41), 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 Services, College of Nursing.

Professional Nurse Traineeships

Funds *may* be available for full-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 Services, 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, 352 Mackenzie Hall. 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 Services, 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 February 1, June 1, and October 1. Contact the College Office of Student Services 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, 111 Mackenzie Hall.

FACULTY

Offices: 5557 Cass Avenue

Professors

Lorene Fischer, Madeline Leininger, Barbara McArthur, Dorothy Reilly

Associate Professors

Marcia Andersen, Arnold Bellingher, Mary Denyes, Judith Floyd, Effie Hanchett, Ingvarda Hanson, Marjorie Isenberg, June Kuczynski, Norma McHugh, Kathleen Monahan, Darlene Mood, Bernice Morton, Marilyn Oermann, Noreen O'Neill, Barbara Pieper, Jeannette Poindexter, Virginia Rice, Fredericka Shea, Doris Slater-Stewart, Dawn Zagornik

Assistant Professors

Yvonne Abdo, Dorothy Booth, Jacquelyn Campbell, Joette Clark, Geraldine Flaherty, Marie Luise Friedemann, Judith Fouladbakhsh, Hertha Gast, Mark Hirschmann, Paulette Hoyer, Lois Hunt, Mary Jirovec, Carolyn Lindgren, Laurel Northouse, Fern Sturgis, Carol Tenerowicz, Beverly Tyler, Olivia Washington, Alice West, Regina Williams, Margo Zink

Lecturers

Barbara Banfield, Susan Benesh, Francis Board, Rosellen Burkart, Margery Caldwell, Diane Hischke, Mary Jacobsen, Diane Lancaster, Margie Miller, Sara Mooney, Sukhta Pradatsundarasar, Chandra Sharma, Helen Shaw, Judy Wheeler

Part-Time Faculty

Rhonda Amber, Patricia Carney, Beverly Kober, Jo Anna Risk, Mary Wilde

College of Nursing Directory

Dean.....	230 Cohn; 577-4070
Administrative Officer	244 Cohn; 577-4086
Associate Dean, Graduate Studies.....	344 Cohn; 577-4138
Associate Dean, Undergraduate Studies	252 Cohn; 577-4131
Center for Health Research	315 Cohn; 577-4134
Learning Resource Center	15 Cohn Cohn; 577-4097
Office of Student Services	225 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

COURSES OF INSTRUCTION¹ (NUR)

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)

554. Assessment: History Taking and Physical Examination. Cr. 1(3 req.)

Prereq: admission to College of Nursing and/or R.N. licensure in Michigan. Offered for undergraduate credit only; S and U grades only. Material fee as indicated in *Schedule of Classes*. Individualized self-paced modular approach to learning assessment skills. Content and activities related to all body regions and systems. Course completion requires three credits: 1 cr. (modules 1-4); 1 cr. (modules 5-8); 1 cr. (modules 9-12). (T)

555. Advanced Assessment: History Taking and Physical Examination. Cr. 1-3

Prereq: NUR 554 or equiv. Offered for undergraduate credit only. Material fee as indicated in *Schedule of Classes*. Individualized self-paced modular approach to learning advanced assessment skills. Content relates to specific body areas and age groups. (T)

600. Transcultural Health and Life Cycle. (ANT 641). Cr. 3-5

Prereq: introductory course in anthropology. 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. Organization and Change of Health Care Services. Cr. 2

Analysis of the organization and effectiveness of the health delivery system. Emphasis on dynamic interaction of system components and the evolutionary nature of change through health planning and financing. (F, W)

700. Statistical Methods in Nursing Research. Cr. 4

Prereq. or coreq: NUR 701. 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 430 or equiv. Introduction to process of scientific inquiry and literature of nursing research. Involves development of proposal designed for investigation of nursing problem; includes some independent study. (F, W)

707. Transcultural Nursing: Theory, Research and Practice. Cr. 2-3

Prereq: graduate standing. Nature, focus and goals of transcultural nursing. Comparative approach used to identify and analyze health and nursing care beliefs, values and practices in different cultures. Transcultural approaches emphasized; nursing care interventions with multicultural groups. (S)

708. Field Practice in Transcultural Nursing. Cr. 2-5

Prereq: NUR 707. Provision of health care needs of people from diverse cultures, using transcultural nursing principles and care practices. (F)

710. Theoretical Foundations of Nursing Practice. Cr. 2

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)

712. Adult Clinical Nursing I. Cr. 2-4

Prereq: NUR 554 and 340 or equiv., consent of instructor; prereq. or coreq: 710, PSL 752, admission to advanced medical surgical major. Material fee as indicated in *Schedule of Classes*. Analysis of various health and illness concepts. Application of biopsychosocial framework to nursing practice in the care of the adult with existing or potential impairment of self-help ability. Emphasis on assessment methodology. Includes clinical practice. (W)

713. Adult Clinical Nursing II. Cr. 2-5(4 req.)

Prereq: NUR 712. Analysis of relationships of biophysical and psychological processes occurring in physically ill adults. Emphasis on analysis of explanatory decisions in nursing. Includes clinical practice. (F)

714. Adult Clinical Nursing III. Cr. 2-6(4 req.)

Prereq: NUR 713. Analysis of nursing managerial decisions. Emphasis on planning, implementation and evaluation of nursing prescriptions for the physically ill adult. Includes clinical practice. (W)

715. Clinical Judgment in Nursing I. Cr. 1-4

Prereq: NUR 554 and 340 or equiv.; prereq. or coreq: 555, 710, PSL 752, admission to PCA mmajor. Analysis of nursing explanatory decisions in primary care of adults, concepts of health and illness. Development of conceptual framework for primary care nursing practice. Includes clinical practicum. (F)

716. Clinical Judgment in Nursing II. Cr. 2-4(3 req.)

Prereq: NUR 715. Analysis of managerial decisions in primary care of adults. Application of conceptual framework to nursing practice. Includes clinical practicum. (W)

717. Adult Primary Care I. Cr. 2-4(4 req.)

Prereq: NUR 716. Material fee as indicated in *Schedule of Classes*. Analysis of primary nursing care in health promotion and maintenance. Development and evaluation of collaborative practice. Includes clinical practicum with preceptor. (F)

718. Adult Primary Care II. Cr. 2-4(4 req.)

Prereq: NUR 717. Synthesis of primary care nursing role. Assessment, teaching, counseling, referral and treatment of individuals, groups and community. Continued evaluation of collaborative practice. Includes clinical practicum with preceptor. (W)

721. Nursing Care of Women. Cr. 1-2(2 req.)

Prereq: NUR 554 and 340 or equiv.; prereq. or coreq: 710, admission to major. Assessment of women with reproductive system disorders. Systems approach to health care of women. Nursing management of the pregnant woman and expectant families. (F)

722. Perinatal Nursing. Cr. 1-4(4 req.)

Prereq. or coreq: NUR 554, 340 or equiv., and 721; prereq. or coreq: 710, admission to major. Material fee as indicated in *Schedule of Classes*. Nursing management of women in labor and postpartum period. Physiological and anatomical mechanisms of birth. Assessment and management of neonate. Includes clinical practice. (W)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

- 723. Advanced Clinical Practice in Health Care of Women I: Childbearing Family. Cr. 4**
Prereq: NUR 722. Material fee as indicated in *Schedule of Classes*. Application of psychological, sociological, biological and medical knowledge to nursing care management of women with health care problems. Development of conceptual framework for practice. Includes clinical practice. (F)
- 724. Advanced Clinical Practice in Health Care of Women II. Cr. 3**
Prereq: NUR 721. Synthesis of clinical specialist knowledge and skills in complex health care problems of women. Evaluation of management protocols. Includes clinical practice. (W)
- 727. Nursing, Parenting, and Families: Synthesis of Scientific Foundations for Practice. Cr. 4**
Prereq: NUR 554 and 340, 710, 752, PSY 740, PSL 750, or consent of instructor. 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. (W)
- 728. Nursing, Parenting, and Families: Evaluation of Advanced Practice. Cr. 3**
Prereq: NUR 727, 752. 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. (F)
- 729. Nursing, Parenting, and Families: Validation of Advanced Practice. Cr. 4**
Prereq: NUR 727, 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. (W)
- 731. Nursing of Children and Adolescents I. Cr. 1-2**
Prereq: NUR 554 and 340 or equiv.; prereq. or coreq: 710, admission to major. Application of systematic assessment. Analysis of nursing and health issues related to children, birth through adolescence, and their families. (F)
- 732. Nursing of Children and Adolescents II. Cr. 3-4(3 req.)**
Prereq: NUR 731. Material fee as indicated in *Schedule of Classes*. Analysis of concepts of health, illness, and theories relevant to nursing care of children and adolescents. Development of conceptual framework for practice. Includes clinical practice in a variety of settings. (W)
- 733. Nursing of Children and Adolescents III. Cr. 4**
Prereq: NUR 732. Material fee as indicated in *Schedule of Classes*. Synthesis of theories, concepts and knowledge of health and illness as a basis for nursing decision-making with clients. Implementation of nursing decisions in collaboration with other health professionals and families. Evaluation of nursing practice with children, adolescents and their families. Includes clinical practice in a variety of settings. (F)
- 734. Nursing of Children and Adolescents IV. Cr. 4**
Prereq: NUR 733. Conceptualization, implementation, evaluation and accountability for nursing practice with children, adolescents and their families. Evaluation of nursing of children, adolescents and families within the context of political, legislative and ethical considerations. Includes clinical nursing practice in a variety of settings. (W)
- 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. (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. (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)
- 743. Nursing the Developmentally Disabled Person. Cr. 4**
Prereq: graduate standing. Application of knowledge specific to nursing care of developmentally disabled persons and their families. Includes clinical practice. (I)
- 744. Social Systems and the Developmentally Disabled Population. Cr. 4**
Prereq: graduate standing. Evaluation of program developments and social system factors that affect the care of persons with developmental disabilities. Includes clinical practice. (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. Cr. 3-4**
Prereq: NUR 340 or equiv.; prereq. or coreq: 710, admission to CHN major. Students who have not had C M 724 must elect for 4 credits. Historical development and current client-based issues and concerns in community health nursing. Synthesis of public health sciences and nursing theories to meet health concerns of individuals and groups in the community. (F)
- 752. Nursing Care of Families. Cr. 2-3**
Prereq: first clinical course. Offered for 3 credits to community health nursing majors only. Application of theory and research appropriate to nursing assessment and intervention with families who have difficulty coping with potential or actual stress. When taken for 3 credits, includes clinical practice for community health nursing majors only. (W)
- 753. Nursing Care of Groups. Cr. 2-3**
Prereq: first graduate clinical course. Open for 3 credits to community health nursing majors only. Exploration of theory and practice of group process as a nursing intervention modality. When taken for three credits, includes clinical practice for community health nursing majors only. (F)
- 754. Nursing Care of Communities. Cr. 2-3**
Prereq: NUR 751; prereq. or coreq: 752, 753. Open for 3 credits to community health nursing majors only. 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, 752, 753, 754. Syntheses of theories, modalities of practice, legislation and health research as they affect community health nursing. (W)

760. Adult Psychiatric-Mental Health Nursing with Individuals. Cr. 6-8(6 req.)

Prereq: NUR 430 or equiv.; prereq. or coreq: 710 and admission to Adult Psychiatric Mental Health Program. Material fee as indicated in *Schedule of Classes*. Theoretical foundations of psychiatric-mental health nursing practice. Relating framework to human development, health, environment, and the psychotherapeutic process. Students formulate, employ, and evaluate a framework for psychiatric-mental health practice. (F)

761. Child and Adolescent Psychiatric-Mental Health Nursing with Disturbed Children and Youths. Cr. 6-8(6 req.)

Prereq: NUR 430 or equiv.; prereq. or coreq: 710 and admission to Child and Adolescent Psychiatric Mental Health Program. Material fee as indicated in *Schedule of Classes*. Theories underlying psychiatric/mental health nursing within a developmental framework. Analysis of multiple determinants of behavior for designing and implementing nursing practice plans. Introduction of evaluative processes. Includes clinical practice. (F)

762. Psychiatric-Mental Health Nursing with Groups. Cr. 4-6(4 req.)

Prereq: NUR 760 or 761. Development of nursing practice models for group therapy; concepts of group, health, group environment, and nurse therapist. (W)

763. Psychiatric-Mental Health Nursing with Families. Cr. 3-6(3 req.)

Prereq: NUR 762. Material fee as indicated in *Schedule of Classes*. Theories of family functioning and therapeutic intervention from a family systems perspective. Practice models used in nursing therapy approach to the family. (F)

764. Community Mental Health Nursing. Cr. 3-6(3 req.)

Prereq: NUR 763. Advanced nursing of the mentally ill and the developmentally disabled. Functions of community health system; role of nurse as advocate, consultant, political participant. (W)

765. Psychiatric-Mental Health Nursing with Chronic Psychiatric Disorders. Cr. 3

Prereq: admission to master's program in psychiatric-mental health nursing. Concepts of therapeutic intervention with chronic mental patients across the age continuum are examined within a social systems framework. Effects of institutionalization, alternatives to hospitalization including after-care, nursing roles and functions. (I)

766. Nursing Internship in Public Mental Health. Cr. 1-6

Prereq: NUR 760 or 761; graduate status in public mental health. Concepts of organizational development, planned change and consultation in the public mental health system. (I)

771. Curriculum Theory Development in Nursing. Cr. 3

Exploration of theories of nursing, teaching, learning and curriculum development as a basis for development of a conceptual framework for a nursing program. (F,W)

772. Process of Educational Program Planning in Nursing. Cr. 3

Prereq: NUR 771. 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. (F,W)

773. Field Practice in Clinical Teaching. Cr. 2-6

Prereq: written consent of graduate officer, completion of first clinical year, NUR 771, 772. Application experience in educational setting appropriate to student's needs and goals. (Y)

774. Seminar in Economics of Health Care. Cr. 3

Prereq: graduate standing. Basic concepts and principles of microeconomics applied to health care, especially to provision of

personal health services. (I)

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. Personnel Development. 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)

780. Program Evaluation. Cr. 3

Prereq: basic statistics course. Analysis of interrelationships among structure, process and outcome variables; model building. (I)

781. Computer-Based Nursing Information Systems. Cr. 3

Prereq: graduate standing or consent of instructor. Student computer account required. Historical perspective and concepts in development of computer-based information systems in health care; focus on nursing information systems. (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 (3 req.)

Prereq. or coreq: NUR 701, approved course in statistics; prereq: 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 (3 req.)

Prereq: NUR 701, approved course in statistics; 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. 2

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. 2

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. Advanced Nursing Research Methods. Cr. 3

Prereq: two semesters of graduate statistics sequence in Ph.D. nursing program. Open only to doctoral students in Ph.D. nursing program. Critical study, comparative analysis and critique of alternative research methods relevant to the study of nursing problems, questions, and phenomena. (F,S)

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. 2-12
Prereq: NUR 801; doctoral student. Selected topics with relevance for theory, practice and research in nursing. (T)

830. Topics in Leadership in Profession and Discipline of Nursing. Cr. 2
Prereq: doctoral student in nursing, or consent of instructor and graduate officer. Focus on current topics related to development of leadership in the profession and discipline. (I)

899. Master's Thesis Research and Direction. Cr. 1-8 (8 req.)
Prereq: NUR 701, approved course in statistics; consent of instructor, written consent of graduate officer. (T)

999. Doctoral Dissertation Research and Direction. Cr. 2-16 (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: MARTIN BARR

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 (pages 363-382).

Student Government

The Pharmacy and Allied Health Professions Executive Council (PAHPEC) is the official governing body for students in the College. PAHPEC consists of one student representative from each of the health disciplines within the College of Pharmacy and Allied Health Professions. The primary purpose of PAHPEC is to concern itself with any projects or problems which affect the entire student body of the College.

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 being 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 Degrees

The College offers the following 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
 - Pharmaceutical Administration
 - Pharmaceutics
 - Pharmacology/Toxicology

Master of Science in Anesthesia

Master of Science in Medical Technology

- with specialization in
 - Clinical Laboratory Instrumentation
 - Education/Management
 - Hematology
 - Immunohematology

Master of Science in Occupational Therapy

Doctor of Philosophy — with a major in

- Pharmaceutical Sciences with specialization in
 - Medicinal Chemistry
 - Pharmaceutical Administration
 - Pharmaceutics
 - Pharmacology/Toxicology

COLLEGE DIRECTORY

Dean:

Martin Barr105 Shapero Hall; 577-1574

Deputy Dean of Allied Health Professions:

Dorothy M. Skinner428 Shapero Hall; 577-1368

Associate Dean:

W. Dale Walls103 Shapero Hall; 577-1708

Assistant Dean:

Gary D. Fenn121 Shapero Hall; 577-0820

Assistant to the Dean:

Billie L. Brown127 Shapero Hall; 577-1574

Business Manager:

Mary Mistaleski101 Shapero Hall; 577-1576

Graduate Officer:

Gary D. Fenn121 Shapero Hall; 577-0820

Continuing Education Programs:

Willis E. Moore628 Shapero Hall; 577-1714

Minority Recruitment and Retention:

T. Delores Clark145 Shapero Hall; 577-4814

Registrar:

Richard H. Schell139 Shapero Hall; 577-1716

Student Affairs:

Frank P. Facione143 Shapero Hall; 577-1719

Faculty of Pharmacy

Pharmaceutical Sciences:

Hanley N. Abramson528 Shapero Hall; 577-1737

Pharmacy Practice:

Salvador A. Pancorbo328 Shapero Hall; 577-0824

Faculty of Allied Health Professions

Anesthesia:

Prudentia A. Worth2V-4, Detroit Receiving Hosp.; 745-3610

Medical Technology:

Dorothy M. Skinner233 Shapero Hall; 577-1384

Mortuary Science:

Gordon W. Rose102 Mortuary Science; 577-2050

Occupational and Environmental Health:625 Mullett; 577-1210

Occupational Therapy:

Miriam C. Freeling309 Shapero Hall; 577-1435

Physical Therapy:

Mable Sharp439 Shapero Hall; 577-1432

Radiation Technology:

Diane Chadwell117 Shapero Hall Annex; 577-1137

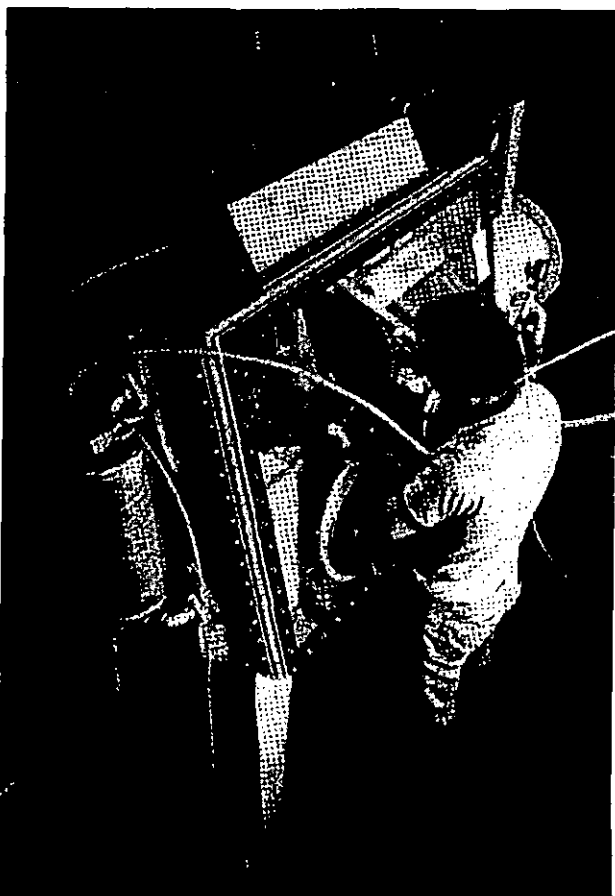
Mailing address for all offices: College of Pharmacy and Allied Health Professions, Wayne State University, Detroit, Michigan 48202.

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.



PHARMACEUTICAL SCIENCES

Office: 528 Shapero Hall

Acting Chairperson: Hanley N. Abramson

Professors

Hanley N. Abramson, Harold E. Bailey (Emeritus), Martin Barr, Raymond J. Dauphinas, Melvin F.W. Dunker (Emeritus), Robert T. Louis-Ferdinand, Willis E. Moore, Janardan B. Nagwekar, Henry C. Wormser

Associate Professors

Bhupendra R. Hajratwala, Richard K. Mulvey (Emeritus)

Assistant Professors

Jon W. Banning, Randall L. Commissaris, Joseph P. Nachtman, Craig K. Svensson

Graduate Degrees

Master of Science — with a major in Pharmaceutical Sciences and specializations in Medicinal Chemistry, Pharmaceutical Administration, Pharmaceutics, and Pharmacology/Toxicology

Doctor of Philosophy — with a major in Pharmaceutical Sciences and specializations in Medicinal Chemistry, Pharmaceutical Administration, Pharmaceutics, and Pharmacology/Toxicology

The pharmaceutical sciences encompass the traditional disciplines of medicinal or pharmaceutical chemistry, pharmaceutical administration, 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.

Pharmaceutical administration includes the legal, economic, administrative and social sciences as applied to the various aspects of pharmacy practice and the other pharmaceutical sciences.

Within pharmaceutics, the areas of biopharmaceutics and pharmacokinetics are concerned with the kinetics of absorption, distribution, metabolism and excretion of drugs and model compounds. Physical pharmacy deals with physical chemical principles and their application to the pharmaceutical sciences. Also of interest in pharmaceutics is the application of biopharmaceutics, pharmacokinetics and physical pharmacy to pharmaceutical product development.

Pharmacology/toxicology deals with the principles and mechanisms of drug action on biological systems and the toxicological aspects of drugs and other substances.

Master of Science with a Major in Pharmaceutical Sciences

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13. 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. The Subject Test in either Biology or Chemistry is recommended for all specialties except pharmaceutical administration.

Applicants whose native language is other than English must demonstrate proficiency in English prior to beginning the program (see page 15).

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 minimum requirement for the master's degree is thirty-two credits, 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 20-28.

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) and is authorized only for those specializing in pharmaceutical administration.

Plan C requires a minimum of thirty-two credits in course work. No thesis or essay is required. It is authorized only for those specializing in pharmaceutical administration.

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 or essay, 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 or essay is required of all candidates following

either Plan A or Plan B.

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 (352 Mackenzie Hall) 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 coordinator and two to the college graduate officer, prior to certification of the degree.

Selection of Adviser: The coordinators designated by the college graduate officer for each specialization will serve as temporary advisers to the applicants 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 Shapiro 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 student's 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.

Doctor of Philosophy with a Major in Pharmaceutical Sciences

Admission: In addition to the requirements of the graduate school (see page xxx), 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. In addition, those desiring one of the following specializations must take a Subject test as indicated:

Medicinal Chemistry —Subject Test in Chemistry
Pharmacology/Toxicology —Subject Test in Biology or Chemistry.

Applicants whose native language is other than English must demonstrate proficiency in English prior to beginning the program (see page 15).

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 20-28. 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, page 364.

Candidacy: see the requirements of the Graduate School, page 26.

Academic Progress: See above, under Master's Degree Program, page 364.

Financial Aid

Sources of financial aid for graduate students are enumerated in the section on Graduate Financial Aid, beginning on page 30 of this bulletin. In addition, there are a limited number of teaching and research assistantships available to qualified students. Inquiries should be directed to the Chairperson, Department of Pharmaceutical Sciences.

COURSES OF INSTRUCTION¹ (PSC)

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. (Formerly MC 600) (F)

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)

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)

673. Quantitative Drug Analysis. Cr. 3

Prereq: admission to pharmaceutical sciences graduate program or consent of instructor. Lecture and laboratory on general principles of sample collection and handling for drug analysis; utilization of analytical technology in the quantitation of drugs. (Formerly PHA 673) (I)

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. (Formerly PCL 689) (F)

700. Ionic Equilibria, Solubility and Complexation Phenomena. Cr. 2

Prereq: consent of instructor. Mechanistic rationalization of drug solubility and complexation phenomena and methods for evaluating the parameters of these processes. (Formerly PHA 700) (I)

702. Kinetics of Drug Degradation and Stabilization. Cr. 2

Prereq: consent of instructor. Application of the principles of chemical kinetics to the mechanism of drug degradation and stabilization. (Formerly PHA 702) (I)

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)

705. Industrial Pharmacy. Cr. 3

Prereq: consent of instructor. Industrial pharmacy principles and processes; manufacturing of selected pharmaceutical dosage forms and principles of quality control. (Formerly PHA 705) (I)

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. (Formerly PCL 710) (F)

711. Pharmacodynamics II. Cr. 3

Prereq: PSC 710 and consent of instructor; coreq: 420 for students lacking pharmacology background. Continuation of PSC 710. (Formerly PCL 711) (W)

712. Advanced Pharmacology I. Cr. 2

Prereq: consent of instructor. Study of the theories of drug action; cellular pharmacology. (Formerly PCL 712) (I)

713. Advanced Pharmacology II. Cr. 2

Prereq: consent of instructor. Continuation of PSC 712. (Formerly PCL 713) (I)

714. Advanced Pharmacology Laboratory. Cr. 2

Prereq. or coreq: PSC 711. Laboratory experimentation on principles discussed in PSC 712 or PSC 713. (Formerly PCL 714) (I)

715. Biochemical Pharmacology. Cr. 2

Prereq: consent of instructor. Discussion of the principles of the biochemical aspects of drug action. (Formerly PCL 715) (W)

720. Health Care Law. Cr. 3

Prereq: consent of instructor. Selected aspects of the legal system and representative legal areas involving the organization and delivery of health services. Formerly P A 720) (I)

730. Regulatory Affairs. Cr. 3

Prereq: consent of instructor. Exploration of public and professional affairs related to pharmaceutical activity and the health-care plexus. (Formerly P A 730) (I)

740. Federal Food and Drug Control. Cr. 3

Prereq: baccalaureate degree in any field; consent of instructor. History, philosophy, requirements, administration and enforcement of the Federal Food, Drug and Cosmetic Act; its impact on industry, health professions and consumers in terms of economics and public health. (Formerly P A 740) (I)

750. Social Aspects of Health Care. Cr. 3

Prereq: consent of instructor. Legislative, political and socioeconomic factors affecting practice, procedure and public policy in the providing of health-care services by human services professions.

¹ See page 461 for interpretation of numbering system, signs and abbreviations

- (Formerly P A 750) (I) Formerly (P A 796) (T)
- 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. (Formerly PCL 731) (W)
- 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. 2-4(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. (Formerly M C 796) (T)
- 781. Research Techniques in Pharmaceutics. Cr. 2-4(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. (Formerly PHA 796) (T)
- 782. Research Techniques in Pharmacology. Cr. 2-4(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. (Formerly PCL 796) (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. (Formerly M C 789) (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. (Formerly PHA 789) (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. (Formerly PCL 789) (T)
- 789. Seminar in Pharmaceutical Administration. Cr. 1-2(Max. 4)**
Prereq: consent of adviser. Reports and discussions by students and members of the staff on current developments in the field. (Formerly P A 789) (T)
- 790. Directed Study in Pharmaceutical Administration. Cr. 1-3(Max. 5)**
Prereq: written consent of instructor, adviser and graduate officer prior to registration. Directed projects in pharmaceutical administration. (Formerly P A 790) (T)
- 796. Research in Pharmaceutical Administration. Cr. 2-4(Max. 6, M.S.; max. 12, Ph.D.)**
Prereq: consent of instructor. Laboratory work, including application of basic principles to graduate study and research.
- 799. Master's Essay Direction. Cr. 2(2 Req., Max. 2)**
Prereq: consent of adviser. (Formerly P A 799) (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. (Formerly PHA 804) (W)
- 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. (Formerly M C 820) (W)
- 860. Special Topics in Pharmaceutical Administration. Cr. 2(Max. 6, M.S.; max. 12, Ph.D.)**
Prereq: consent of instructor. Recent developments in pharmaceutical administration. Topics under investigation and of current interest offered in different semesters. (Formerly P A 860) (T)
- 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. (Formerly M C 860) (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. (Formerly PHA 860) (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. (Formerly PCL 860) (T)
- 899. Master's Thesis Research and Direction. Cr. 1-3(8 req., max. 8)**
Prereq: consent of adviser. (Replaces former M C 899, P A 899, PHA 899, and PCL 899) (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: 327 Shapero Hall

Chairperson: Salvador Pancorbo

Associate Professors

Gary D. Fenn, Paul J. Munzenberger, Salvador Pancorbo, David K. Solomon, Gregory S. Umstead

Adjunct Associate Professors

Kenneth H. Fish, Richard L. Lucarotti, Percy R. McClain, Douglas A. Miller, Larry K. Shoup, Vern F. Thudium, Ronald T. Turnbull

Assistant Professors

Terry J. Baumann, David J. Edwards, Frank P. Facione, Susan C. Fagan, Martha J. Miller, David R. Rutledge, Michael J. Rybak, Paul C. Walker, Nancy J. Wenzloff

Adjunct Assistant Professor

J.V. Anandan, Daniel M. Ashby, Roger D. Blevins, Steven S. Boike, William A. Cornelis, Cynthia G. Derouin, Ronald H. Lukasiewicz, Neil Massoud, Robert Milewski, John Mitchell, Michael Powell, Terrance Rehder, Randy F. Schad, Geralynn B. Smith, Bruce E. Vinson, Barbara M. Zarowitz

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 13. 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 15).

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 five personal evaluations must be submitted. After favorable preliminary review, the applicant must appear for a person 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 20-28, 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: Immunology/Cardiology
PPR 662	.....	D. P. & T. 2: Pulmonary/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 760	.....	Introduction to Clinical Research
PPR 767	.....	Applied Pharmacokinetics: Advanced

PPR 784 Seminar in Clinical Pharmacy

In addition, the following one-month clinical clerkship rotations, including three months of PPR 701 (each month at a different clinical setting) 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 705 Clinical Pharmacy Clerkship: Psychiatry
 PPR 706 Clinical Pharmacy Clerkship: Clinical Pharmacokinetics
 PPR 707 Clinical Pharmacy Clerkship: Surgery

Three one-month elective clinical clerkship rotations are required. These may be chosen from the following or, if the student desires to specialize, any required or elective rotation may be elected again at a different clinical site.

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: Enteral/Parenteral Nutrition
 PPR 716 Clinical Pharmacy Clerkship: Ambulatory Internal Medicine
 PPR 717 Clinical Pharmacy Clerkship: Pharmacy Practice Management
 PPR 718 Clinical Pharmacy Clerkship: Community Pharmacy
 PPR 721 Clinical Pharmacy Clerkship: Clinical Research

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 Specialist Certificate in Aging from the Institute of Gerontology. For further information see page 34 of this bulletin.

Financial Aid

Sources of financial aid for graduate students are enumerated in the section on Graduate Financial Aid beginning on page 30 of this bulletin.

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 13. 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.

Applicants whose native language is other than English must demonstrate proficiency in English prior to beginning the program (see page 15).

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 the Graduate Office, 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 20-28.

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
 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*

MGT 764 Management of Human Resources
 MGT 768 Executive Decision Making
 PPR 682 Sterile Products
 PPR 767 Applied Pharmacokinetics: Advanced
 PPR 772 Special Topics in Clinical Pharmacy: Advanced

* Other graduate-level electives may be selected with the approval of the program director and the college graduate officer.

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 (352 Mackenzie Hall) 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 coordinator and two to the college graduate officer, prior to certification of the degree.

Selection of Adviser: The program director will serve the student's official academic adviser for the duration of the program. At the appropriate time, the candidate will select a co-adviser who will function as the research adviser for the essay or thesis.

Candidacy: Applicants apply to the college graduate officer (121 Shapero Hall) to become degree candidates by filing a *Plan of Work*, approved by the program director, prior to the completion of twelve graduate credits in the program. To qualify, applicants must exhibit satisfactory scholarship (graduate honor point average of 3.0 or above), have completed any prerequisite and/or corequisite courses specified at the time of admission and have regular admission status. Applicants who have not been advanced to candidacy by the time twelve graduate credits have been completed may be denied further registration in the program.

Academic Progress: Continuance in the master's program depends upon satisfactory progress as determined by the program director and the college graduate officer. Students who have not registered for two or more consecutive semesters will be placed on inactive status and must obtain the permission of the program director and the college graduate officer before registering again.

Combined Residency Master's Program

This option allows a pharmacy resident to simultaneously complete an American Society of 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: Director, Graduate Studies in Hospital Pharmacy, Department of Pharmacy Practice, College of Pharmacy and Allied Health Professions, Wayne State University, Detroit, Michigan 48202.

COURSES OF INSTRUCTION¹ (PPR)

610. Legal Environment in Pharmacy. Cr. 3

Prereq: last professional year, graduate, or graduate professional standing; consent of instructor. Formulation in interpretation, performance and discharge of contracts; resulting regulation of business, professional and trade practices in pharmacy. (Formerly P A 510) (I)

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)

661. Disease Processes and Therapeutics I: Immunology/Cardiology. 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: immunology and cardiology. (F)

662. Disease Processes and Therapeutics II: Pulmonary/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: pulmonary and infectious diseases. (F)

663. Diseases Processes and Therapeutics III: Hematology/Oncology. Cr. 2

Prereq: admission to Pharm.D. program. Pathophysiology of disease states, clinical pharmacology and therapeutic application of drugs: hematology and oncology. (F)

664. Disease Processes and Therapeutics IV: Psychiatry/Neurology. Cr. 2

Prereq: admission to Pharm.D. program. Pathophysiology of disease states, clinical pharmacology and therapeutic application of drugs: psychiatry and neurology. (W)

665. Disease Processes and Therapeutics V: Gastroenterology/Endocrinology. Cr. 2

Prereq: admission to Pharm.D. program. Pathophysiology of disease states, clinical pharmacology and therapeutic application of drugs: gastroenterology and endocrinology. (W)

666. Disease Processes and Therapeutics VI: Nephrology/Fluid and Electrolytes. Cr. 3

Prereq: admission to Pharm.D. program. Pathophysiology of disease states, clinical pharmacology and therapeutic application of drugs: nephrology and fluid electrolytes. (W)

667. Disease Processes and Therapeutics VII: Rheumatology, Pediatrics and Patient Assessment. Cr. 2

Prereq: admission to Pharm.D. program. Pathophysiology of disease states, clinical pharmacology and therapeutic application of drugs: rheumatology, pediatrics, patient assessment. (W)

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)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

682. Sterile Products. Cr. 3

Prereq: last professional year, graduate, or graduate professional year standing. Material fee as indicated in *Schedule of Classes*. An introduction to the principles, techniques, and equipment employed in the manufacture of sterile products. (I)

683. Dermatological Preparations. Cr. 2

Prereq: last professional year, graduate, or graduate professional standing. Material fee as indicated in *Schedule of Classes*. Discussion of common skin disorders, their treatment, and the formulation of topical pharmaceuticals and hypo-allergenic cosmetics. (I)

685. Radiopharmacy. Cr. 2

Prereq: last professional year, graduate, or graduate professional standing. Fundamentals of radiopharmacy; emphasis on diagnostic and therapeutic applications of isotopes as well as a general survey of non-medical applications of radioactive pharmaceuticals. (I)

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. (W)

687. Geriatric Pharmacy Practice. Cr. 2

Prereq: last professional year standing, graduate or graduate professional standing. Topics presented are those concerned with the aging process as it relates to the more common disease states with focus on drug therapy. The role of the pharmacist in the care of the elderly is also emphasized. (Y)

688. Mental Health Pharmacy. Cr. 2

Prereq: last professional year, graduate, or graduate professional standing. Classification of mental disorders, signs and symptoms associated with various forms of mental illness, and various drug regimens used in treatment. (I)

701. Clinical Pharmacy Clerkship: Internal Medicine. Cr. 2-8(6 req.; max. 8)

Prereq: admission to Pharm.D. program. 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. 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. 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. 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. 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. 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. 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)

711. Clinical Pharmacy Clerkship: Geriatrics. Cr. 2-4(Max. 4)

Prereq: admission to Pharm.D. program. 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. 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. 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. 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. 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. 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. 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)

718. Clinical Pharmacy Clerkship: Community Pharmacy. Cr. 2-4(Max. 4)

Prereq: admission to Pharm.D. program. Concept of extended

community service role for the pharmacist; principles of community pharmacy management; pharmacist's role in community health issues. (T)

721. Clinical Pharmacy Clerkship: Clinical Research. Cr. 2
Prereq: admission to Pharm.D. program. Intensive participation in clinical research activity. (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. (Y)

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)

772. Special Topics in Clinical Pharmacy: Advanced. Cr. 2
Prereq: consent of instructor. No credit after PHA 672 or PPR 572. Lectures and discussions on pharmacotherapeutics and philosophies of clinical pharmacy practice. (W)

775. Oncology Therapeutics: Advanced. Cr. 2
Prereq: consent of instructor. No credit after PHA 575 or PPR 575. Material fee as indicated in *Schedule of Classes*. Lecture and discussion on terminology and the basic principles of therapy of the major malignancies, including both pathophysiology and therapy. Ancillary therapy of patients with malignancies; seminar topics presented by students. (F)

781. Intravenous Therapeutics: Advanced. Cr. 2
Prereq: consent of instructor. No credit after PHA 581, PHA 681 or PPR 581. 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. (F)

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)

795. Professional Doctoral Investigation. Cr. 1-5(Max. 5)
Prereq: admission to Pharm.D. program. Independent exploration of an approved area of professional intellectual interest and preparation of an acceptable manuscript suitable for publication. (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.



ANESTHESIA

Office: Room 2V-4, Detroit Receiving Hospital
Acting Chairperson: Prudentia A. Worth

Assistant Professors

Cedestine Harrigan, John Nagelhout

Instructors

Prudentia Worth, Karen Zaglaniczny

Adjunct Associate Professors

Roy Aston, Gerhard Endler

Adjunct Assistant Professor

James J. Claffey

Adjunct Instructors

Donna Auger, Laurie Karbal Brant, Francis Gerbasi Valdor Haglund, Carl Holsey, Kim Mason, Joyce Matthews, Samuel Perov, Steven Salley, Orlando Sison, Nancy Wittstock

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, in cooperation with the Colleges of Nursing and Education, the School of Medicine, Detroit Receiving Hospital and the affiliated anesthesiology departments of the Detroit Medical Center, William Beaumont Hospital and the Veterans Administration Hospital, offers a master's program for two groups of students—hereafter referred to as Track I and Track II candidates.

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.

Track II: This curriculum is designed for the CRNA possessing a baccalaureate degree and who wishes to further his/her skills to prepare to be 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 13. 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.
3. Have an upper division (junior and senior year) honor point average of 2.8 or above.

Applicants whose native language is other than English must demonstrate proficiency in English prior to beginning the program (see page 15).

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 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

2. Provide scores for the General portion of the Graduate Record Examination.
3. Have current certification in Advanced Cardiac Life Support.
4. Have a minimum of one year of experience (two years preferred) in a critical care nursing area. In order of preference, recommended areas are: SICU, MICU, combined SICU-MICU and CCU (or combination). Obstetrics, Post Anesthesia Recovery, Operating Room and Emergency Room experiences receive partial recognition.
5. Obtain a physical examination.
6. Provide, on forms available from the Department, references from the dean or director of the applicant's school of nursing, present employer or supervisor and a practicing colleague who is familiar with the applicant's work as a registered nurse.
7. 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 (fifty-nine 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 20-28.

Track I Candidates: 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 I
AN 713	.....	Primary Clinical Anesthesia Research
AN 714	.....	Advanced Pharmacology of Anesthesia II
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

Track II Candidates: Course Requirements

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 752	.....	Basic Graduate Physiology Lecture
NUR 701	.....	Research in Nursing
NUR 771	.....	Curriculum Theory Development in Nursing
NUR 772	.....	Process of Educational Program Planning in Nursing

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.

Advisers: An adviser will be assigned by the department chairperson. The adviser will approve the *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 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.

Financial Aid

Sources of financial aid for graduate students are described beginning on page 30.

COURSES OF INSTRUCTION¹ (AN)

- 702. Clinical Anesthesia Practicum. Cr. 1**
Prereq: Registered Nurse, admission to professional curriculum. Introduction to clinical anesthesia application. (W)
- 703. Clinical Anesthesia Practicum. Cr. 2**
Prereq: AN 702. Continuation of AN 702. (S)
- 704. Clinical Anesthesia Practicum. Cr. 3**
Prereq: AN 703. Continuation of AN 703. Advanced anesthesia applications. (F)
- 705. Clinical Anesthesia Practicum. Cr. 3**
Prereq: AN 704. Continuation of AN 704. (W)
- 706. Clinical Anesthesia Practicum. Cr. 2**
Prereq: AN 705. Continuation of AN 705. (S)
- 710. Pharmacology I. Cr. 2**
Prereq: Registered Nurse, admission to professional curriculum. Material fee as indicated in *Schedule of Classes*. Introduction to science of pharmacology; focus on drugs used in clinical anesthesia practice. (F)
- 711. Pharmacology II. Cr. 3**
Prereq: Registered Nurse, AN 710. Material fee as indicated in *Schedule of Classes*. Analysis of theories of pharmacology. (W)
- 712. Advanced Pharmacology of Anesthesia I. Cr. 2**
Prereq: B.S., B.S.N., C.R.N.A., consent of adviser. Material fee as indicated in *Schedule of Classes*. General qualitative and quantitative aspects of pharmacology and the interaction and disposition of pharmacological agents and their relation to the clinical administration of anesthetic agents. (F)
- 713. Primary Clinical Anesthesia Research. Cr. 2**
Prereq: Registered Nurse, AN 704, admission to professional curriculum. Development of research methodology for conducting clinical anesthesia. (F)
- 714. Advanced Pharmacology of Anesthesia II. Cr. 2**
Prereq: B.S., B.S.N., C.R.N.A., consent of adviser. Material fee as indicated in *Schedule of Classes*. Correlation of basic and clinical pharmacology of adjunctive pharmacological agents, and their relation to the clinical administration of anesthetic agents, including a research paper review. (W)
- 715. Principles of Anesthesia I. Cr. 5**
Prereq: Registered Nurse, admission to professional curriculum. Material fee as indicated in *Schedule of Classes*. Principles and usage of all anesthesia equipment including electronic instrumentation. Theoretical exploration of various techniques of anesthesia. (F)
- 716. Principles of Anesthesia II. Cr. 3**
Prereq: Registered Nurse, AN 715. Material fee as indicated in

Schedule of Classes. Advanced knowledge in application and use of modern anesthesia monitoring technology. (W)

- 720. Physiology for the Anesthetist I. Cr. 5**
Prereq: Registered Nurse, admission to professional curriculum. Material fee as indicated in *Schedule of Classes*. 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 II. Cr. 2**
Prereq: registered nurse; consent of adviser. 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. Instruction in and clinical application of nurse anesthesia process. (T)
- 778. Professional Dimensions of Anesthesia Practice. Cr. 2**
Prereq: consent of adviser. Analysis of role of professional anesthesia associations, anesthesia accreditation agencies, hospital and governmental regulatory agencies relating to nurse anesthesia practice. (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. Culmination of graduate course work in anesthesia. (T)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

MEDICAL TECHNOLOGY

Office: 233 Shapero Hall

Chairperson and Deputy Dean of Allied
Health Professions: Dorothy M. Skinner

Associate Professor

Dorothy M. Skinner

Assistant Professors

Jane Brown, Ruth Miles, Ann Wallace

Adjunct Professors

A. William Shafer, Richard Walker

Adjunct Instructor

William Sherman

Graduate Degree

Master of Science in Medical Technology with specialization in clinical laboratory instrumentation, education/management, hematology, and immunohematology.

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, hematology and immunohematology provide the theoretical and technical skills required by today's specialist. Those completing the specialization in immunohematology are eligible to sit for a Blood Bank Specialist Certification Examination.

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 13. 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. (NOTE: For applicants to the immunohematology program, this experience should be in blood banking.)

Applicants whose native language is other than English must demonstrate proficiency in English prior to beginning the program (see page 15).

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 48202. Applications are accepted throughout the year. Those wishing to specialize in immunohematology must begin in the fall semester; others may begin in any semester.

Degree Requirements

The minimum requirement for the master's degree is thirty-four credits (thirty-five credits for the immunohematology concentration), taken as a Plan B master's program, and includes an essay (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 for the specialty. All course work must be completed in accordance with the academic procedures of the Faculty of Allied Health Professions and the Graduate School governing scholarship and degrees; see pages 20-28.

Specialties	Credits			Total
	Core	Specialty	Elective	
Clinical Laboratory Instrumentation	15-16	10	9-10	34-36
Education/Management	15-16	11	8-9	34-36
Hematology	15-16	10	9-10	34-36
Immunohematology	13-14	20	2-3	35-37

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

CSC xxx	Graduate-level course in Computer Science
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	Master's Essay

One of the following:

EER 763	Fundamentals of Statistics
EER 764	Fundamental Research Skills
NUR 701	Research in Nursing
PPR 660	Biostatistics
PSL 767	Introductory Biostatistical Methods

Additional Requirements for Clinical Laboratory Instrumentation

I M 748	Fundamentals of Immunology
M T 707	Graduate Instrumentation
M T 787	Special Topics in Clinical Laboratory Instrumentation

* Not required for immunohematology.

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
ACC 601 or MGT 706	.....
	Financial Accounting
	Management and the Organization

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

Additional Requirements for Immunohematology

BIO 507	..... Genetics
I M 760	..... Advanced Immunology
† M T 704	..... Clinical Immunohematology
M T 705	..... Problem Solving Seminar
M T 710	..... Advanced Hematology
M T 789	..... Study in Medical Technology Instruction

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 30 of this bulletin. In addition, a teaching assistantship may be available to a qualified student. Inquiries should be directed to the department chairperson.

† In addition to Core Requirement.

‡ Credit may be earned by examination if the student has Blood Bank Specialist (SBB) certification.

COURSES OF INSTRUCTION¹ (M T)

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)

704. Clinical Immunohematology. Cr. 1-7
Prereq: graduate student in immunohematology. Practical experience covering all aspects of managing and operating a transfusion service. Includes blood procurement, processing, solution of technical and managerial problems. (T)

705. Problem Solving Seminar. Cr. 2
Prereq: graduate student in immunohematology. Seminar provides a medium for integrating and applying previous and current didactic and practical training in the solution of simple and complex immunohematological problems. (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)

710. Advanced Hematology. Cr. 3
Prereq: consent of adviser. Study of the classification, differential diagnosis, pathophysiology and hemo-replacement therapy of diseases involving red and white blood cells. (S)

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)

787. Special Topics in Clinical Laboratory Instrumentation. Cr. 3
Prereq: M T 707 and 788. Topics to be covered include: method evaluation of commercial clinical laboratory correlation of results; troubleshooting; quality control; computer applications. (Y)

788. Study in Clinical Instrumentation and Electronics. Cr. 3
Prereq: written consent of adviser and graduate officer. Material fee as indicated in *Schedule of Classes*. Instruction and laboratory work in areas relating to medical technology. Directed study with laboratory 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)

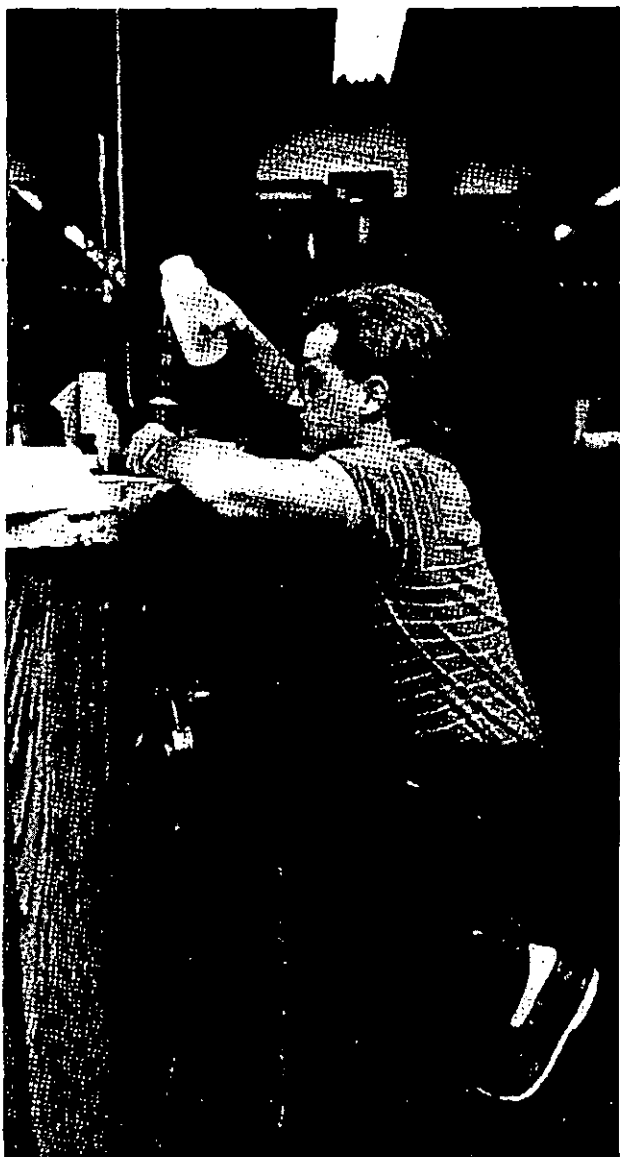
¹ See page 461 for interpretation of numbering system, signs and abbreviations

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: 101 Environmental Health Laboratory, 625 Mullett

Professors

Andrew L. Reeves, Peter O. Warner

Associate Professor

Edward J. Kerfoot

Part-Time Faculty

Leonard L. Jensen, Joseph B. Oliveri, Gerald L. Sattelmeier

Adjunct Faculty

Richard D. Cummings, Gene X. Kortsha, Sarunas S. Mingela, Sandra E. Murphy, Joseph Nachtman, Robert Penney, Robert W. Powitz, Harold W. Rossmore, Howard J. Sawyer, William D. Watt

Cooperating Faculty

Merlin E. Ekstrom, Gordon W. Rose

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 technology.

Part-time evening study is possible in the occupational and environmental health program, except for candidates doing original research (Plan A) in industrial toxicology.

Master of Science

Admission to this program is contingent upon admission to the Graduate School; for requirements, see page 13. Applicants must have a bachelor of science degree from an accredited college or university. Undergraduate course work must include the following:

1. One year of mathematics at the level of pre-calculus (minimum) or calculus (preferred).
2. One year of physics or equivalent.
3. One year of biological science or equivalent.
4. One year of general chemistry.

5. One term of organic chemistry.
6. One term of quantitative analysis.

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 15).

Corequisites may be required if an applicant lacks some entrance requirements. Any such requirements must be satisfactorily completed during the first year of graduate study. Credits earned in such study may not be applied to degree requirements.

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 a minimum of thirty credits in course work plus an essay (two 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*.

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. If Plan A or Plan B are followed, a final oral examination including a defense of the thesis or essay is required. Final comprehensive examinations, both written and oral, are required of all Plan C 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 (352 Mackenzie Hall) 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 702.....	Survey of Occupational and Environmental Health
OEH 710.....	Principles of Industrial Toxicology
OEH 720.....	Air Sampling and Analysis
OEH 741.....	Statistical Procedures in Occupational Health
OEH 789.....	Seminar in Occupation Health

Additional Requirements for Industrial Hygiene

OEH 750.....	Industrial Hygiene Control Methods
OEH 760.....	Principles of Industrial Ventilation
OEH 780.....	Principles of Industrial Noise Control
OEH 799 (for Plan B).....	Master's Essay Direction

Additional Requirements for Industrial Toxicology

OEH 705.....	Environmental Pollution
OEH 717.....	Toxicology of Inorganic Compounds
OEH 718.....	Toxicology of Organic Compounds
OEH 785.....	Periodical Literature in Occupational Health
OEH 799 or OEH 899	
	Master's Essay Direction
	Master's Thesis Research and Direction

Recommended Electives*

OEH 703.....	Occupational Health Management
OEH 707.....	Radiation Safety: Principles and Practice
OEH 724.....	Occupational Epidemiology
OEH 730.....	Clinical Chemical Analysis in Occupational Health
OEH 732.....	Chemistry of Industrial Processes
OEH 762.....	Control of Industrial Wastes
OEH 764.....	Industrial Hygiene Practice
OEH 770.....	Optical Microscopy for Industrial Hygienists
OEH 790.....	Directed Study

Advisers: The program coordinator 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 program requests, *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 program 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 program coordinator and the college graduate officer before any subsequent registration.

Financial Aid

Sources of financial aid for graduate students are enumerated in the section on Graduate Financial Aid beginning on page 30 of this

* 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.

bulletin. In addition, there are a limited number of teaching assistantships available to qualified students. Inquiries should be directed to the program coordinator.

COURSES OF INSTRUCTION¹ (OEH)

702. 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)

703. 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)

705. Environmental Pollution. (CHE 555). Cr. 3

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

707. Radiation Safety: Principles and Practice. Cr. 2

Material fee as indicated in *Schedule of Classes*. Basic principles and practices of radiation safety in the work environment. Radioactivity emissions and decay; interaction of radiation with matter; radiation dosimetry; health physics instrumentation; internal and external radiation protection; practical demonstrations of concepts. For students in the basic physical, life and earth sciences; engineering; and industrial hygiene and radiological health. (S)

710. Principles of Industrial Toxicology. Cr. 4

Prereq: OEH 702. Material fee as indicated in *Schedule of Classes*. Toxicity of industrial chemicals which may be inhaled, absorbed through the skin or ingested; dusts, gases, vapors most widely encountered; laboratory studies include inhalation experiments, intratracheal, intravenous injections, other modes of introducing toxic substances into animals and evaluation of their effects. (W)

717. Toxicology of Inorganic Compounds. Cr. 2

Prereq: OEH 710. A survey of metals and their compounds from the viewpoint of their toxicity. Minerals and various mineral fibers are discussed together with their pathogenic properties. (B)

718. Toxicology of Organic Compounds. Cr. 2

Prereq: OEH 710. Survey of organic chemicals by major compound classes from the viewpoint of their occupational and environmental toxicology (drug toxicity not considered); industrial intermediates; agricultural chemicals; household substances, and their hazards; pesticide poisonings, their pathogenesis, and hazard abatement. (B)

720. Air Sampling and Analysis. (CHE 552). Cr. 3

Prereq: OEH 702. 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; direct reading instruments; light and dark field dust counting procedures. (F)

724. (CM 724) Epidemiology. Cr. 2

Epidemiologist's task list; research of problems without known

etiology; infectious and non-infectious models; examination of current problems. (I)

730. Industrial Hygiene Clinical-Chemical Analysis. Cr. 2

Material fee as indicated in *Schedule of Classes*. Theory and practice of analyzing air samples, biological specimens, and bulk samples relating to the occupational environment; heavy metals, solvents, toxic gases; significant metabolites occurring in blood or urine; use of spectrophotometric, polarographic, and other instrumental procedures. (W)

732. Chemistry of Industrial Processes. (CHE 532). Cr. 3

Prereq: OEH 702. 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. (B)

741. Statistical Procedures in Occupational Health. Cr. 3

Prereq: OEH 702. Material fee as indicated in *Schedule of Classes*. 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)

750. Industrial Hygiene Control Methods. Cr. 2

Prereq: OEH 702. 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)

760. Principles of Industrial Ventilation. Cr. 3

Prereq: OEH 702. 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)

762. Control of Industrial Environmental Wastes and Microbiological Contamination. Cr. 2

Under the administrative guidelines set forth by federal toxic substance control and hazardous waste management, newly required chemical and physical screening methods are presented and explained. Recently proposed hospital accreditation requirements governing monitoring for infectious agents, and other occupational exposures including yeasts, molds, fungi, pollens. (F)

764. Industrial Hygiene Practice. Cr. 2

Prereq: OEH 702. Four field visits of approximately two hours each (per semester) plus written report by students; field visits with industrial hygienists to observe monitoring and control activities with governmental and industrial field persons. (S)

770. 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)

780. Principles of Industrial Noise Control. Cr. 3

Prereq: OEH 702. Fundamentals of sound propagation and measurement; use of sound level meters, frequency analyzers, and audiometric devices; methods of abating sound levels. (W)

785. Seminar - Periodical Literature and Current Topics in Industrial Hygiene. Cr. 1

Survey of the periodical literature in the field designed to acquaint the students with a broad cross-section of sources of information. Scheduled seminars allow students to follow one or more journals/topics and prepare reports. (S)

¹ See page 461 for interpretation of numbering system, signs and abbreviations

789. **Seminar - Frontiers in Industrial Hygiene. Cr. 1**
Informative presentation by leaders in the field of industrial hygiene, toxicology, occupational medicine, pollution control and general environmental health. (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. 1-2**
Prereq: consent of adviser. (I)

899. **Master's Thesis Research and Direction. Cr. 1-8 (Max. 8)**
Prereq: consent of adviser. (I)

OCCUPATIONAL THERAPY

Office: 309 Shapero Hall

Chairperson: Miriam C. Freeling

Associate Professors

Elizabeth A. Boles, Suesetta McCree, Nancy Powell

Assistant Professors

Karmen Brown, Miriam Freeling, Sydelle Morrison

Part-Time Instructor

Kathleen Reynolds-Lynch, Linda Lutze

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 individualization. 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, and physical disabilities.

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. Satisfy requirements for regular admission to the Graduate School; see page 13 (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 15).

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, 352 Mackenzie Hall, for binding. A copy of the binding receipt must be presented to the College Graduate Officer before the degree can be certified.

All course work must be completed in accordance with the regulations of the Graduate School governing graduate scholarship and degrees; for requirements, see pages 20-28.

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
O T 730.....	Professional Literature
O T 770.....	Terminal Seminar in Occupational Therapy
O T 775.....	Professional Field Experience

One of the following

O T 799.....	Master's Essay Direction
O T 890.....	Master's Project Direction
O T 899.....	Master's Thesis Research and Direction

Professional Electives*

O T 740.....	Seminar in Current Problems and Trends in Occupational Therapy
O T 750.....	Specialist Roles in Occupational Therapy
O T 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 program requests, *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 any subsequent registration.

Certificates: Interested candidates may concurrently earn a Specialist Certificate in Aging from the Institute of Gerontology (see page 34).

Financial Aid

Sources of financial aid for graduate students are enumerated in the section on *Graduate Financial Aid* beginning on page 30 of this bulletin. In addition, a teaching assistantship may be available to a qualified student. Inquiries should be directed to the department chairperson.

COURSES OF INSTRUCTION¹ (O T)

730. Professional Literature. Cr. 2

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)

* Other graduate level general electives are selected with the approval of the adviser and the College graduate officer.

¹ See page 461 for interpretation of numbering system, signs and abbreviations

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: written consent of adviser and graduate officer. (T)

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. Open only to occupational therapy graduate students. (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

Modern social work is concerned with persons and with organizations in their attempts to cope with life situations and societal problems. The social work profession is composed of people who help deal with some of the social problems of an industrial urban society. Its aim is to prevent societal and personal dysfunction; to help people use and participate in social institutions; to help social institutions respond to people; to plan, implement and improve a wide range of social service programs that enhance the functioning of society and its members.

Professional social workers use the same basic principles in working with an individual, a group or a community. They are educated to assess the problem, to help plan and implement a solution and to evaluate the results. The social worker must be knowledgeable about the goals, policies, functions and activities of the service system in its efforts to meet the needs of individuals, families, groups and communities. The social worker must be knowledgeable about the resources available, both those within the client and those provided by society in social institutions and in the service system. Liking people, believing in the worth of human beings and wanting to help them are additional personal qualities essential to the practice of social work.

Enhancement of human functioning requires that normal developmental needs be met by properly functioning social institutions and by those universally used services which comprise the 'social utilities'. More effective treatment and control of 'social pathologies' also require changes in social institutions and in the service system. For example, the major problem of racism has long been ignored by society and the profession. Its impact on the lives and development of both non-white and white individuals, families and communities has been underestimated. Knowledge about racism and ways to combat it are essential to the profession of social work. The social work profession is engaged in helping to create and maintain public social policies that assure appropriate distribution of services, and will change social institutions in accordance with changing social conditions.

Social workers have long been familiar with the fact that social change, even change which represents advance, can be injurious to many people when it occurs as a consequence of uncontrolled social forces. Today the profession is seeking to harness the energy of social change in a deliberate, humane way. Plans must be designed which articulate societal goals as well as the policies and programs required to achieve them. The urgent tasks of social change present an exciting challenge to the social work profession.

Urban University Setting

The metropolitan area of Detroit provides an exceptional opportunity for the teaching, learning and practicing of social work. Highly industrialized urban areas are close enough to suburban, semi-rural and rural areas to enable the student to be aware of the total fabric of American community life. Social agencies and organizations operating in the Detroit area deal with the usual kinds of social problems but must inevitably deal also with social problems affected by nationality, by racial and minority groups, by management-labor relationships and by other social forces inherent in this kind of community. These agencies provide opportunities for an almost unlimited variety of experiences for the social work student. Individual attention to each student is emphasized by the School and by its faculty. Through this individualization the complexities of the community and of the University become an asset to learning and

professional growth.

The School of Social Work, as an integral part of a large university, is able to draw upon the total offerings of the University for the enrichment of its own curriculum. The variety of resources makes it possible for the School of Social Work to offer a wide range of emphases in professional education for social work.

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; and mental health services. Individual courses are also available at the freshman and sophomore levels and post-degree courses are available to those who have been awarded the bachelor's and master's degrees. 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).

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 may be obtained from the academic services officer at the School of Social Work.

Degrees

Master of Social Work

Graduate Certificates in Child and Family Studies in Gerontology

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 days a week in the field and two days in classes during two consecutive years.

The part-time program is designed to permit students to complete degree requirements over an extended period of time. The purpose of this plan is to make education available at the graduate level for persons with baccalaureate degrees who are unable to undertake two years of full-time study for the master's degree. The plan makes it possible for students to work or engage in other activities during much of the time they are enrolled, and complete all degree requirements within a four-year period. Part-time study is open only to students who have been formally admitted to the program by the Director of Admissions and Student Services. 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 admission for September must be submitted by March 31. Applications received after that date cannot be guaranteed processing.

Applicants to the full-time or part-time program leading to the Master of Social Work degree must: (1) complete and forward to the Office 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, the completed form, *Application for Admission to Graduate Study, School of Social Work* and related materials; (4) have completed thirty semester credits (forty-five quarter 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.

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, 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, Room 150, Administrative Services Building, to the School of Social Work, Office of Admissions.

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.

Each application for admission to the School of Social Work for the program leading to the Master of Social Work degree is given careful review in order to select those students best able to fulfill the

requirements for professional education in this field. The responsibility for deciding whether a student shall or shall not be admitted rests with the School.

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. Admission of graduates from undergraduate social work programs for the M.S.W. program is not automatic. 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.

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.

A limited number of students admitted to advanced standing, to be determined on a year to year basis, may be permitted to waive the one-year residency requirement in order 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.

Details of plans and degree requirements for students who are admitted with advanced standing to the full-time or part-time program are available from the Office of Admissions and Student Services, School of Social Work.

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 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.

Readmission

Former students who had been enrolled in a planned program leading to the Bachelor of Social Work degree or the Master of Social Work degree, 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 (forty-five quarter 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 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 governing graduate scholarship and degrees; see pages 20-28 and 387, respectively. The program includes a core curriculum at the first-year level, and in the second year, one of four concentrations: Administration and Community; Family, Children and Youth Services; Health Care Services; and Mental Health Services. The core curriculum provides the foundation for the second year advanced curriculum.

All students who are admitted to the full-time or the part-time program enroll in the core curriculum in the first year of graduate study. During that time students, in consultation with their advisers, select one of the concentrations for the subsequent advanced curriculum. Students may also build their programs with electives offered in other concentrations and elsewhere in the School or other colleges within the University.

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. Thus students are prepared for work in a rapidly changing and unpredictable environment.

During the core year, students declare their interest for the advanced curriculum concentration.

	<i>credits</i>
S W 704 — Methods of Social Work Practice I	2
S W 705 — Methods of Social Work Practice II	3
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	3
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	

Advanced Curriculum (Methods/Concentrations)

The advanced curriculum builds on the knowledge and skills gained in the first year 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: (a) with individuals, families, groups, communities, or organizations; (b) within an area of social concern; and (c) with vulnerable populations.

	<i>credits</i>
† S W 881 — Research Seminar	3
S W 798 — Field Work for Social Workers	10
* Advanced Practice Methods course	3
Human Behavior and Social Environment course (concentration specific)	2
Electives	7
* Advanced Practice Methods course	2
Social Welfare Policy Analysis and Formulation (concentration specific)	3
Total: 30	

— Concentrations

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

† Students may elect a four-credit group project (S W 896) or a six-credit individual thesis (S W 899) in lieu of the three-credit Research Seminar.

* 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.

each of the two semesters. Students choose one of the following four concentrations where they focus on policy, behavioral dynamics, programs, research and service aspects in an area of social concern.

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, adoption, foster care, juvenile court, schools and residential treatment centers for social dysfunctioning abused or neglected children, or children experiencing life crisis. Examples of sites for social work employment include programs in public and private agencies which provide help to children outside their homes, help to children in their own homes, total family counseling, and help to children and families referred by schools.

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.

M.S.W. Certificate Programs in Child and Family Studies and in Gerontology

Students in the program leading to the Master of Social Work degree may qualify concurrently for certification in two areas of specialization: 1) child and family studies, offered in cooperation with the Merrill-Palmer Institute; and 2) gerontology, available through the Wayne State University Institute of Gerontology. Students may be required to take courses beyond the sixty credits required for the Master of Social Work degree in order to meet the requirements. Specific information for these certificates may be found on page xxx.

ACADEMIC PROCEDURES

For complete information regarding academic rules and regulations of the Graduate School, students should consult the section of this bulletin beginning on page 13. 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 adviser. 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; however, 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. A final oral examination is required of each student with 'C' or lower grades which are not balanced with 'A' grades. 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 last day of the registration period 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 degree is conferred.

Maximum Hours

A student engaged in full-time study in the School of Social Work should plan a program in consultation with the adviser, limiting it within a framework of required courses and electives in order to maintain a standard of scholarly attainment and academic excellence.

The student who is engaged in part-time work should limit registration in proportion to the amount of outside work after consultation with the student's adviser.

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.

Student Liability Insurance

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.

Field Education Manual

This 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.



FINANCIAL AIDS

Scholarships, fellowships and other financial aids are available on a limited basis for those students who cannot afford graduate study. 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.

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 form. 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 this 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.

Scholarships and Awards

Beverly Enterprises Merit Scholarships. Scholarships in gerontology for students pursuing careers in long-term care.

Child Welfare Services Training Grant. Stipends for students in the field of family and children's services.

Patricia L. Dillick Memorial Scholarships. Merit scholarships for graduate students with a high academic achievement record.

Fred and Freda Gentsch Scholarship. Awarded on the basis of merit and financial need.

Edith Harris Memorial Scholarships. Awarded on the basis of academic achievement and financial need.

David McAllister Memorial Scholarships. Awarded by the Detroit Chapter of the Association of Black Social Workers.

Alice Cox Roberts Memorial Scholarship. Awarded on the basis of merit and financial need to Black students in the second year of graduate study.

Harold and Carolyn Robison Scholarships. Awarded on the basis of academic achievement and financial need.

School of Social Work Alumni Association Scholarships. Awarded on the basis of merit and financial need.

Mary Turner Scholarship. Awarded to women students on the basis of academic achievement and financial need.

Leon G. Winkelman Memorial Fellowships. Sponsored by the Winkelman Foundation, awarded on the basis of merit to students in the field of geriatrics.

Whitney M. Young, Jr., Memorial Scholarships. Awarded by the Urban League.

SCHOOL ACTIVITIES

Student Organization

The Student Organization is a vital factor in the programs of the School of Social Work. Having been 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.

The Organization is primarily committed to upholding the student's right to an enriched professional education and, if necessary, serving as a vehicle for redress of grievances. Through the Organization students become involved in the policy-making and curriculum planning for the School. The Organization offers opportunities for students to work toward a more responsive social work education which will enable them to better serve the needs of their clients and communities. A student newspaper, bi-weekly meetings, social and recreational activities, assistance in attendance at relevant conferences, and participation in the National Federation of Student Social Workers are some of the ways the Organization facilitates student communication and awareness of student activities.

Association of Black Social Work Students

The Association of Black Social Work Students (ABSWS) is the Wayne State University School of Social Work Chapter of the National Association of Black Social Work Students. The Association involves itself in educational, research and community service activities on a year round basis. ABSWS assists black students in making the adjustment to the School of Social Work and provides students with supportive educational services. ABSWS also works closely with the Detroit Chapter of the National Association of Black Social Workers (ABS) 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 social work needs with School resources, and to provide an Hispanic-related student forum in the University community.

T.R.E. is the student component of *Trabajadores de la Raza* (T.R.). The national T.R. organization has assisted the School's T.R.E. group's formation and development. In working with the School, social work professional groups, the Hispanic community and concerned agencies, T.R.E. participates in the development of social work roles for Hispanics. 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.



Faculty and Administration

Dean: Leon W. Chestang
Associate Dean: Joseph P. Hourihan
Academic Services Officer: Vickie L. Radoye
Administrative Assistant: Edrene R. Teahan

Professors

Leon W. Chestang, Sidney Dillick (Emeritus), Ruth L. Goldberg (Emerita), Joseph P. Hourihan, Jacob I. Hurwitz (Emeritus), Charles N. Lebeaux (Emeritus), Leon Lucas (Emeritus), Maryann Mahaffey, Betty Rusnack, Kurt Spitzer, Betty Welsh, David Wineman (Emeritus)

Adjunct Professor

Louis A. Ferman

Associate Professors

Ralph Abramowitz, Arthur E. Antisdell, Lester B. Brown, Eddie Davis, Alexander E. Efthim (Emeritus), Helen Francis (Emerita), Theodore Goldberg, Edna S. Harrison (Emerita), Carl Hartman, Kasumi K. Hirayama, G. Evangeline Sheibley Hyett (Emerita), Ronald L. Jirovec, Aaron Krasner (Emeritus), Alice E. Lamont, Thomas P. Melican, Edna P. Miller, Elizabeth J. Phillips (Emerita), Lois L. Quig (Emerita), Melvyn C. Raider, Marian I. Reavey (Emerita), Sandy G. Reid (Emeritus), Mary B. Shapiro (Emerita), Sue M. Smock, Mavis M. Spencer, William H. Turner, Phyllis I. Vroom

Adjunct Associate Professor

Paul A. Koonter

Assistant Professors

Susan W. Downs, William H. Iverson, Jr., David P. Moxley, Hartford Smith, Jr.

Adjunct Instructor

Maureen O. Marcenko

Lecturer

Cecille Y. Dumbrigue

School of Social Work Directory

Dean..... 114 Cohn; telephone: 577-4400
Associate Dean..... 108 Cohn; telephone: 577-4404
General Information..... 10 Cohn; telephone: 577-4409
Admissions and
Student Services 10 Cohn; telephone: 577-4409
Coordinator of Field
Education 200A Cohn; telephone: 577-4479
Recruitment of Minority
Group Students 10 Cohn; telephone: 577-4409
Student Organizations..... 311 Cohn; telephone: 577-4435
Trabajadores de la Raza
Estudiantil (T.R.E.) 311 Cohn; telephone: 577-4435

Mailing address for all offices: School of Social Work, Wayne State University, Detroit, Michigan 48202.

Field Education

The following agencies and persons have worked with members of the Faculty in field instruction during the academic year 1985-1986:

Adult Service Centers, Inc.
LONNIE JOHNSON

Aurora Hospital Osteopathic
ELLEN BROOKS

Barat Human Services
DIANE BOSTIC-ROBINSON

Beacon Day Treatment
VALERIE KAPLANSKI

Beaumont Hospital Psychiatric Social Services
SHIRLEY LEOPOLD

Birmingham Schools
SUSAN ZEIDMAN

Blue Water Mental Health Child Guidance Center
JOANNE BLUM, MARY WEIMER

Bon Secours Nursing Home
PEGGY MCCOY

Boysville of Michigan
ED OVERSTREET, ALICE THOMPSON

Brunt Center
ADRIENNE JAMES

Brightmoor Community Center
DENNIS MUZZI

Camp Fire, Detroit Area Council
PERRY JONES

Camp Oakland Youth Programs, Inc.
CASSANDRA BOWERS, CLARENCE CRAFT

CareGivers (formerly Homemaker Service)
LADORA BARNETT

Catholic Social Services of Macomb County
DEBORAH MCCORMACK

Catholic Social Services of Oakland County
CAROL LANDRY, MARSHA MORAN-SACKETT, IRENE PANUSH, KAREN RAPPLEYE, MARYANN RYAN, SANDRA SHIFF

Catholic Social Services of St. Clair County
IVELISSE AUFFANT

Catholic Social Services of Toledo
REBECCA MASE

Catholic Social Services of Wayne County
SANDRA FOREST, CHARLES GEIGER, AUDREY GEORGES, ANDREA HARTMAN, JOANNE JOCQUE, DELORES MCCLINIC, MARIE PETRICCA, DAVID PODULKA, SYLVIA RUEN, BARBARA SHELTON, LAURA SPITZ, NANCY STEIN, GAIL ZETTEL

Center for Human Resources
GARY WOOD

Child and Adolescent Clinic
NORBERT BIRNBAUM, ED KEENER, JEAN KNUDSEN

Child and Family Services, Thumb Area Branch
DALE BROWN

Children's Aid Society
 MARCIA SAWYER, MARGO WEITZER

Children's Center of Wayne County
 SHIRLEY EDWARDS, TED LEWIS, BONNIE WALKER

Citizens for Better Care
 CELIA SAVONON

City of Detroit, Neighborhood Services Department
 JUANITA MCGILL

Coalition on Temporary Shelter (COTS)
 SISTER ANNETTE ZIPPLE, GLORIA HARRELL

Common Ground
 SANDRA JOHNSON

*Community Services of Oakland
 (formerly Area Services Association)*
 JOHN ERICH

Community Health and Social Services (CHASS)
 RICARDO GUZMAN

Congressman George Crockett, Office of
 TONY ROTHSCHILD

Cottage Hospital
 ERICH AUDRETCH

Crossroads
 JANE CRIMMENS-MARTEN

Dearborn #7 Schools
 JANICE ANSCHUETZ

Detroit Area Agency on Aging
 SANDRA PLUMER

Detroit Councilmember Maryann Mahaffey, Office of
 GERALDINE ELLINGTON

Detroit Health Department
 GARY COOK

Detroit Memorial Hospital
 FE REED

Detroit Public Schools
 ETHEL BURGESS, MAURITA GARDNER, WILMA LEWIS,
 DORIS MCCLOUD

Detroit Receiving Hospital, University Health Center
 SYLVIA BIENSTOCK, BARBARA GROSS, SIGRID JONES,*
 CAROL KATROSCIK, PAUL KOONTER, ELLEN RISKIN,
 ELAINE THOMAS

Detroit Urban League
 DONALD WOODS

Development Centers, Inc.
 CAROL BARTLEY, JIM HASLETT, SANDRA JAFFA, MARSHA
 LABINSKI

*Development Disabilities Institute
 Detroit Receiving Hospital/UHC*
 DAVID MOXLEY

Eastwood Community Clinics
 DON HEALEY, DELORES MASSEY, ROSALIE SCHWARTZ,
 JOAN SILK, DOUG SNOW, PEGGY STERN, LORRAINE
 WAGNER

Fairlawn Center
 MARILYN WINKENS

Family Counseling Center

FRANK SEIFERT

Family Neighborhood Resource Center
 MITZI HOFFMAN

Family Service of Detroit and Wayne County
 LUCILE CANTONI, JODY LAMPTON, JOHNNIE MCCRAY, JIM
 NARAGON, NANCY SPARROW

Family and Neighborhood Services
 MARY LEE PEARSON

Farmington Adolescent Day Treatment Program
 JOHN HORNGREN

Federation of Girls' Homes
 EDNA WALKER, GERI REUTENIK

First Step
 THERESA BIZOE

Franklin-Wright Settlements
 VERNON OLDHAM, DERRICK BROWN

Glen Eden Hospital
 LARRY VOIGHT

Greater Detroit Society for the Blind
 SHIRLEY DINNER

Harper Hospital
 GREGORY IREY, TOM LAIRD, DAVID WESNER, TERRY SAHN

Henry Ford Hospital
 WILLIAM DOWNEY, MARTHA MARTIN, LARRY
 SCHILHANECK

Heritage Hospital
 MARK RUSSELL

Hospice of Southeastern Michigan
 HAZEL MAXWELL, SARAJANE SCHAEFER

International Institute
 HELEN CHARNEY

Jewish Family Service
 ESTHER KRYSAL

Jewish Home for Aged
 KEN SHERMAN

Judson Center
 SARI ABRAMOVICH, DOROTHY MARDEUSZ, BOBETTE
 SCHRANDT, ROSEMARY INSLEY

La Casa
 BETH SINGER

Lafayette Clinic
 DAVID FIRLIT, ARVETA GRADY-FLETCHER, ROBERT M.
 WILLIS

Lakewood Clinic, P.C.
 GERALDINE SCHREIER, JACK SIMONTON

Lamphere Adult Education/Sixma
 FRED OLDS

Lapeer County General Hospital
 FRED KELLEY BERTOCCI, JAMES CHICON

Livonia Public Schools
 CAROL HILLARD

Lula Belle Stewart Center
 RUTH BROWNSTEIN

Lutheran Social Services
 LINDA MCQUEEN

Macomb County Council on Aging

* Deceased

ELIZABETH LEWIS, JOAN MAYER

Macomb County Prosecutor's Office
CATHY ANGELICA

Macomb Family Service
MR. KELLIE CODY, DEATLA KASSIN, PAUL ZIMMER

Macomb Oakland Regional Center
JEANNE BAKALE, UMA KERR

Metro Youth Program, Inc.
DEBORAH OVERSTREET

Monte Vista Shelter
VINCENT LITTLE

Mt. Carmel Mercy Hospital
NANCY ELKINGS, ROBIN SPRAGUE

National Association for the Advancement of Colored People
WINSTON LANG

National Council on Alcoholism
BERNICE GADON

Neighborhood Service Organization
YOLISWA AKPAN, LOUISE BEUTELL, MELVIN GEORGE,
SHARON JAMAL, MARY LEONHARDI

New Center Community Mental Health Program
MARGARET EVANS, SEVILLA HARRIS

North Detroit General Hospital
CARLENE RAWLINGS

North Oakland Community Center
LORI SHAPIRO

Oak Park Children's Day Treatment Program
RAY BUSH, NANCY URBAN

Oakland County Children's Village
PAUL DUBE

Oakland County Council for Children at Risk, Inc.
JAMES MICKELSON

Oakland County Department of Social Services
JANE DIKEMAN

Oakland County Juvenile Court
PATRICIA HINZY, SALLY KAPLAN, JENNIFER POOLE

Oakland Family Service
DEBORAH FRISCH, STEPHANIE KORTZ, DONNA LACKIE,
SALLY SCHOTTENFELS, LAURA SLAUGHTER

The Orchards Children's Services
DAN UTCHENIK, SUSAN WAINSTOCK, SUE WOTRING

Oxford Community Schools
FERN FOSGATE

Oxford Institute
BARRY MCINTOSH

Pontiac 50th District Court
JIM BUTLER, THOMAS QUINN

Pontiac General Hospital
AUDLEY BAILEY, LEE CAVANAUGH, JUNE CLAPHAM, MR.
JAN GETZ, ED WEST

Pontiac Public Schools
SIVIA EILENDER, REGINA KUPER

Port Huron Area School District
DENNIS BILINA, DANA GREY

Port Huron Hospital
DAVID MULHOLLAND

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Psychiatric Center of Michigan
RICHARD BOSSCHER, DONNA BULAK

Rape Counseling Center
ALTHEA GRANT

Residential Care Alternatives
BRENDA SCOGGINS, ANN SHELLEY, JOSEPH TARDELLA,
PAT VULPE

Romulus Help Center
DICK WELLSBACHER

Royal Nursing Center
BYRON PETRAS

Rubicon Odyssey
NANCY GRAHAM

Sacred Heart Women's Day Treatment Program
SONIA ARCHER

Salvation Army Harbor Lights
WES SHEA

Sarah Fisher Center
CAY LAMB

Sinai Hospital
MARY BAROFF, JEAN ERVASTI, ROSE HIRSCH

South Macomb Hospital
MARIAN COREY

Southeast Oakland Community Mental Health Program
LYNNDA EBRIGHT, ELLIOTT ROSS

Southfield Lathrup Counseling Services
V. GAIL SIMPSON

Southfield Rehabilitation Center
CONNIE DABNEY

Southwest Oakland Community Mental Health Clinic
NANCY GAYDOS, ANNE OSTROTH

Spaulding for Children
JUDITH MCKENZIE

Square Lake Counseling Center, P.C.
ROBERT BAILEY

St. Clair County Community Mental Health
WALTER BADKE, MARTHA BARENBRUGGE, LOIS
GARRIOTT, MARINUS THEON, RON NEFF

St. Clair County Department of Social Services
IVAN BENEDICT

St. Francis Home for Boys
PEGGY INNIS, SISTER MARY ELLEN WALENTA

St. Joseph Mercy Hospital—Fox Center
DIANE WITTL

Todd Phillips Children's Home
CHERYL SEAY

United Community Services
PERRY JONES, MICHELLE VENTOUR

Van Dyke Schools—Carlson Elementary School
MARY PETERSON

Veterans' Administration Hospital—Allen Park
FRANCES MCGIVERN, AARON RUBIN

Veterans' Administration Hospital—Ann Arbor
LAWRENCE OBRIST

Virginia Park Citizen Service Corporation
BARBARA STARLING

Washtenaw County Mental Health Child Guidance Clinic
PAULA BURDELSKI

Wayne County Department of Social Services
BRENDA PETTY, SANDRA WHITTAKER

Wayne County Juvenile Court
WYLINE JONES

Wayne State University Psychology Clinic
SHIRLEY BERMAN

Webb House
SISTER CATHERINE MARY

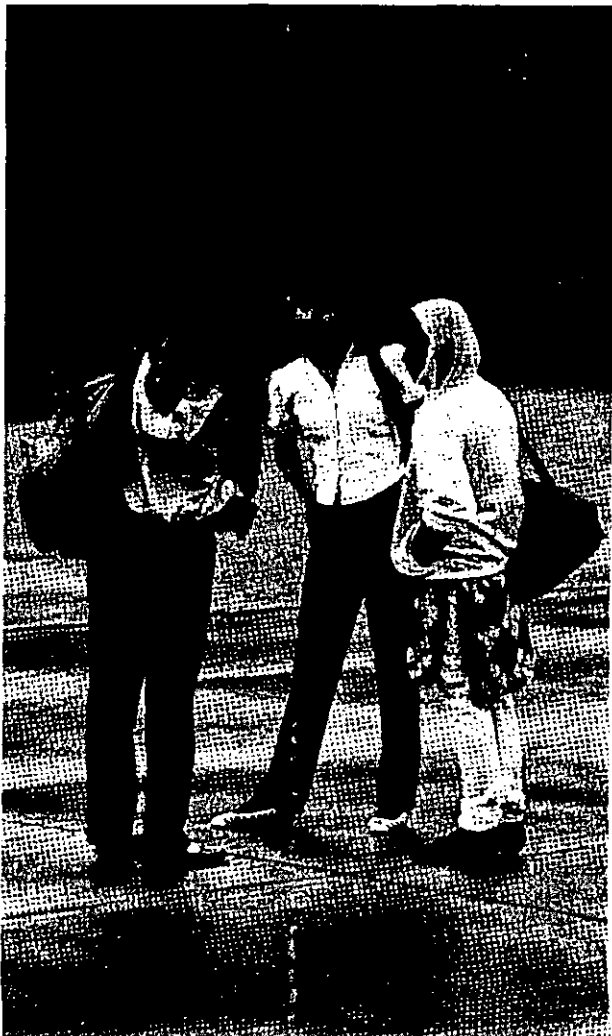
Western Y.M.C.A.
BETH SINGER

Whole Life Program
LINDA SHRIVER, DIANE SURMA

Willow Run Schools
LAURIE KATZ

Windsor Group Therapy Project
DALE SWAISGOOD

Wyandotte General Hospital
WENDY LYON



COURSES OF INSTRUCTION¹

Social Work (S W)

555. (NUR 525) Introduction to Developmental Disabilities. 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. (Y)

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)

575. (ECO 544) Economics of Social Welfare. Cr. 4

Prereq: ECO 102 or consent of instructor. The economics of social welfare. Economics of education, unemployment, poverty and discrimination. Emphasizes analysis of interests of both taxpayers and beneficiaries on government programs to deal with these economic problems. (I)

651. Social Work and the Black Community. 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. (T)

673. Seminar in School Social Work. Cr. 2

(I)

691. Special Topics in Social Work. Cr. 2-4

Topics of current interest to be announced in *Schedule of Classes*. (I)

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. (Y)

705. Methods of Social Work Practice II. Cr. 3

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. (Y)

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

See page 461 for interpretation of numbering system, signs and abbreviations

environments; use of simulations, videotapes, role-playing, and discussions. (Y)

707. Social Work Practice with Individuals, Families and Groups. Cr. 2-3

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 in interpersonal practice. Assistance with transition to the graduate program. (S)

720. Social Work Practice with Organizations and Communities. Cr. 2-3

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)

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)

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. (Y)

758. Application of Behavioral Modification Theory to Interpersonal Helping. Cr. 2

Prereq: M.S.W. degree; or coreq: S W 798. An examination of behavior modification theory with emphasis on the specific adaptability of the theory to social work practice. (T)

759. Complex Organizations. Cr. 2

Examination of organization theory and conceptual models pertinent to the analysis of social service organizations. (S)

766. Human Behavior in the Social Environment II. Cr. 3

Prereq: S W 756. Open only to students admitted to a planned program in social work. Adult development using an ecological perspective and behavior in groups, organizations, and stress and minority situations. Interaction in near and far environments with risks and opportunities in developing competence, identity and relationships in social functioning. (Y)

772. Introduction to Social Welfare in the United States. Cr. 3

Introduction to social welfare in the United States. 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

Prereq: S W 789 or admission to planned program in School of Social Work. 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. (S)

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, graduate officer and Dean.

Individual direction in reading and research on selected topics. (T)

798. Field Work for Social Workers. Cr. 2-11(Max. 35)

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; 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: second year graduate student in the School of Social Work, or M.S.W. degree for elective credit only. Advanced study of relationships and therapeutic processes in interpersonal practice through the analysis of case material. (I)

820. Seminar for Field Instructors. Cr. 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. (F)

825. Application of Practice Theories with Organizations and Communities I. Cr. 3

Prereq: S W 705; 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 and consent of instructor. The second of two advanced method courses to prepare social workers for practice in institutions and neighborhoods of the community and society. (F)

827. Planning and Financial Data Reports in Social Agencies. Cr. 2

Prereq: S W 705; 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; coreq: 798. Examination of models, typologies and strategies of planned change in communities, institutions, organizations and society. (F)

849. Social Work Administration Seminar. Cr. 2

Prereq: S W 841; coreq: 842 and 798. Models for planned change and organizational intervention are examined. Seminar group functions as a management consulting team analyzing the administrative structure and processes of a cooperating social agency. (I)

851. Psychopathology in Children. Cr. 2

Prereq: S W 705 or 707 or 720; coreq: 798. 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 705 or 707 or 720; coreq: 798. Psychoneurotic reactions and personality disorders in adults as background for social work

- assessment and intervention. (T)
- 854. Family Theory. Cr. 2**
Prereq: S W 766 or M.S.W. degree; coreq: 798. Family theory as a background for learning family diagnosis and treatment. (I)
- 855. Social Functioning: Human Sexuality. Cr. 2**
Coreq: second year graduate student 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**
Coreq: S W 798 or M.S.W. degree or consent of instructor. 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. (S)
- 857. Families, Children and Youth: Problems in Social Functioning. Cr. 2**
Prereq: S W 750 or 766; second year graduate standing in School or M.S.W. degree. Study of the interplay of biological, psychological, social and environmental factors which influence adversely the normal development of families, children and youth; assessment of developmental and environmental problems as a background for social work practice. (Y)
- 858. Health and Disease: Impact on Social Functioning. Cr. 2**
Prereq: S W 750 or 766 and second year graduate standing in School of Social Work 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. (Y)
- 859. Application of Behavioral Interventions in Interpersonal Practice. Cr. 2**
Prereq: S W 705 or 707 or 720; coreq: 798 or M.S.W. degree. Behavioral applications to interpersonal helping, including operant and respondent conditioning approaches, cognitive restructuring, systematic desensitization, relaxation training, and assertive training applied to practice with individuals, families and groups. (Y)
- 860. Advanced Interpersonal Practice in Group Treatment. Cr. 2**
Prereq: S W 705 or 707 or 720; 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. Students are expected to carry a therapeutic group assignment in their field placements. (Y)
- 861. Advanced Interpersonal Practice with Families. Cr. 2**
Prereq: S W 705 or 707 or 720; 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 705 or 707 or 720; 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 705 or 707 or 720; 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 705 or 707 or 720; 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 705 or 707 or 720; 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)
- 867. Interpersonal Practice in Health Care. Cr. 2**
Prereq: S W 705 or 707 or 720; 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 705 or 707 or 720; 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 705 or 707 or 720; 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**
Open only to second year full-time students. 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. (Y)
- 872. Family, Children and Youth Services: Policy Analysis and Formulation. Cr. 3**
Prereq: S W 772 and second year standing in School of Social Work or M.S.W. degree. Components of social welfare program and policy analysis and formulation illustrated by content derived from the field of services for children, family and youth. (Y)
- 873. Health Care Services: Policy Analysis and Formulation. Cr. 3**
Prereq: S W 772 and second year graduate standing in School of Social Work or M.S.W. degree. 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 772 and second year graduate standing in School of Social Work or M.S.W. degree. Components of social welfare program and policy analysis and formulation illustrated by content derived from the field of mental health services. (Y)
- 881. Research Seminar. Cr. 3**
Prereq: S W 783; coreq: 798. Review and analysis of selected social work research studies to sharpen research utilization skills. (T)
- 896. Group Project Research and Direction. Cr. 1-4(4 req.)**
Prereq: S W 783; coreq: 798. (T)
- 899. Master's Thesis Research and Direction. Cr. 1-6(6 req.)**
Prereq: S W 783; coreq: 798. (T)

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College of Urban, Labor and Metropolitan Affairs

INTERIM DEAN: SUE M. SMOCK

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Foreword

A new College of Urban, Labor and Metropolitan Affairs has been approved by the Board of Governors, to be implemented effective Fall Term 1987. The primary mission of the new college is to promote, stimulate and engage in pure and applied urban-oriented research and scholarship; 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 College of Urban, Labor and Metropolitan Affairs is designated to include the Center for Black Studies; the Center for Chicano-Boricua Studies; the Center for Labor Studies; the Center for Urban Studies; the Archives of Labor and Urban Affairs; and the University's Urban Professorship Program.

The major context of the new 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.

Initially the College shall be responsible for the administration of the Bachelor of Arts in Labor Studies, and the Co-Majors in Urban Studies, Black Studies, and Chicano Studies. However, additional programs may be approved in the future. For further information, contact the Office of the Dean, College of Urban, Labor and Metropolitan Affairs.

Center for Black Studies

586 Student Center

The Center for Black Studies grew out of the struggles of black students to establish an educational facility committed to filling the serious omissions in knowledge about the black experience. Since its inception in 1972, the Center has combined teaching, research and service in an effort to enhance the quality of life for students and all residents in the urban environment of Wayne State University.

The Center has assumed the position of an educational catalyst, seeking to play a dramatic role in the growth and development of black people both here in America and abroad. As one means of attaining these goals, the Center currently offers an academically substantive and politically relevant co-major curriculum. Complete information concerning this program, as well as Black Studies course offerings, may be found in the University's Undergraduate Bulletin.

Center for Chicano-Boricua Studies

300 Criminal Justice Institute

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

Teaching: The Center's academic component consists of the CBS freshman year program, and the CBS Co-Major program. The freshman program extends equal educational opportunity to Latino high school students in the Detroit metropolitan area and offers a curriculum which is socially and intellectually directed to the Latino experience in the United States. CBS core courses fulfill social science and humanities requirements in the College of Liberal Arts. The CBS Co-Major program is designed particularly for students who plan to work with Latino communities.

Research: The Center's research effort is in education and the social sciences as they relate to Spanish origin groups in the United States.

Service: The center serves both the University and the Latino community. Center personnel sit on various local and state committees, task forces and commissions concerned with the Spanish speaking community.

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. The Archives Newsletter is published periodically to describe recent acquisitions, research in progress and other topics.

Center for Urban Studies

5229 Cass Avenue

The Center for Urban Studies is an interdisciplinary research, training and service organization focusing on contemporary society. The Center's major activities are: (1) research and evaluation in a number of areas related to urban issues, and (2) 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 four 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; and (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. The Center features variety and flexibility in its encouragement of cooperative efforts in urban studies.

Faculty of the University

FACULTY OF THE UNIVERSITY

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Campus Maps

Signs and Abbreviations

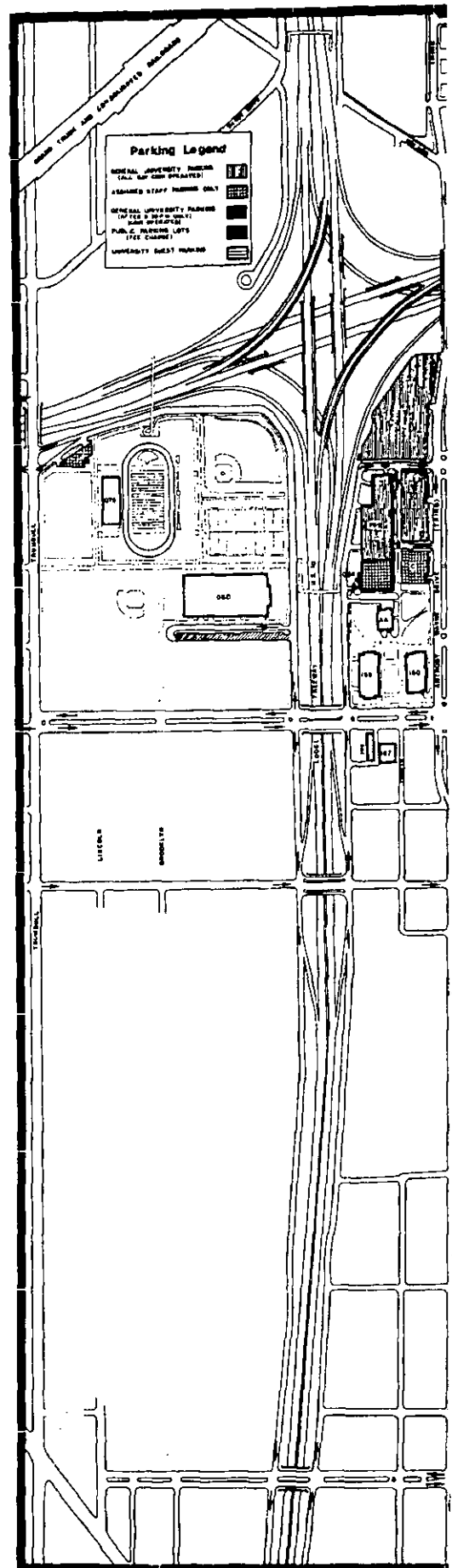
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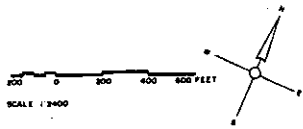
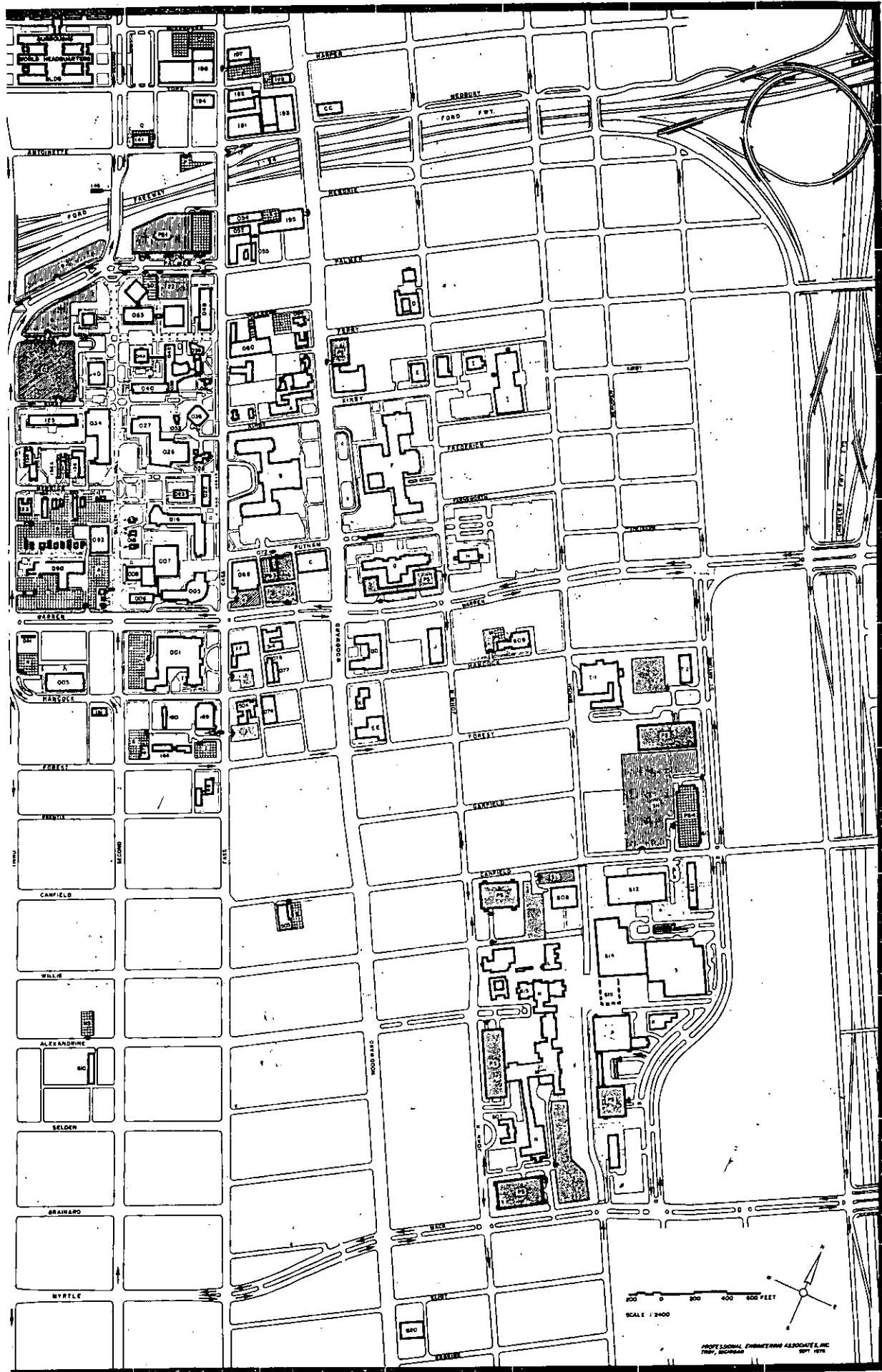
MAIN CAMPUS

- 191 Administrative Services Buildings No. 1 and 2
- 192 Administrative Services Building No. 3
- 042 Alumni House — Community Arts Center
- 033 Art and Art History Building
- 040 Art Wing — Community Arts Center
- 092 Bookstore, University
- 007 Chemistry
- 048 Richard Cohn Hall
- 039 Community Arts Auditorium
- 193 Computing and Data Processing Center
- 134 Helen L. DeRoy Apartments
- 023 Helen L. DeRoy Lecture Hall
- A Detroit Historical Museum
- F Detroit Institute of Arts
- B Detroit Public Library
- 140 College of Education Building
- 090 College of Engineering Building
- 167 Engineering Technology Building
- 150 General Lectures Hall
- 189 Hilberry Classic Theatre
- 196 Metropolitan Detroit Justice Center
- 008 Kresge Science Library
- 064 Institute of Labor; University Development Offices
- 053 Law School
- 006 Life Sciences Building
- 069 David Mackenzie Hall
- 080 Frederick C. Matthaei Physical Education Center
- 043 McGregor Conference Center
- D Merrill-Palmer Institute
- 038 Schaver Music Building
- 001 Old Main
- 051 Parking Structure No. 1
- 056 Parking Structure No. 2
- 072 Parking Structure No. 3
- 003 Physics Building
- 022 Meyer and Anna Prentis Hall
- 077 Public Safety Department
- 026 G. Flint Purdy Library
- G Rackham Educational Memorial Building
- 190 Reading and Study Skills; English Composition Clinic
- 036 Walter P. Reuther Library of Labor and Urban Affairs
- 005 Science Hall
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- 141 Speech and Hearing Center
- 016 State Hall
- 060 University Services Building
- 028 Urban Studies, Center for

DETROIT MEDICAL CENTER

- P Children's Hospital of Michigan
- L Grace Hospital Division
- K Hannan House
- M Harper Hospital
- T1 Hutzel Hospital
- 615 Kresge Research Building
- 611 Medical Research Building
- 609 C.S. Mott Center for Human Growth and Development
- 613 Parking Structure No. 4
- J Prentis Cancer Center
- N Rehabilitation Institute
- 612 Gordon H. Scott Hall of Basic Medical Sciences
- 608 Vera Shiffman Medical Library

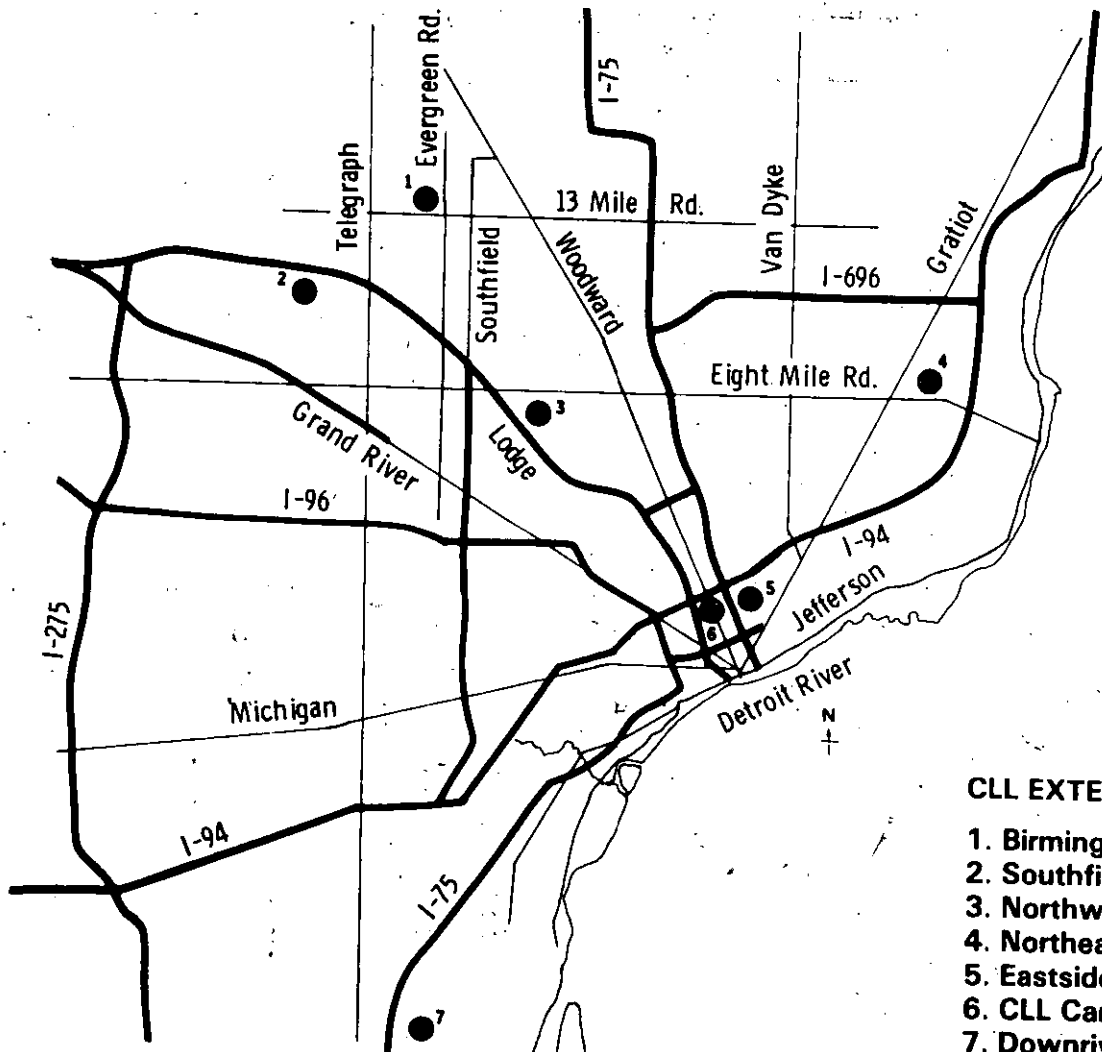
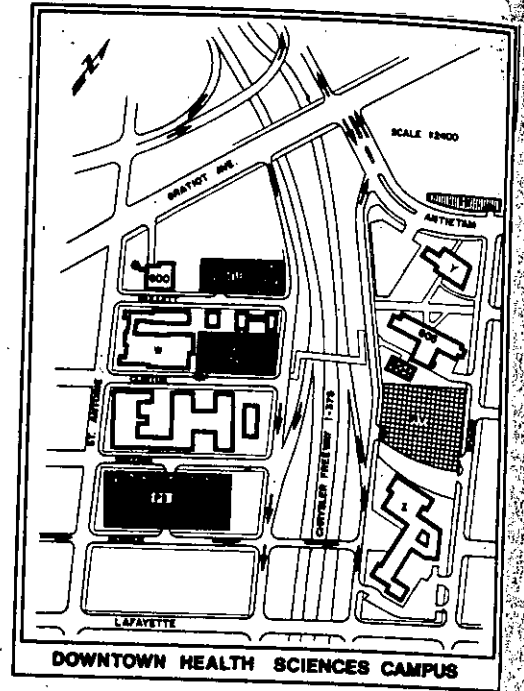




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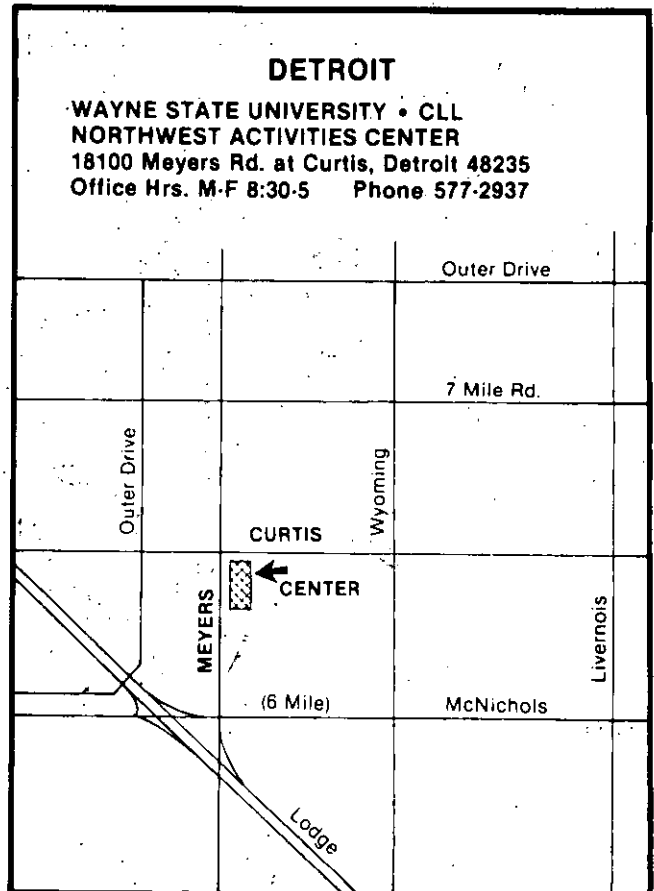
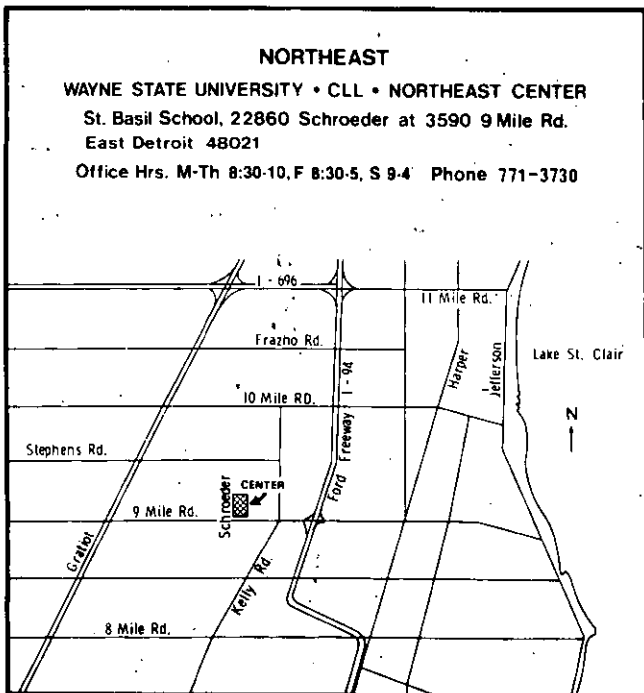
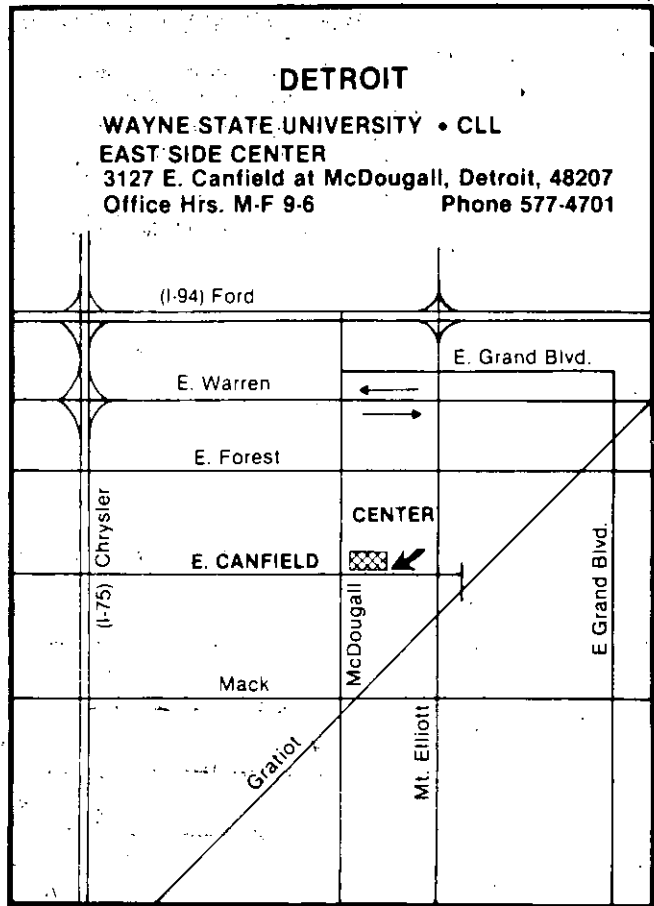
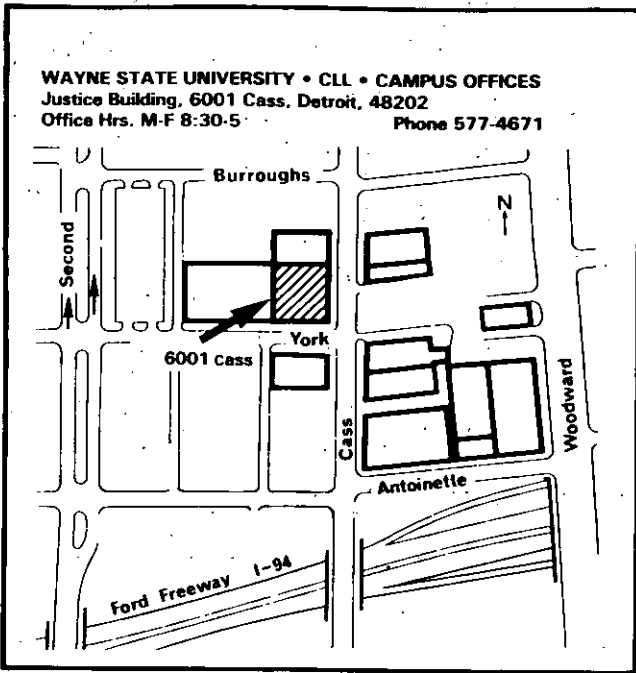
- 600 Clinical Laboratory Building
- X Detroit General Hospital
- W Detroit Memorial Hospital
- 604 Health Sciences Annex
- 605 Health Sciences
- Z Lafayette Clinic
- Y Wayne County Medical Society

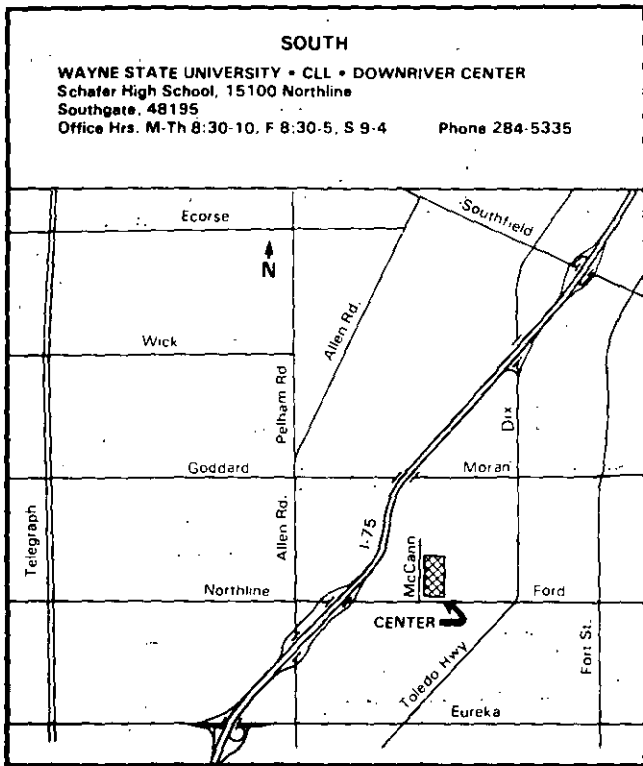


CLL EXTENSION CENTERS

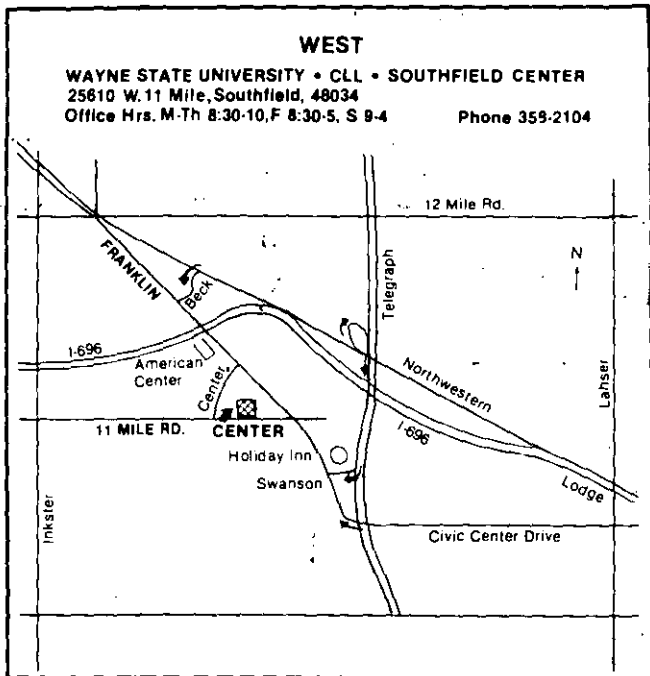
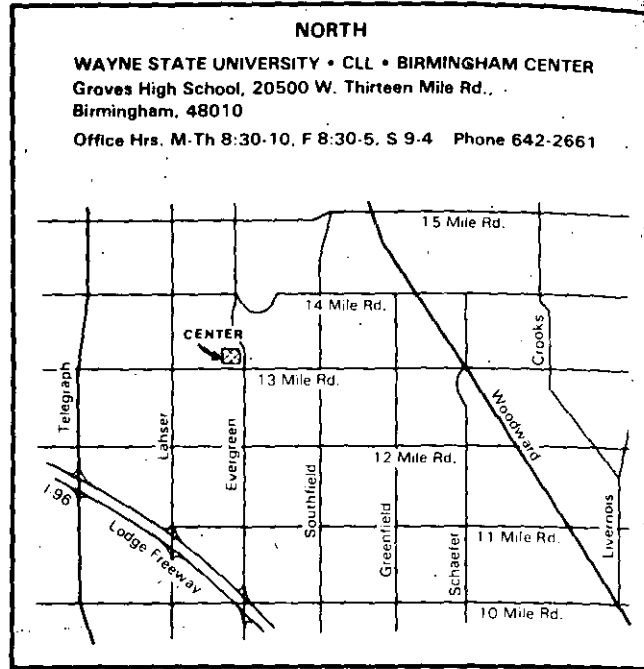
1. Birmingham Center
2. Southfield Center
3. Northwest Center
4. Northeast Center
5. Eastside Center
6. CLL Campus Office
7. Downriver Center

**College of Lifelong Learning
EXTENSION CENTERS**

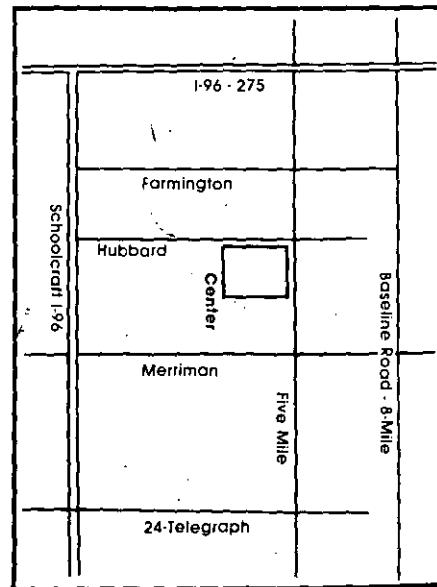




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SIGNS AND ABBREVIATIONS

SUBJECT AREA CODES

The following abbreviations of departments and subject areas are used in prerequisites to courses and in curricular information; numbers indicate the page in this Bulletin where their courses are listed.

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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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