

# Wayne State University 

UNDERGRADUATE BULLETIN 1989-91


A Degree of Excellence

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## Academic Calendar 1989-1991

## Spring/Summer Term, 1989

Term begins $\qquad$ . Tues., May 2, 1989
Final registration .................................................................Tues., May 2 - Wed., May 3
Spring and Spring/Summer Classes begin..................................................Mon., May 8
Last day for filing degree applications .......................................................Mon., May 8
Memorial Day recess................................................................................Mon., May 29
Day scheduled as Monday for Spring
and Spring/Summer Sessions
Fri., June 2
Mail registration for Fall Term ................................................... Fri., June 9 - Fri., July 7
Classes end for Spring Session.
............. $\qquad$ Fri., June 23
Examination periad for Spring Session ............................ Mon., June 26 - Tues., June 27
Summer Session begins..........................................................................Wed., June 28
Independence Day recess .........................................................................Tues., July 4
Day scheduled as Tuesday for Spring/Summer
and Summer Sessions ..........................................................................Fri., July 7
Classes end for Spring/Summer Session......................................................Fri., July 28
Examination week for Spring/Summer Session ...................Mon., July 31 - Thurs., Aug. 3
Classes end for Summer Session..............................................................Tues., Aug. 15
Study Day for Summer Session ................................................................Wed., Aug. 16
Examination period for Summer Session .............................Thurs., Aug. 17 - Fri., Aug. 18
Spring/Summer Term ends.
Mon., Aug. 28, 1989

| $\dagger$ University year app | Tues., Aug. 29, 1989 |
| :---: | :---: |
| Term begins | .........Tues., Aug. 29 |
| Final registration | Mon., Aug. 28 - Thurs., Aug. 31 |
| Labor Day recess. | . Mon., Sept. 4 |
| Classes begin | Tues., Sept. 5 |
| Last day for filing degree applications . | .Tues., Sept. 5 |
| Mail registration for Winter Term. | ...Mon., Oct. 16 - Fri., Nov. 3 |
| $\ddagger$ Day scheduled as Thursday | ....Tues., Nov. 21 |
| $\ddagger$ Day schedujed as Friday | ... Wed., Nor. 22 |
| Thanksgiving Day recess | Thurs., Nov. 23 - Sat., Nov. 25 |
| Classes end | ... Wed., Dec. 13 |
| Study Day. | Thurs., Dec. 14 |
| Commencement | .... Thurs., Dec. 14 |
| Examination week | Fri., Dec. 15 - Thurs., Dec. 21 |
| Holiday recess. | 25, 1989 - Mon., Jan. 1, 1990 |
| Term ends... | .............Sun., Dec. 31, 1989 |

## Winter Term, 1990

| Term begins ....................... | Mon., Jan. 1, 1990 |
| :---: | :---: |
| Final registration $\qquad$ Tues., Jan. 2 - Fri., Jan. 5 |  |
| Classes begin | Mon., Jan. 8 |
| Last day for filing degree applications | Mon., Jan. 8 |
| Mail registration for Spring/Summer Term. | Mon., Feb. 19 - Fri., March 9 |
| Spring recess. | Mon., March 12 - Sat., March 17 |
| Classes end | .... Sat., April 21 |
| Examination week | Mon., April 23 - Sat., April 28 |
| Term ends | ... Jues., May 1 |
| Commencement | .....Thurs., May 3 |
| University year appointments end | Sun., May 27, 1990 |

[^0]Spring/Summer Term, 1990

|  | d., May 2, 1990 |
| :---: | :---: |
| Final registration | Tues., May 1 - Wed., May 2 |
| Spring and Spring/Summer Classes begin | Mon., May 7 |
| Last day for filing degree applications | Mon., May 7 |
| Memorial Day reces | Mon., May 28 |
| Day scheduled as Monday for Spring and Spring/Summer Sessions | ... Fri., June 1 |
| Mail registration for Fall Term | Mon., June 18 - Fri., July 6 |
| Classes end for Spring Session | .. Fri., June 22 |
| Examination period for Spring Session | on., June 25 - Tues., June 26 |
| Summer Session begins | Wed., June 27 |
| Independence Day recess | .Wed., July 4 |
| Day scheduled as Wednesday for Spring/Summer and Summer Sessions $\qquad$ | .Fri., July 6 |
| Classes end for Spring/Summer Term | Fri., July 27 |
| Examination week for Spring/Summer Term | .Mon., July 30 - Thurs., Aug. 2 |
| Classes end for Summer Session. | ........Tues., Aug. 14 |
| Study Day for Summer Session | .. Wed., Aug. 15 |
| Examination period for Summer Session | ..Thurs., Aug. 16 - Fri., Augg. 17 |
| Spring/Summer Term ends... | .... Mon., Aug. 27, 1990 |

Fall Term, 1990*

|  |  |
| :---: | :---: |
| $\dagger$ University year appointments begin $\qquad$ <br> Term begins $\qquad$ Tues., Aug. 28 |  |
| Final registration | Mon., Aug. 27 - Thurs., Aug. 30 |
| Labor Day recess. | Mon., Sept. 3 |
| Classes begin | Tues., Sept. 4 |
| Last day for filing degree applicatio | .Tues., Sept. 4 |
| Mail registration for Winter Term | . Mon., Oct. 15 - Fri., Nov. 2 |
| $\ddagger$ Day scheduled as Thursday | Tues., Nov. 20 |
| $\ddagger$ Day scheduled as Friday | Wed., Nov 21 |
| Thanksgiving Day recess | .Thurs., Nov. 22 - Sat., Nov. 24 |
| Classes end | ..... Wed., Dec. 12 |
| Study Day | Thurs., Dec. 13 |
| Commenceme | Ihurs., Dec. 13 |
| Examination week | .....Fri., Dec. 14 - Thurs., Dec. 20 |
| Holiday recess. | ..Tues., Dec. 25, 1990 - Fri., Jan. 1, 1991 |
| Term ends | Mon., Dec. 31, 1990 |

## Winter Term, 1991*

Term begins.
Tues., Jan. 1, 1991
Final registration ...................................................................Wed., Jan. 2 - Sat., Jan. 5
Classes begin............................................................................................Mon., Jan. 7
Last day for filing degree applications .........................................................Mon., Jan. 7
Mail registration for Spring/Summer Term..........................Mon., Feb. 18 - Fri., March 8
Spring recess.............................................................. Mon., March 11 - Sat., March 16
Classes end ............................................................................................ Sat., April 20
Examination week ........................................................... Mon., April 22 - Sat., April 27

Term ends .............................................................................................. Tues., Apr. 30
Commencement ......................................................................................Thurs., May 2
$\dagger$ University year appointments end.................................................... Sun., May 26, 1991

## General Information

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.

Contained in the following section are the general rules and regulations for undergraduate study at Wayne State University, as well as descriptions and locations of University student services. For additions, amendments, and specific applications of the following regulations, consult the individual school and college sections of this bulletin. For graduate regulations, degree programs and curricula, consult the Wayne State University Graduate Bulletin. It is the responsibility of the student to meet and to satisfy all University, College and program requirements.

## 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 goats with pride in its progress and confidence in its future.

## History of the University

Wayne State has more than 155,800 living alumni. More than 117,000 of them live in the state and more than 100,000 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 428-432.)

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 <br> College of Education <br> College of Engineering <br> School of Fine and Performing Arts

Graduate School
Law School
College of Liberal Arts
College of Lifelong Learning
School of Medicine
College of Nursing
College of Pharmacy and Allied Health Professions
School of Social Work
College of Urbap, 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.

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 College of Lifelong Learning, the McGregor Memorial Conference Center, and the various schools, colleges, centers and institutes.

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

Addiction Research Institute<br>Bioengineering Center<br>C.S. Mott Center for Human Growth and Development<br>Center for Automotive Research<br>Center for Black Studies<br>Center for Chicano-Boricua Studies<br>Center for Health Research<br>Center for Judaic Studies<br>Center for Molecular Biology<br>Center for Peace and Conflict Studies<br>Center for Urban Studies

Developmental Disabilities Institute
Information Technology Institute
Institute for Manufacturing Research
Institute of Chemical Toxicology
Institute of Gerontology
Labor Studies Center
The Management Center
Merrill-Palmer Institute for Family and Human Development
Radiation Oncology Center

## 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 41 for description of services available to disabled students.

## Academic Programs and Degrees Symbols and Abbreviations

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


## Academic Programs and Degrees

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

| School/College and Major | $I$ | II | III | IV | V | VI |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |

## School of Business Administration



## College of Education



## College of Engineering



## College of Liberal Arts


School/College and Major ..... I
College of Lifelong Learning
General Studies BGS, BTGS
School of Medicine
Anatomy and Cell Biology ..... MS
MS PhD MS ..... PhD, MD/PhD
Biochemistry ..... MS ..... PhD
Cellular and Clinical Neurobiology ..... PhD
Community Health Services ..... MS
Community Health Services Research and Evaluation. ..... GC
Immunology and Microbiology ..... MS
PhD, MD/PhD
Medical Physics ..... PhD
Medicine ..... MD
Molecular Biology and Genetics ..... MS ..... PhD
Pathology ..... PhD
Pharmacology ..... MS
$\mathrm{PhD}, \mathrm{MD} / \mathrm{PhD}$
$\mathrm{PhD}, \mathrm{MD} / \mathrm{PhD}$
Radiological Physics ..... 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 BSNPhD
Nursing Administration ..... SCP
Nursing, Parenting and Families ..... MSN
College of Pharmacy and Allied Health Professions
Anesthesia ..... MS
Medical Technology BS ..... MS
Mortuary Science 3 Yr.Certif.
Mortuary Science ..... BSMS
Occupational and Environmental Health ..... MS
Occupational Therapy BS..............PBC ..... MS
Pharmaceutical Sciences, Experimental Techniques ..... GC
Pharmaceutical Sciences ..... MS
BS
Pharmacy
Pharmacy, Clinical ..... PharmD
Pharmacy, Hospital ..... MS
Physical Therapy ..... BS
Radiation Therapy Technology ..... BS
School of Social Work
Social Work ..... BSW
Scial Work ..... MSW
College of Urban, Labor, and Metropolitan Affairs
Chicano-Boricua Studies (Co-Major Program) ..... BA
Labor Studies ..... BA
Urban Studies (Co-Major Program) ..... BA

## Undergraduate Admission

The Office of Undergraduate Admissions, is located on 3 East, Helen Newberry Joy Student Services Center, Wayne State University, Detroit, Michigan 48202. Admissions counselors are available for personal conferences to aid the prospective student. Telephone: 577-3577.

College of Lifelong Learning (CLL): Undergraduate admission to degree programs and other programs offered by the College of Lifelong Learning, including the University Studies/Weekend College Program and the Community Education Program, is governed by procedures of that College. See the College of Lifelong Learning section of this bulletin for details, pages 433-443.

## Application

An official Application for Undergraduate Admission with a $\$ 20.00$ non-refundable application fee must be filed in the Office of Admissions before any consideration regarding admissibility can begin. The application form may be secured from the Office of Admissions. High school students in Michigan can secure an application from their high school counselor. Michigan community college students may obtain an appplication at their community college.

The completed application, including transcripts and any other records necessary for admissions consideration, must be in the Office of Admissions before final registration for the desired semester, to ensure adequate time for processing. Applications received in the four weeks prior to final registration will be processed as rapidly as possible, but no decision can be guaranteed.

## When to Apply for Admission

1. Students still in high school may apply after completion of their junior year.
2. Out-of-state applicants (including transfer students not currently attending another college) who do not plan to enroll in another college or university before entering Wayne may apply up to eleven months in advance of the term desired.
3. Applicants presently registered at another college or university should apply early in the last term prior to transfer.

## Admission Requirements

Admission to Wayne is selective. In order to qualify for admission an applicant must present scholastic records indicating college preparation and ability to undertake a college degree program. Graduates of accredited high schools can qualify for admission in two ways: (1) admission is assured if the cumulative high school grade point average is 2.75 ('B-minus') or above; and (2) admission is granted if the high school grade point average is between 2.00 and 2.74 , providing Scholastic Aptitude Test (SAT) scores of at least 450 Verbal and 400 Mathematics (or American College Test (ACT) standard composite score of at least 20 ) are achieved.

Transfer students who have completed at least a year of college work (thirty semester credits or forty-five quarter credits) at an accredited institution with a 2.00 (' C ') cumulative grade point average will be considered for admission on the basis of that work. For those students who have completed less than an academic year of credit with a ' $C$ ' average at another institution, the high school record will be used as an
additional factor in determining admissibility.
Applicants who are at least eighteen years of age, who lack high school diplomas and who have been out of high school at least six months, should consult with an admissions counselor if they wish to be considered for admission to a degree program.

Project 350: Special admissions criteria and procedures apply under this program. Contact the special counselor in the Office of Admissions for information. See also descriptive information under Special Student Service Programs, page 43.

## Recommended High School Preparation

1. English (four years recommended): Students entering the University should be able to (1) comprehend the main and subordinate ideas in written works, lectures and discussions; and (2) conceive ideas about a topic and be able to organize them for presentation in both verbal and written forms using standard English sentences. Effective use of the English language is central to one's ability to succeed at the University and in the professions and occupations for which our students are preparing.
2. Mathematics (four years recommended): Entering students should be able to (1) add, subtract, multiply and divide using natural numbers; (2) use the mathematics of integers, fractions and decimals; (3) understand ratios, proportions, percentages, roots and powers; and (4) perform the mathematical operations of algebra and geometry.

While most careers for which University students are preparing require mathematical competency, an increasing number of careers in the science and technical curricula require advanced preparation in mathematics.
3. Biological and Physical Sciences (three years recommended): Students should be acquainted with (1) concepts of matter, energy, motion and force and the natural laws and processes of the physical sciences in general; (2) the science of life and living matter with special reference to growth, reproduction and structure; and (3) laboratory methods. A basic understanding of the physical and biological sciences is essential for many fields of University study, and is necessary if one is to comprehend our world and the impact of science and technology on it.
4. Social Sciences/History (three years recommended): Students should study different cultures and societies - their social systems, customs, communities, values, economics, governments, and politics. A knowledge of the main events and ideas that have shaped our nation and its place in the world should also be possessed by entering students. They should understand how the past bears upon the present condition and future course of mankind. As the social sciences improve one's appreciation of the scientific method and other approaches to critical analysis; an understanding of history is requisite to the informed exercise of citizenship in a free society.
5. Foreign Languages (two years recommended): Proficiency in a foreign language not only introduces students to non-English speaking cultures but also heightens awareness and comprehension of one's native tongue. Language is the basic instrument of thought, and the ability to read, speak and write a foreign language permits one to understand another culture in a more funamental way. Foreign language competency will open up career opportunities denied to those without it.
6. Fine Arts (two years recommended): Students entering the University should be acquainted with the visual and performing arts, through study and/or participation. Several academic disciplines at the University require high levels of skill in the arts. Study in this area enriches life and heightens one's sense of beauty and aesthetic perception.
7. Computer Literacy: Some formal instruction in the logic and use of computers in problem solving and data retrieval is increasingly important in all fields of study.

## Transfer Admission

1. Transfer students are considered for admission without entrance examinations if they meet the following minimum conditions:
(a) Completion of at least a year of college work (thirty semester credits or forty-five quarter credits) at an accredited college institution with a cumulative ' $C$ ' average (2.00).
(b) Students who have attended unaccredited institutions should consult with an admissions counselor to determine admissibility.
(c) For those students who have completed less than an academic year of credit with a ' $C$ ' average at another institution, the high school record will be used as an additional factor in determining admissibility.
2. If an applicant has at least a 2.0 grade point average from both high school and college but lacks the completion of thirty hours of transferable credit, he/she may elect to take either the Scholastic Aptitude Test (SAT) or the American College Test (ACT). Minimum scores on the SAT of at least 450 Verbal and 400 Mathematics, or a composite score on the ACT of at least 20, are required. Examination scores are not to be construed as an adequate substitute for good achievement in course work.

## Transfer of Undergraduate Credits

Wayne State University policy governing transfer credit from all accredited institutions of higher education will be applied equally to students transferring from community colleges and from baccalaureate colleges and universities. With the exception of a credit-hour acceptance limit on non-baccalaureate-granting institutions (which basically have programs whose extent is not designed to replicate more than the first two years of traditional baccalaureate institutions), transfer credit policy will apply equally to all transfer students, regardless of whether or not such students have completed requirements for a two- or four-year college degree.

General Rules Concerning Transfer of Credit: Wayne State University will accept equivalent academic credit from accredited baccalaureate-granting institutions, and up to sixty-four semester credit hours from accredited non-baccalaureate degree-granting institutions. Credits accepted for transfer must be for courses for which a course equivalence exists or which have been determined to be of a traditional academic nature.

Transfer of Credit from Institutions NOT Accredited by a Regional Accrediting Agency: Wayne State University may accept for transfer those credits for which a grade of ' $A$ ' or ' $B$ ' was earned from those institutions with candidacy status from a regional accrediting agency; or from other accredited institutions provided that the institution 1) grants a baccalaureate or associate degree, 2) is fully accredited by an agency recognized by the Council on Postsecondary Education (COPA), and 3) the courses presented for transfer are shown to have equivalency or are determined to be of traditional academic nature.

Technical, Vocational and Applied Credit: To facilitate transfer of students, Wayne State University will accept for transfer up to twelve semester hours of credit earned in technical, vocational and applied (TVA) courses at two- and four-year colleges if such courses are determined to be cognate or related to a student's intended program. For students transferring from non-baccalaureate degree granting institutions, the twelve TVA credits will be included in the sixty-four credit limitation.

Transfer of course work graded 'D': Wayne State University will accept for transfer credit course work carrying the grade of ' D ', provided the cumulative grade point average earned by the transfer student meets admission standards. Acceptance of transfer credit carrying the grade of ' $D$ ' in fulfillment of major program requirements will follow the current policy governing acceptance of ' $D$ ' grade credits earned by native students.

Since some programs do not allow native students to enroll in a course when a ' $D$ ' is obtained in a prerequisite course, the grades will not contribute to the Wayne State University honor point average.

Transfer of Remedial or Developmental Coursework: Credit earned in courses designated remedial or developmental will not transfer.

Transfer of Redundant or Duplicative Coursework: Transfer credit will not be awarded for redundant coursework (i.e., courses with substantially duplicative content). Credit will be awarded for only one course in any set of redundant courses.

Residency and Upper Division Requirements: Transfer students will be required to meet the University and College residency requirements, and to obtain the same number of upper division credits in fulfillment of the baccalaureate degree as are required of native students in specific major programs.

Junior Standing: Wayne State University will award junior standing to all transfer students for whom sixty or more semester hours of credit have been accumulated, whether they are transferred credits or credit earned at Wayne State University. Junior standing will not guarantee automatic entry to major and professional programs in the Schools and Colleges. Transcripts will be individually evaluated to determine whether all prerequisites for major and professional standing have been met by native and transfer students.

General Distrbution Requirements: Transfer credits for courses which have a course-equivalence relationship to courses at Wayne State University that have been certified to meet native general distribution requirements will likewise contribute to satisfaction of general distribution requirements for non-native students. Courses of a traditional academic nature that lack equivalency may also contribute to satisfaction of general distribution requirements if they have been determined to have comparable subject matter equivalency to courses taken by native students.

## Advanced Placement Tests

Superior performance in the College Board Advanced Placement Tests will entitle an entering freshman to consideration for advanced placement and/or advanced standing credit up to a maximum of a full year's work in the areas covered by the examination. These areas include American history, European history, art history, studio art, biology, chemistry, computer science, English, French, German, Latin, Spanish, mathematics, music literature, music theory, and physics. Advanced placement and/or advanced standing credit will be awarded in accordance with policies adopted by the appropriate department. Interested students should contact the Office of Admissions.

## College Examination Program

The College Board sponsors the College-Level Examination Program (CLEP) which affords students and prospective students the opportunity to demonstrate their academic proficiency at the freshman-sophomore college level in various areas and in specific subjects whether or not they have had previous formal college instruction in the materials covered by the tests. As described by the College Board, the General Examinations are intended to provide a comprehensive measure of undergraduate achievement in the five basic areas
of the liberal arts: English composition, humanities, mathematics, natural sciences and social sciences. They are not intended to measure advanced training in any specific discipline, but rather to assess a student's knowledge of fundamental facts and concepts, his/her ability to perceive relationships and his/her understanding of the basic principles of the subject. The content of the General Examinations is similar to the content of those subjects ordinarily included in the program of study required of most general education students in the first two years of college.

The Subject Examinations are essentially end-of-course tests developed for widely taught undergraduate courses. They measure understanding of basic facts and concepts, as well as the ability to apply such understanding to the solution of problems and the interpretation of materials. Questions that require of a student only rote recall are avoided.

Superior performance in these examinations will be considered as a basis for granting advanced placement and/or advanced standing credit as well as for waiving parts of the general education requirements of the College. For further information, please consult advisers, school or college offices, or the University Counseling Services.

For information on credit by special examination, see page 31.

## Special Requirements and Professional Admission

For additional undergraduate admissions information relating to special requirements and professional admission in certain colleges, please refer to the following school or college sections: Business Administration - page 49; Education - page 83; Engineering -pages 112-114; Engineering Technology -page 142; Lifelong Learning —pages 335, 338; Nursing —page 353; Pharmacy and Allied Health Professions -pages 365-366 and 378; Social Work -page 403-404.

## 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.

## International Students

This university is authorized under Federal law to enroll non-immigrant alien students. A student from another country desiring admission should file an Application for Admission to Undergraduate Studies for Applicants from Other Countries, with a $\$ 30.00$ non-refundable application fee, with the admission office. Full instructions for admission procedure, academic requirements and language standards are included with the application forms. A student from a non-English speaking country must take an English Language Proficiency Examination prior to admission or have a minimum Test of English as a Foreign Language (TOEFL) score of 550. Arrangements should be made through the Office of Admissions. For information on international student admission to the Graduate School, see the Wayne State University Graduate School Bulletin.

## Readmission

## Following an Interruption in Attendance

Undergraduate students who were previously admitted and registered at Wayne State University and whose attendance has been interrupted need not reapply at the Office of Admissions. It is strongly recommended that if the student left in good standing, he/she report to the college of his/her choice for any special instructions regarding his/her return to classes. A copy of the student's last cumulative record should be obtained from the Records Office before meeting with college officials.

## Phoenix Program (Second Start)

The Phoenix Program gives undergraduate students who left Wayne State University on Probation or Dismissal the opportunity to petition for return under a second start policy. To be eligible for such petition, the student must not have enrolled at Wayne State University for at least five consecutive years. Petitions for re-entry are decided by the Dean of the School or College in which the student is matriculated or seeks to enter. With the approval of the Dean, the student and an academic adviser develop an academic contract and the adviser closely monitors the student through the first twelve credit hours of academic work.

To return to regular status, the student must complete twelve semester credit hours with a grade of ' $C$ ' or better, and satisfactorily complete the Mathematics Competency and English Proficiency requirements of the University General Education Requirements within two years from the time the first course is taken under the Phoenix Program. Should the student earn any grade below ' $C$ ' in his/her first twelve credits in the Phoenix Program, the student will be excluded from the University. To maintain the integrity of the student's academic record, previous work will remain on the transcript; however, the credits and honor point average (h.p.a.) will be adjusted to reflect the honor point average earned since the start of the Phoenix Program.

For information about the Phoenix Program, students should contact the Dean's Office of the school or college in which the student is matriculated or seeks to enter.

## 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. In accordance with action of the Board of Governors, a portion of these fees is used for operation of the Student Center Building.

## Undergraduate Tuition and Fees <br> Freshmen and Sophomores:

Resident $\qquad$ .$\$ 40.00$ Registration Fee plus $\$ 65.50$ per credit. Non-Resident $\$ 40.00$ Registration Fee plus $\$ 146.50$ per credit.

Juniors, Seniors and Post-Bachelors:
Resident $\qquad$ . $\$ 40.00$ Registration Fee plus $\$ 77.00$ per credit. Non-Resident $\qquad$ $\$ 40.00$ Registration Fee plus $\$ 174.75$ per credit.

## Student Fees

Application Fees: Applications for admission to any undergraduate, graduate or professional program must be accompanied by a $\$ 20.00$ application fee. The application fee for international students is $\$ 30.00$ These fees are not refundable. There is no application fee for applicants sixty years of age or older, except for applicants to the Law School and School of Medicine.

Application Fee, School of Medicine: Persons who have submitted a first application to the School of Medicine through the American Medical College Application Service (AMCAS), and who are asked to submit additional material (secondary application), must pay a non-refndable fee of $\$ 25.00$ for the processing of the secondary application.

Registration Fee: There is a $\$ 40.00$ non-refundable registration fee, except that students enrolled in the Visitor Program shall pay a $\$ 20.00$ non-refundable registration fee.

Late Registration Fee: Any student registering after the prescribed registration date (as indicated in the Schedule of Classes for the applicable term) must pay a $\$ 30.00$ non-refundable registration fee.

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

Add Process Fee: A $\$ 10.00$ add process fee is assesed students who increase credit hours after the second week of classes.

Course Material and Breakage Fees: Breakage fees and/or course material fees may be assessed, the latter when a relatively large portion of instructional costs involves the use of consumable resources. These fees occur principally in courses with associated laboratory work, extensive computer use, or similar use of consumable materials. Funds received from breakage and course materials fees are deposited to the fund from which the instruction is supported, and are to be used by the college or school for expenses associated with the courses to which they apply. The imposition of such fees requires the approval of the president or his/her designee. Only in unusual circumstances, and only with the direct approval of the president, may breakage or material fees exceed $\$ 30.00$ in any course.

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

$$
\begin{aligned}
& \text { Lock and storage basket........................ \$ } 3.00 \\
& \text { Half-locker and lock .............................. } 10.00 \\
& \text { Full locker and lock } \\
& 15.00
\end{aligned}
$$

Bowling Fee: Students electing a course in bowling must pay a $\$ 20.00$ fee for bowling lane rental. This fee is paid at the first meeting of class and is not refundable.

Examination Fee for Credit by Examination: The fee for an examination taken to establish credit by examination is $\$ 10.00$ per credit hour.

Music Fees: Students registering for music courses taken as private lessons pay a fee of $\$ 52.00$ for one credit hour. For three credit hours, the additional fee is $\$ 105.00$. In the event of withdrawal, the student will receive a refund of the difference between the fee assessed and the cost to the University of any lessons provided, but in all cases a minimum of $\$ 5.00$ will be retained by the University.

Graduation Fee: There is a $\$ 15.00$ graduation fee.
Transcript Fee: There is a $\$ 3.00$ fee for an official transcript, and a $\$ 1.00$ fee for an unofficial transcript.

Duplicate 1.D. Fee: There is a fee of fifty cents for duplicate identification.

## Payment of Tuition and Fees

Checks or money orders must 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:

## Mail Registration

Students must pay the $\$ 40.00$ Non-Refundable Registration Fee when submitting the Mail Registration Schedule Request form. Full tuition must be paid during 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.

## 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 fee assessment 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. (For Academic Probation Holds on Records, see page 31.)

## 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 classificiation is being sought, save for temporary absences as defined in paragraph two below.
2. For the purposes of these regulations, the terms 'residence' and 'domicile' are synonymous. In general, domicile is the place where a person actually resides with the intention of making it the person's true, fixed, permanent home and principal establishment and to which, whenever (s)he is temporarily absent, (s)he has the intention of returning. Full-time attendance at school outside Michigan and initial enlistment in a military service are examples of temporary absences. Other absences for more than six months will be presumed to be nontemporary. The fact of physical presence at the dwelling-place and the intention to make it a home must concur and the intention must be to make a home in fact in a certain place, and not an intention to acquire a domicile in order to obtain the benefit of the legal consequences of having a domicile there. A person may have but one domicile at a time, and a domicile, once established, continues until it is superseded by a new domicile.
3. Normally, the sojourn in this state of a student from another state for the primary purpose of attending school is not residence and it is presumed that a non-resident at the time of his or her enrollment continues in that classification throughout his or her presence as a student, except where it can be established that his or her previous
domicile has been abandoned and a new one established. If a student enrolls in undergraduate school for more than eight credits, or in graduate school for more than six credits, or in Law School for more than ten credits in any one full length term, within six months after arrival in Michigan, it is normally presumed that the student's sojourn is for the purpose of attending school and not to establish domicile.
4. The following facts, although not conclusive, have probative value in support of a claim for residence classification: acceptance of an offer of permanent employment in this state; former residence in the state and the maintenance of significant connections therein while absent; economic or social compulsion causing a person to abandon a former residence and acquire residence in the state with attendance at the University only an incident to such residence.
5. The following facts, standing alone, are not accepted as sufficient evidence of domicile: employment by the University as a fellow, scholar, assistant, or in any position normally filled by students; a statement of intention to acquire a domicile in this state; voting or registration for voting; the lease of living quarters; payment of local and state taxes; automobile registration; driver's license; or continued presence in Michigan during vacation periods.
6. For purposes of these regulations, the age of majority is 18 years. A minor does not have the capacity to establish his or her own domicile. Normally, the domicile of a minor follows:
(a) That of the parents or surviving parent;
(b) That of the parent to whom custody of the minor has been awarded by a divorce or other judicial decree; or
(c) That of the parent with whom the minor in fact makes his or her home, if there has been a separation without a judicial award of custody; or
(d) That of an adoptive parent, where there has been a legal adoption, even though the natural parents or parent may be living; or
(e) That of a 'natural' guardian, such as grandparent with whom the minor in fact makes his or her home, where the minor has permanently left his or her parental home and reasonable expectation of substantial financial support from the parents has been dissolved.
(f) If a Michigan resident parent or guardian of a minor moves his or her residence to another state, the minor shall remain eligible for resident tuition status as long as (s)he continues to attend school regularly in this state.
7. Where a general guardian has been appointed by the state of the ward's domicile, at the time of appointment the ward's domicile presumption remains in that state. The appointment by a Michigan court of a resident guardian of a minor not domiciled in this state at the time of appointment has no effect upon the domicile of the ward.
8. A minor who has permanently left his or her parental home, and who has no reasonable expectation of substantial financial support from his or her parents or legal guardian, etc., may qualify for residency status as if ( s )he were of majority age.
9. An alien student may apply for resident status under one or more of the following regulations in the same manner as a citizen, if he/she is in the United States for other than a temporary purpose. In order to demonstrate that he/she is here for other than a temporary purpose, the alien student must be either a permanent resident alien with an I-151 or I-551 Alien Receipt Card or an 'applicant for adjustment' to permanent resident alien status; OR an alien with a G-4 visa; OR an alien with an I-94 Arrival-Departure Record Card, endorsed either 'refugee' or 'applicant for adjustment'; OR an alien with documentation from the Immigration and Naturalization Service that he/she has been granted asylum in the United States; OR an alien with
other documentation from the Immigration and Naturalization Service that reflects status equivalent to one of the above denominated categories.

## - Review Procedures

## 1. Initial Classification and Appeal

(a) Registering under proper residence and advising the Office of Admissions of changes in circumstances which might affect residence classification is the responsibility of the student. Questions concerning a student's residency should be raised initially with the Office of Admissions.
(b) A student may challenge the initial classification by filing an Application for Residence Classification with the Registration 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 became 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. 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.

The $\$ 40.00$ Registration Fee is non-refundable. 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 the 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 Drop/Add Form will be considered effective on the day it is received in the Registration Office. If a 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 Registration Office before the conclusion of the term in which special consideration is sought.

## Class Ranking

Ranks are determined according to the number of degree credits which the student has satisfactorily completed. The classifications are as follows:

| Freshman ...................................... 0 to 29 credits, inclusive |  |
| :---: | :---: |
| Sophomore | 30 to 59 credits, inclusive |
| Junior | 60 to 89 credits, inclusive |
| Senior | .. 90 credits or above |
| School of Business Administration |  |
| Freshman ...................................... 0 to 31 credits, inclusive |  |
| Sophomore . ................................... 32 to 63 credits, inclusive |  |
| Junior .......................................... 64 to 95 credits, inclusive |  |
| Senior | ... 96 credits or above |

## College of Education

Freshman 0 to 30 credits, inclusive
Sophomore .31 to 61 credits, inclusive

Junior. 62 to 93 credits, inclusive

Senior.
94 credits or above
College of Pharmacy and Allied Health Professions- Faculty of Pharmacy: For purposes of Faculty of Pharmacy ranking, in addition to degree credits earned, consideration is also given to particular professional courses still to be completed.

## Office of Scholarships and Financial Aid

## 2 East, Helen Newberry Joy Student Services Center; 577-3378

The Office of Scholarships and Financial Aid assists students and parents in meeting their educational expenses. These expenses include tuition, fees, books, supplies, room, board and transportation. The Office administers federal, state and institutional sources, based both on financial need and academic performance. Financial aid counselors are available to assist students by appointment, on a walk-in basis, or by telephone.

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

Undergraduate and graduate students are encouraged to apply for financial assistance by the priority deadline of April 1 . The Wayne State Application for Firiancial Aid, along with the Financial Aid Form (FAF) or Family Financial Statement (FFS) are required to determine the student's eligibility for financial assistance. Applicants may be required to verify the information provided on the financial statement before aid is officially awarded.

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

Wayne State University Program for Merit Scholars: The Merit Scholar Program provides full tuition scholarships for selected Michigan high school and community college students who have demonstrated outstanding scholastic ability as they graduate from their educational institutions. Information is available from the Undergraduate Office of Admissions.

University Scholarships and Awards: The University has a wide range of private scholarship and loan funds that are awarded on the record of academic performance and financial need. The Wayne State Application for Private Scholarships is available from the Office of Scholarships and Financial Aid. The student applicant for private scholarships is also required to submit two letters of recommendation and previous high school and/or college transcripts for award consideration.

Many private donors have established funds to assist Wayne State students in their pursuit of higher education. Funds often have specific requirements related to a student's major academic area, enrollment status, and honor point average. The following funds are a few of the many awards available:

Alumni Association Annual Scholarship
Barba Family Scholarship
Albert C. Dames Trust Scholarship
Albert Feigenson Scholarship
Douglas and Winifred Fraser Scholarship
Henry M. Seldon Scholarship
Women of Wayne Incentive Scholarship
Potential applicants should contact the Office of Scholarships and Financial Aid for a more complete listing of available scholarship awards.

Air Force ROTC Scholarships: The Air Force offers financial assistance on a competitive basis to students interested in completing the AFROTC program and entering the Air Force as second lieutenants after graduation. Scholarships are available for periods of two to three and one-half years. Scholarships pay full tuition and fees, a book allowance, and a $\$ 100$ per month stipend while in school. Wayne State students receive AFROTC training on the University of Michigan campus. For information, call the AFROTC recruiter at (313) 747-4093.

Fulbright Grants for graduate study abroad are available in some ninety countries in all disciplines. These grants provide for transportation and living expenses for an academic year. Graduating seniors should apply no later than October 15 of the year preceding planned departure. For further information and application forms, contact the Fulbright Program Adviser, Penrith Goff, Department of Romance and Germanic Languages and Literatures.

## Degree Requirements

DEGREE REQUIREMENTS: To earn a bachelor's degree at Wayne State University, a student must satisfy the following minimum requirements, as well as any other requirements for specific degrees stipulated by the Schools/Colleges, Departments, and Programs of the University.

1. Complete a minimum of 120 credits with a cumulative honor point average of 2.00 or higher for all Wayne State University course work.
2. Complete the University General Education Requirements as specified below.
3. Complete all School/College, Departmental and Program requirements.
4. Complete a minimum of thirty credits at Wayne State University.

## 5. Credil Limitations:

a) Credit by special examination may not be counted as resident credit, but such credit, if earned during a semester in which the student is registered for a regular course(s), will not be considered an interruption of residence.
b) Not more than thirty-two credits earned through one or more of the following programs will apply towards graduation: credit earned by the College-Level Examination Program, Advanced Placement, International Baccalaureate, Credit by Special Examination, or other credit earned for a course in which the student has not been regularly enrolled in a University course.
c) Not more than sixteen credits by Special Examination may be earned in any one subject.
d) Not more than sixty-four credits transferred from a two-year institution may be applied toward graduation.

SECOND BACHELOR'S DEGREE: A student who holds a bachelor's degree from any accredited institution may receive a second bachelor's degree from Wayne State University by satisfying the following minimum requirements:

1. Complete at least thirty credits at Wayne State University beyond the first bachelor's degree.
2. Meet all School/College, Department, and Program requirements for the degree.

CONCURRENT DEGREES: A student who wishes to simultaneously receive two different bachelor's degrees from Wayne State University must satisfy the following minimum requirements:

1. Complete a minimum of 150 credits.
2. Complete all University, School/College, Department, and Program requirements for each degree.

GRADUATION APPLICATION: Degrees are NOT awarded automatically upon completion of scholastic requirements. To be considered as a candidate for a degree, students must file an Application for Degree form by the first day of classes for the term in which the students expect to graduate.

SCHOOL/COLLEGE REQUIREMENTS: Schools/Colleges, Departments, and Programs may establish degree requirements above and beyond those stated here. For statements of any such specific degree requirements, students should consult the School/College and Departmental sections of this bulletin.

## UNIVERSITY REQUIREMENTS <br> IN GENERAL EDUCATION

Major, minor, cognate, and elective credit requirements for University degrees are specified by the individual Schools and Colleges of Wayne State University. Students should consult the respective School and College sections of this bulletin for these requirements. $A L L$ undergraduate degree programs include satisfaction of the University General Education Requirements, which are outlined below.

University-wide General Education Requirements apply to all undergraduate students seeking baccalaureate degrees from Wayne State University - irrespective of the College or School in which they may be enrolled. Since the various Colleges and Schools may impose additional College or School requirements and/or specify particular courses which their students must elect in fulfilling the University-wide Requirements, it is essential that all students seek advice from the University Advising Office and their respective College/School Advising Offices before electing courses to satisfy these General Education Requirements. It is the responsibility of the student to satisfy all University, College and program requirements.

The University-wide Program in General Education seeks to enhance facility in those basic skills which are fundamental to success in college while simultaneously providing the intellectual breadth necessary to place specialized and professional curricula in proper perspective. The primacy of basic skills is established by requiring all undergraduate students to demonstrate competence in written communication, mathematics, oral communication, computer literacy, and critical thinking. The significance of intellectual breadth is underscored by requiring all students to elect and successfully complete two courses (minimum of six credits) in the natural sciences, one course (minimum of three credits) in historical studies, two courses (minimum of six credits) in the social sciences, one course (minimum of three credits) in foreign culture, two courses (minimum of six credits) in the humanities, and one course (one credit) which provides an introduction to the University and its libraries. (Courses elected to satisfy these requirements must be made from approved lists: see below.) By means of this Program, undergraduate students will improve their basic skills and be introduced to methods of inquiry, modes of thought, bodies of knowledge, and representative ideas drawn from a wide range of academic disciplines.

Provided below is a full description of the University-wide Program in General Education. All undergraduate students must meet the specified requirements in accordance with the following Implementation Schedule, and should consult an academic adviser to assist in planning an appropriate program.

General Education Implementation Schedule: Effective Fall Term 1987, Wayne State University requires undergraduate students to fulfill the University-wide General Education Requirements. The Requirements will be implemented in accordance with the following schedule:

Fall Term 1987: The General Education Requirements apply to all entering freshmen and to students who transfer twelve or fewer credits.

Fall Term 1990: The General Education Requirements apply to the group of students cited above and to transfer students who began college work in Fall 1988 or thereafter.

Fall Term 1991: The General Education Requirements apply to all undergraduate students.

Transfer students who are not covered by the above schedule and who enter Wayne State University between Fall Term 1987 and

Spring/Summer Term 1991 must fulfill the University Proficiency Requirements in English and mathematics and the University Requirement in American Government outlined on page 24.

Students who have matriculated at Wayne State University prior to Fall Term 1987 must fulfill all University and School/College requirements in force at the time of entry. These include the University Requirement in American Government and the University Proficiency Requirements in English and Mathematics, outlines of which follow the Program description below.

## Competency Requirements

Competence in fundamental skills which underlie and make possible the acquisition of knowledge is required of all who would succeed in college and function as educated citizens. Without command of these skills (writing, mathematics, speaking, computing, and analysis), basic courses prove difficult and advanced work becomes an insurmountable obstacle. Since it is the skills which are preconditions for success in higher education, competence, not simply a record of successfully completed course work, is expected. Therefore, multiple methods are provided for demonstrating competence and satisfying these requirements: (1) satisfactory performance on placement, proficiency, screening, or competency examinations; OR (2) in some cases, satisfactory completion of specified high school courses; OR (3) satisfactory completion of designated University courses or their equivalents.

Competency requirements should be met early in a baccalaureate degree program. With the exception of the 'Writing-Intensive Major Course Requirement,' all should be satisfied by the time sixty credits of college work have been completed. Students who fail to meet this deadline will be allowed two additional semesters (or equivalent) in which to satisfy their remaining competency requirements. During these two semesters, they must be actively involved in taking appropriate courses or otherwise preparing themselves to demonstrate competence in these fundamental skills. After completing ninety credits, students who have not satisfied these requirements will be barred from enrolling in courses other than those which satisfy competency requirements until all such requirements have been completed.

The following general principles apply to all competency requirements:

1. Students who satisfy any competency requirement by passing a Wayne State University placement, qualifying, screening, competency or proficiency examination shall be excused from equivalent course work but shall receive NO course credit.
2. Course credit granted for satisfactory completion of an Advanced Placement, CLEP, or Departmental Examination will satisfy the appropriate competency or group requirement; credit so earned will be applicable to a baccalaureate degree.
3. Remedial courses (i.e., those numbered below 100) required because of failure to demonstrate competence will yield NO credit toward a degree.

General Education Course Prefixes: Parenthetical two-letter prefixes denote content areas of subjects and identify courses approved for satisfying competency requirements and group requirements in the University's General Education Program. The following prefixes, listed and defined in alphabetical order, precede course titles in the Courses of Instruction section of the Undergraduate Bulletin, and in each semester's Schedule of Classes.
AI - American Society and
Institutions
$\mathrm{BC}-$ Basic Composition
Competency
$\mathrm{CL}-$ Computer Literacy
Competency
$\mathrm{CT}-$ Critical Thinking
Competency
$\mathrm{EP}-$ English Proficiency
Requirement
FC - Foreign Culture
$\mathrm{GE}-$ General Education
$\mathrm{HS}-$ Historical Studies

$$
\begin{gathered}
\text { IC - Intermediate Composition } \\
\text { Competency }
\end{gathered}
$$

LS - Life Sciences
MC - Mathematics Competency
OC - Oral Communication Competency
PL - Philosophy and Letters
PS - Physical Sciences
SS - Social Sciences
VP — Visual and Performing Arts
WI - Writing Intensive
Competency

WRITTEN COMMUNICATION (BC, IC, EP, WI): Writing ability is fundamental to success in almost all human activity. It is a cornerstone of academic studies and is often considered the touchstone of a university education. Skill and effectiveness in writing serve the individual throughout life-in career, in community, and in social and avocational activities.

But the ability to write well must be developed so that specialized audiences within professional fields as well as general audiences can be addressed effectively. While writing proficiency may be honed and refined in composition courses, writing is a skill that serves many purposes, one that requires constant renewal. Consequently, the concept of 'writing across the curriculum' as a way of making the skill a habit is strongly recommended, and the requirement in Written Communication is structured not only to provide training in how to write well, but also to insure that writing skills continue to be exercised and enhanced throughout the undergraduate years. This requirement contains the following four components:

Basic Composition (BC): All students must demonstrate competence in basic composition by:
a) Earning an appropriate score on the University's English Placement Examination; OR
b) Earning credit for basic composition through Advanced Placement or CLEP tests; OR
c) Completing successfully an approved course in basic composition: ENG 102, 105; GIS 151; OR
d) Transferring credit received for successful completion of a comparable course taken at another college or university.

Intermediate Composition (IC): All students must successfully complete an approved intermediate or advanced course in which the teaching of English composition and rhetoric is a major component, or transfer credit received for successful completion of a comparable course taken at another college or university.

The purpose of this requirement is threefold: a) to emphasize the relationship between analytical reading and the acquisition of writing skills-especially the ability to organize and sustain extensive writing assignments; b) to acquaint students with works of imaginative, expository, argumentative, and/or analytical writing in the English language; and c) to develop an understanding of the nature and function of language. Courses currently approved for intermediate composition are: ENG 205, 210, 211, 212, 221, 231, 239, 257, 301, 303, 305; AGS 491/496; HUM 200.

English Proficiency Requirement (EP): After completing forty-five credits, and prior to completing sixty credits, all students must demonstrate competence in written composition by passing the English Proficiency Examination. (Students who fail this examination should prepare to repeat it by taking advantage of directed self study opportunities and/or tutorial assistance provided by the English Composition Clinic. Students who fail the English Proficiency Examination a second time must elect and satisfactorily complete ENG

## 108 , which may be repeated only once.)

Writing-Intensive Course in Major (WI): All students must demonstrate an ability to commmunicate effectively with specialized or professional audiences by completing successfully the writing requirements (courses which incorporate major writing assignments) specified by the departments or professional schools in which they are seeking degrees.

MATHEMATICS (MC): All educated individuals should possess a basic mastery of mathematical skills in order to cope with academic subjects in which mathematical formulations form an integral part of the subject matter, deal with mathematical manipulations which might be required in their careers, manage their personal finances, and understand mathematical elements relevant to public issues. Currently, the mathematics proficiency requirements may be satisfied by one of the following means. Prior to the completion of thirty credits, all students must demonstrate competence in mathematics by:
a) Completing successfully (with an overall grade of ' C ') a four-year program of high school mathematics which includes at least one year of algebra and one year of plane geometry; OR
b) Achieving an acceptable test score on the quantitative or mathematics section of one of the following tests: ACT, SAT, AP-CEEB, or CLEP; OR
c) Achieving an acceptable score on the Placement (Screening) Examination for MAT 150 or MAT 180; OR
d) Passing the Mathematics Proficiency Examination. (Students who fail this examination should prepare to repeat it by taking advantage of directed self study opportunities and/or tutorial assistance. Students who fail the Mathematics Proficiency Examination a second time must elect and satisfactorily complete MAT 091); OR
e) Transferring credit received for successful completion of an algebra or trigonometry course, taken at another college or university, equivalent to the level of achievement attained in MAT 150, MAT 180, or MAT 201.

ORAL COMMUNICATION (OC): Educated persons should be comfortable in situations which require them to make oral presentations, convince others of a point of view, or make appropriate remarks in an informal setting. Along with an inability to write cogently, difficulty in communicating orally is mentioned most frequently by employers and others who evaluate the preparedness of college students to compete in contemporary adult society. Consequently, oral communication is a crucial skill needed for success in virtually every field of endeavor. Prior to completing sixty credits, all students must demonstrate competence in oral communication by:
a) Completing successfully suitable high school courses, or their equivalent, in oral communication; OR
b) Passing the Oral Communication Competency Examination; OR
c) Completing successfully an approved course in oral communication: ENG 306, SPB 101, or GIS 156; OR
d) Transferring credit received for successful completion of a comparable course taken at another college or university.

COMPUTER LITERACY (CL): Since the application of computer technology to virtually all academic disciplines and their corresponding array of occupations is clearly a central fact of contemporary life, the need for students to become computer-literate is essential. In the modern world, it is vital that students possess some elementary knowledge of computer functions: they should be able to initiate a file and operate word-processing software, understand how to gain access to the University's main computer system, and command the basic skills needed to perform simple on-line data retrieval and manipulative operations. Prior to completing sixty credits, all students must
demonstrate computer literacy by:
a) Completing successfully a suitable high school course in computing; OR
b) Passing the Advanced Placement (AP) Examination in Computer Science; OR

## c) Passing the Computer Literacy Competency Examination; OR

d) Completing successfully an approved computer application course such as: ACC 263; CSC 100, 101, 206; NUR 111; GST 271; SOC 422; SPJ 321; OR
e) Transferring credit received for successful completion of a comparable course taken at another college or university.

CRITICAL THINKING (CT): The ability to reason critically is essential to the acquisition of knowledge in any discipline and may therefore appropriately be regarded as a fundamental skill, one to be acquired by students as early as possible in their education. Critical thinking includes: formulating and identifying deductively- and inductively-warranted conclusions from available evidence; recognizing the structure of arguments (premises, conclusions, and implicit assumptions); assessing the consistency, inconsistency, logical implications, and equivalence among statements; and recognizing explanatory relations among statements. All students must demonstrate competence in critical thinking prior to the completion of sixty credits by:

## a) Passing the Critical Thinking Competency Examination; OR

b) Completing successfully an approved course in critical thinking: PHI 105; SPC 211; or GIS 326; OR
c) Transferring credit received for successful completion of a comparable course taken at another college or university.

## Group Requirements

As knowledge proliferates and the interrelatedness of separate disciplines becomes increasingly evident, the traditional goal of mastering discrete or representative bodies of common, canonic material has become obsolete; even the aim of becoming familiar with all areas of knowledge has become an impossible objective. A commitment to intellectual diversity, though, must remain a central goal of any coherent undergraduate experience, and all college students must be exposed to a broad range of basic disciplines. Thus, courses specifically designed to insure that students are adequately exposed to representative branches of knowledge are fundamental to any set of general education requirements, and course work in areas outside specialized fields is required of all undergraduates at Wayne State University. These courses provide the conceptual framework within which major and professional curricula are placed in proper perspective and supply an appropriate foundation upon which continuing self-education can take place.

In addition to providing breadth of knowledge, however, the general education Group Requirements aim to foster awareness and appreciation of how scholars and scientists in various disciplines acquire knowledge - particularly, how recently-developed epistemological and methodological approaches are applied. Thus, the purpose of the Group Requirements is two-fold: to acquire a broad range of knowledge, and to develop methodological skills which encourage continued exploration on an independent level.

To satisfy the Group Requirements, students will be introduced to materials drawn from the natural sciences, the social sciences, historical studies, foreign culture, and the humanities. Courses which fulfill the Group Requirements carry a minimum of three credits and constitute broad introductions to individual academic disciplines. Such courses are designed for non-majors; however, some courses
designed specifically for majors, or for those with substantial prior preparation, may also be acceptable. The following principles apply to the general education Group Requirements:

1. Courses which satisfy the Group Requirements must be elected from lists of approved courses.
2. Students who place out of a course or courses which satisfy one or more of the Group Requirements will be considered to have fulfilled those portions of the Group Requirements represented by such courses.
3. For the purpose of satisfying these Group Requirements, students may elect no more than one course from a single subject area as defined by the University system of subject area codes.
4. Where specified, a Group Requirement may be satisfied by approved course sequences.

NATURAL SCIENCE (PS, LS): The evolution of science in the last four centuries has profoundly influenced the development of thought throughout the world. The natural sciences, both directly and through their applications in technology, present society with problems as well as opportunities. By transforming cultural values and beliefs, the sciences have altered behavior and created new pathways to the future. Thus, university graduates should understand the nature and applications of scientific knowledge, the processes by means of which it is generated and tested, and its limitations and capabilities. They should be familiar with phenomena of the natural world and comprehend how theoretical explanations are provisionally accepted by the scientific community.

To meet these objectives, all undergraduate students at Wayne State are required to complete successfully at least two courses (a minimum of three credits each) in the natural sciences: one course in the physical sciences and one course in the life sciences as defined below. A laboratory or interactive demonstration/simulation experience (a minimum of one credit) must be associated with one of these courses.

Physical Sciences (PS): Students must elect one course from the fields of astronomy, chemistry, geology, or physics, or combinations of no more than two of these areas. The following approved options are designed to explain physical laws and their effects on the natural world; emphasis is placed on mathematical predictability and the nature of scientific inquiry.

## PHYSICAL SCIENCE OPTIONS:

AST 201; CHM 100, 102, 105, 107, 131; GEL 101; PHY 101, 102, 104, 213, 217, and 310; GST 232.

Life Sciences (LS): Students must elect one course from the fields of biology, behavioral psychology, physical anthropology, or combinations of no more than two of these areas. The following approved options are designed to explain the mechanisms which govern the behavior and functioning of living organisms; emphasis is placed on factors which control these mechanisms and the nature of scientific inquiry.

## LIFE SCIENCE OPTIONS:

ANT 211; BIO 101, 103, 105, 161; NFS 203; PSY 101, and 102; GST 202.

HISTORICAL STUDIES (HS): Historical studies provide insight into the development of human institutions, their similarities and differences, and the means by which knowledge about the past is acquired. Such studies reveal how contemporary perspectives evolve from past events and enhance our understanding of the present.

To meet these objectives, all undergraduate students at Wayne State are required to complete successfully at least one course (a minimum of three credits) in historical studies. The following approved options do not offer a comprehensive overview of history; rather, they are designed to introduce significant historical periods or themes in which
comparative perspectives are emphasized and the purposes and methods of historical studies explained.

## HISTORICAL STUDIES OPTIONS:

ANT 320; HIS 110, 120, 130, 140, 160, 161, 195, 287, 304, 335, 350; HUM 310; N E 368, 369; P S 353; GIS 316.

SOCIAL SCIENCE (AI, SS): Studying the social sciences assures that students are introduced to several bodies of knowledge which shed light on contemporary social problems and are exposed to theories and methods appropriate to social science investigation (research). The findings of social scientists address such relevant issues as race relations, family structure, the organization of social institutions, politics, economic policy, and international relations. All courses which satisfy the requirements in social science must introduce the methodology of modern, empirical social science.

To meet these objectives, all undergraduate students at Wayne State are required to complete successfully at least two courses (a minimum of three credits each) in the social sciences: one course in American society and institutions, and one course in basic social science as defined below.

American Society and Institutions (AI): Students must elect one course in this area. The following approved options are designed to promote civic literacy by studying American society from the perspective of pluralism; emphasis is placed on the organization of political bodies and the manner in which they function.

## AMERICAN SOCIETY AND INSTITUTIONS OPTIONS

HIS 103, 105; P S 101, 103; GSS 151.
Social Science (SS): Students must elect one course in basic social science. The following approved options provide an overview of social structures and illustrate the role of human beings in different institutional arrangements; emphasis is placed on the approaches and methods of modern social science: the significance of theories, models, data collection, analysis, and inference.

## SOCIAL SCIENCE OPTIONS:

ANT 210; ECO 100, 101, 102, 180; GEG $110,313,320$; P S 100, 224; SOC 200, 202, 204, 330, 410; U S 200; GSS 271.

FOREIGN CULTURE (FC): A significant measure of a college education is the degree to which individual cultural assumptions can be placed in the context of a wider and more diversified world view. Such understanding leads to greater appreciation for the life style and artifacts of different peoples and a tolerance for opinions originating from disparate traditions by helping minimize narrow certainties and dispel provincial attitudes.

To meet these objectives, all undergraduate students at Wayne State are required to complete successfully at least one course (a minimum of three credits) in foreign culture elected from the following list of approved options:

## FOREIGN CULTURE OPTIONS:

ANT 315, 352, 354, 355; ARM 475; CBS 241, 242; FRE 271, 272; GER 271, 272; GRK 371; N E 200; NUR 480; P S 271; RUS 351; GIS 341, 343; or completion of any foreign language sequence through 201 or 211.

HUMANITIES (VP, PL): Meaningful exposure to the humanistic disciplines produces more well-rounded and humane citizens, individuals capable of broadening their view of human experience. It also provides an indispensable creative perspective on the teachings of other disciplines. The general education Group Requirements in the humanities afford students an opportunity to examine a range of humanistic statements and to consider some of the ways in which they are meaningful. Analyzing works drawn from across the humanities
(arts, philosophy, and letters), considering the varied contexts to which they belong and within which they are properly understood, and evaluating a range of interpretations, leads to an appreciation of how imagination and intellect, working in tandem, provide insight into the nature of human experience.

To meet these objectives, all undergraduate students at Wayne State are required to complete successfully at least two courses (a minimum of three credits each) in the humanities: one course in the visual and performing arts, and one course in philosophy and letters as defined below.

Visual and Performing Arts (VP): Students must complete one course in the appreciation or history of art, music, film, dance, theatre, or appropriate combinations of these media. The following approved options are designed to enhance understanding and pleasure; emphasis is placed on developing the fundamental skills of analysis, interpretation, and evaluation and applying them to primary materials in the visual and performing arts. (Studio and applied courses will not satisfy this requirement.)

## VISUAL AND PERFORMING ARTS OPTIONS:

A H 100, 101, 111, 112; DNC 231; FLM 201, 202; HUM 101, 102, 103, 303; MUH 130, 132, 133, 137, 138; THR 101, 103; GUH 273.

Philosophy and Letters (PL): Students must complete one course in philosophy, literature, linguistics, the history of rhetoric, or appropriate combinations of these subjects. The following approved options are designed to enhance understanding and pleasure; emphasis is placed on developing the fundamental skills of analysis, interpretation, and evaluation, and applying them to primary philosophical and literary materials.

## PHILOSOPHY AND LETTERS OPTIONS:

CLA 101, 210, 220; ENG 216, 217, 219, 220, 250, 272, 299, 311, 312, 314; FRE 270 (or: GER 270; ITA 270; RUS 270; or SPA 270); HUM 210, 211, 220, 222; PHI 101, 102, 103, 104, 210, 211, 232, 350, 355, 370; P S 351, 352; RUS 365, 465; SPC 216, 219; GUH 271.

THE UNIVERSITY AND ITS LIBRARIES: Newly-matriculated undergraduate students can profit from an introduction to the history and development of the modern university, the function of the university as a social institution, the roles of the faculty, the relationship between research and teaching, and the impact of different methods of inquiry on the growth and evolution of ideas. All students should be familiar with those service units of the University which may enhance educational development and career selection.

To meet these objectives, all newly-matriculated students at Wayne State are required to complete satisfactorily UGE 100 , The University and its Libraries, a one-credit course consisting of lectures and applied skills modules designed to introduce modern universities and their research libraries, especially those of Wayne State University. Students will become oriented to the information available in the Wayne State Library System and both the traditional and automated methods of accessing this material. The goal of this experience is to enrich the lives of students while at the University and afterwards, and to improve the ways in which the resources of the University are used. Students may place out of this requirement; otherwise, UGE 100 should be completed during the student's first semester at Wayne State. The requirement must be satisfied prior to completing thirty credits in residence.

## University Requirements <br> Prior to Fall Term 1987

The following requirements apply to all undergraduate students who matriculated at Wayne State University prior to Fall Term 1987 and to all entering undergraduate students not covered in the General Education Implementation Schedule on page 20:

## University Requirements in American Government:

All undergraduate students must satisfactorily complete a course in the principles of American government as a prerequisite to graduating from Wayne State. The courses and course sequences listed below and similar courses completed in other colleges and universities are applicable to this requirement. Credit for these courses may be applied toward fulfillment of a minor in the social sciences.
. History 103
2. History 204 and 205
3. History 516 and 517
4. Political Science 101
5. Political Science 103
6. Political Science 201 and 202
7. General Social Science (College of Lifelong Learning). Any six of the following courses: GSS 201, 202, 203, 231, 232, 233, 271, 272, 273.

## University Proficiency Requirements in English and Mathematics:

All undergraduate students who have registered for the first time at Wayne State University since Fall Semester 1983 are required to demonstrate proficiency in English and mathematics by the time they have earned sixty semester credits toward a bachelor's degree. The following proficiencies establish minimal standards throughout the University, and students who meet these standards have satisfied the University-wide requirements. Individual colleges or schools, as part of their own requirements, may set higher standards as a prerequisite for admission to a major or as a prerequisite for enrollment in certain classes.

Undergraduate students who have completed sixty credits of college-level work are expected to demonstrate the following proficiencies:

English Proficiency - Students will be expected to: (1) use English as an effective means of written communication; (2) write with facility at the level of writing demanded by courses throughout the University; (3) support statements with specific details or relevant evidence; (4) present a recognizable point of view or aim; (5) adapt tone and style to the needs of the audience and to the demands of the occasion; (6) vary sentence structure, length, and style; (7) employ vocabulary appropriate to the subject matter; (8) exercise command over standard written English, especially in spelling, punctuation, inflections, mechanics, and diction.

English proficiency can be established in the following ways:

1. Pass the English Proficiency Examination.
2. Pass English 108 (restricted to those who have failed the English Proficiency Examination).

Mathematics Proficiency -Students will be expected to: (1) perform, with reasonable accuracy, addition, subtraction, multiplication, and division, using fractions, decimals, and integers; (2) use ratios, percentages, proportions, roots, and powers; (3) apply the concepts of introductory algebra and informal geometry; (4) make estimates and approximations and judge the reasonableness of the results; (5) formulate and solve a problem in mathematical terms; (6) read and
interpret graphs, charts, and tables; (7) apply elementary concepts of probability and statistics; (8) deal with different units of measurement.

Mathematics proficiency can be established in the following ways:

1. Completing successfully (with an overall grade of ' $C$ ') a four-year program of high school mathematics which includes at least one year of algebra and one year of plane geometry; OR
2. Achieving an acceptable test score on the quantitative or mathematics section of one of the following tests: ACT, SAT, AP-CEEB, or CLEP; OR
3. Achieving an acceptable score on the Placement (Screening) Examination for MAT 150 or MAT 180; OR
4. Passing the Mathematics Proficiency Examination. (Students who fail this examination should prepare to repeat it by taking advantage of directed self study opportunities and/or tutorial assistance. Students who fail the Mathematics Proficiency Examination for a second time must elect and satisfactorily complete MAT 091); OR
5. Transferring credit received for successful completion of an algebra or trigonometry course, taken at another college or university, equivalent to the level of achievement attained in MAT 150, MAT 180, or MAT 201.

Students who do not establish proficiency by the time they earn sixty credits toward a bachelor's degree will have up to two semesters (or equivalent), without penalty, in which to meet the requirements. During that period they must pass the English Proficiency Examination and/or the Mathematics Proficiency Examination; or, if they fail these, pass English 108 and/or Mathematics 091 .

The University expects all undergraduate students to meet the English and mathematics proficiency requirements. There shall be strict enforcement of the requirements, and only in extraordinary circumstances will the requirements be waived.

Examinations: The English Proficiency Examination, the Mathematics Proficiency Examination, and the Mathematics Qualifying Examinations are administered by the Testing and Evaluation Office, University Counseling Services, at regularly scheduled intervals. Students should contact the Testing and Evaluation Office, University Counseling Services, for information on examination dates, times, and fees.

Enrollment prior to Fall 1983: For students who first registered at Wayne State University prior to Fall Semester 1983, the following College requirements apply in regard to English proficiency:

Students in the Colleges of Liberal Arts, Nursing, and Pharmacy and Allied Health Professions who have accumulated forty credits, and students in the School of Business Administration, must take the English Proficiency Examination. Students in the College of Engineering must take the examination at least two semesters before they plan to register for ENG 305. Students should contact the Testing and Evaluation Office, University Counseling Services, for information on examination dates, times, and fees.


## Table Showing the Various Ways Competencies Requirements May Be fulfilled (other than through WSU or equivalent transfer courses)

In general, any of the competencies requirements may be fulfilled by obtaining appropsiate course credit through Wayne State University Credit by Special Examination procedures (described elsewhere in this bulletin). Advanced Placement (AP) and College-Level Examination Program (CLEP) scores shown in these columns will fulfill the General Education Competencies Requirements, but will not necessarily qualify the student to receive college credit. For information about college credit earned through the AP or CLEP exams, refer to the full descriptions of these programs in this bulletin.


| B. Mathematics Proficiency | Four Years | Quant. | 2, 3, | Gent. Math: 487 | Pass Math. | Exam to be |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | High School | Scores | 4, or 5 | Algebra/Trig: 50 | Qualifying | passed before |
|  | math with | SAT: 450 |  |  | Exam at | completion of |
|  | overall ' C ' | ACT: 16 |  | Algebra: 50 and Trig: 50 | level of | 30 hours unless |
|  | grade |  |  |  | MAT 150 or | requirement |
|  | including |  |  | Coll. alg: 50 | MAT 180 or | previously |
|  | one year of |  |  | Coll. trig: 50 | higher | fulfilled by |
|  | algebra and |  |  | Calculus with |  | other means |
|  | one year of |  |  | Elementary |  |  |
|  | plane geometry |  |  | Functions: 50 |  |  |



| E. Critical or Analytic Thinking | N.A. | N.A. | N.A. | N.A. | N.A. | Exam to be passed before completion of 75 hours unless requirement previously fulfilled by other means |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |

## Table Showing How General Education Group Requirements May Be Met through Advanced Placement or College,Level Examination Program Examinations

In general, students will fulfill Group Requirements by successfully completing specially-designated Wayne State University courses or by transferring credit for equivalent courses taken at other collegiate institutions. However, Group Requirements may also be fulfilled by obtaining course credit for these courses through regular WSU Credit by Special Examination procedures or by obtaining course credit through Advanced Placement (AP) or College-Level Examination Program (CLEP) examinations as specified below. See elsewhere in this bulletin for complete descriptions of these three examination programs. (Note also that course credit may be granted for AP and CLEP exams other than those indicated below, but such credit will not fulfill General Education Group Requirements.) The CLEP General Examinations, when passed with the indicated scores, grant the student credit for two courses, as follows:

Credit granted for Natural Science General Examination is 4 semester credits of ohysical science and 4 semester credits of biological science. Credit granted for Social Science and History General Examination is 4 semester credits of social science and 4 semester credits of history. Credit granted for Humanities General Examination is 3 semester credits of fine arts and 3 semester credits of literature.

| Group Requirement | Advanced Placement Program |  |  | College-Level Examination Program |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | AP | AP | Credits | CLEP Test | CLEP | Credits |
|  | Test | Score | Awarded | $S=$ Subject Exam <br> $G=$ General Exam | Score | Awarded |
| Natural Science: |  |  |  |  |  |  |
| Physical Science | Chemistry | 3,4 , or 5 | 4.8 | General Chemistry (S) | 50 | 4 |
|  | Physics (Basic) | 3, 4, or 5 | 4.8 | Natural Science (G) | 489 | 4 |
|  | Physics (E \& M) | 4 or 5 | 4.8 | (or Phys. Sci. subscore) | (49) | 4 |
|  | Physics (Mechanics) | 4 or 5 | 4.8 |  |  |  |
| Life Science | Biological Science | 3,4 or 5 | 4.8 | General Biology ( S ) | 50 | 3 |
|  |  |  |  | General Psychology (S) | 50 | 3 |
|  |  |  |  | Natural Science (G) | 489 or | 4 |
|  |  |  |  | (or Biol. Sci. subscore) | (50) | 4 |
| Historical Studies | European History* | 3,4 or 5 | 3-7 | Western Civ. 1 (S) | 50 | 3 |
|  |  |  |  | Western Civ. 11 (S) | 50 | 3 |
|  |  |  |  | Social Sci.\& History (G) | 488 | 4 |
|  |  |  |  | (or History subscore) | (50) | 4 |
| American Institutions | American History* | 3, 4, or 5 | 3-7 | American Hist.I(S) | 50 | 3 |
|  |  |  |  | American Hist.ll (S) | 50 | 3 |
|  | American |  |  |  |  |  |
|  | Government* | 3, 4, or 5 | 3-4 | American Govt.(S) | 50 | 3 |
| Basic Social Science |  |  |  | Intro. Sociology (S) | 50 | 3 |
|  | Macroeconomics | 3, 4, or 5 | 3.4 | Intro. Macroeconomics (S) | 50 | 3 |
|  | Microeconomics | 3, 4, or 5 | 3.4 | Intro. Microeconomics (\$) | 50 | 3 |
|  |  |  |  | Social Sci. \& History (G) | 488 | 4 |
|  |  |  |  | (or Soc. Sci. Subscore) | (50) | 4 |
| Foreign Culture | French Language | 3, 4, or 5 | 4.8 |  |  |  |
|  | German Language | 3,4 , or 5 | 4.7 |  |  |  |
|  | Spanish Language | 3,4 or 5 | 4.8 |  |  |  |
|  | Comparative |  |  |  |  |  |
|  | Politics* | 3,4, or 5 | 3 |  |  |  |
| Humanities |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Visual and | Art History | 3,4, or 5 | 3 | Humanities (G) | 489 | 3 |
| Performing Arts | Music History | 3,4 or 5 | 2-3 | (or Fine Arts subscore). | (50) | 3 |
| Philosophy | French Literature | 3. 4 , or 5 | 4-8 | American Literature (\$) | 50 | 3 |
| and Letters | German Literature | $3,4, \text { or } 5$ | 4.7 | Analysis and |  |  |
|  | Spanish Literature | 3,4 or 5 | 4-8 | Interpretation of |  |  |
|  |  |  |  | Literature (S) | 50 | 3 |
|  |  |  |  | English Literature ( S ) | 50 | 3 |
|  |  |  |  | Humanities (G) | 489 | 3 |
|  |  |  |  | (or Literature Subscore) | (49) | 3 |

[^1]
## UNDERGRADUATE HONORS CURRICULA

The University's honors curricula serve to challenge highly motivated students through courses of advanced study; to provide academic programs of unusual breadth and depth; to provide recognition of outstanding scholastic achievement; to foster interest in research and scholarly activity; and to provide students an opportunity to work with outstanding faculty.

Two types of curricula are available in the University Honors Program: a University-wide Honors Curriculum; and a College or Department Honors Curriculum.

Dual Recognition: Students who complete the requirements of both the University-wide Honors Program and a college/department Honors Program shall have both designations on the transcript and the diploma. Only a single senior essay shall be required of such students. For information in addition to the summaries provided below, students should contact the Director of Honors Programs, who is responsible for overall administration of the University's honors curriculum, or their program adviser regarding college or departmental programs.

## University-wide Honors Curriculum

The University-wide Honors Program allows undergraduate students in any college or school to pursue individually-designed Honors Programs which complement their majors.

Admission: Students with excellent academic records are eligible and may apply for admission to the University's Honors Program. In considering nominees/applicants for the program, considerable emphasis is placed on the character of the student's prior accomplishments, and on measures of potential appropriate to the individual and his/her field. Normally, the following admission standards prevail:

Entering Freshmen: Any entering freshmen with a high school honor point average of 3.5 , or a composite ACT score of 26 or SAT combined score of 1100 , is eligible to apply for admission to the Honors Program.
Matriculated students who have completed a minimum of fifteen credits of college work with a cumulative honor point average of 3.3 are eligible to apply for admission to the program. Normally, no student shall be admitted to the University Honors Curriculum who has fewer than forty-five credits remaining in undergraduate study at Wayne State University.

Merit Scholars: Students awarded merit scholarships are eligible for admission to the University Honors Program upon entrance to Wayne State University.

Students whose cumulative honor point average is at least 3.0 , but who are not formally in the Honors Program, are eligible to elect honors courses to enrich their educational experience.

Program Requirements: The program requires a minimum of thirty credits in honors-designated course work of which at least three credits must be in an independent research project, essay, or thesis. Students in this program must satisfy the General Education Requirements, but the approved General Education courses may differ for the honors program. The Honors Adviser shall develop with the student an individualized program of study appropriate to the student. The program of study must be approved by the student's home college and by the University Honors Council.
Retention: The academic record of each student shall be reviewed at regular intervals. To remain in the University Honors Program, a student will normally be expected:
a) to pursue a program consistent with the objectives of the Honors Program, as judged by the University Honors Council;
b) to maintain a cumulative honor point average greater than or equal to 3.0 .

A student whose cumulative honor point average is below 3.0 and is, for that reason, dropped from the honors program, may reapply for Honors admission when his/her cumulative h.p.a. is 3.0 or higher.
Graduation: For graduation, students must have a minimum cumulative honor point average of 3.3 and must complete a minimum of thirty credits in honors-designated course work (including at least three credits in an independent research project, essay or thesis), with a minimum cumulative honor point average of 3.0. Graduates of the University-wide honors program will be so recognized on the transcript and diploma.

## College or Department Honors Curricula

Undergraduate programs in colleges and schools may also have curricula leading to graduation with honors. College or Department Honors Programs are included in college and department sections of this Bulletin.

Admission: Students must be admitted to the major or program for which honors recognition is sought. A minimum honor point average of 3.3 is required for enrollment in college/department programs; however, colleges/departments may establish a higher honor point average for admission.

Program Requirements: College or department Honors Curricula require at least fifteen credits in honors-designated course work, of which at least three credits must be in an independent research project, essay, or thesis in the student's college/department. Students must also meet the requirements of their major fields. The honors requirements for the major may include approved modifications of normal major requirements.

Retention: To remain in a college or departmental Honors Program, a student normally shall be expected to maintain a cumulative honor point average greater than or equal to 3.0 ; however, colleges/departments may establish a higher h.p.a. for retention in their programs.

Graduation: For graduation, students must have a minimum honor point average of 3.3; but college or departmental Honors Programs may establish a higher h.p.a. Normally, the honor point average of honors graduates should be among the top twenty-five per cent of the seniors in a particular college. Graduates of college/department Honors Programs will be so recognized on the transcript and diploma.

## Academic Advising

University Advising Center

3 West, Helen Newberry Joy Student Services Center; 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 curriculum. 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 improve 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.

## Academic Procedures

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.

## Normal Program Load

A full-time undergraduate student is one who is enrolled for twelve or more credits during a semester. The definition of what constitutes a normal course load will vary depending upon the requirement of each program. In general, for completion of undergraduate degree requirements in four years, full-time students should average fifteen to sixteen credits each semester during the academic year.

## 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 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. A Dual Enrollment Course Designation form must be submitted at the time of registration.

## Dual Registrations

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 3.0 upper division honor point average 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. A Senior Rule Course Designation form must be submitted at the time of registration. For further information, see Senior Rule Admission, pages 30, 37.

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 registrations should obtain the necessary forms from the Registrar and pay the appropriate tuition at their home institution.

## Repeating Courses

If an undergraduate student repeats a course and completes it with a grade of $\mathrm{A}, \mathrm{B}, \mathrm{C}, \mathrm{D}$, or E , the following rules will apply in posting the student's cumulative record:

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

After registering to repeat a course, a Repeat Form must be filed in the Records Office, 1 West, Helen Newberry Joy Student Services Center.

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

If a student in post-bachelor status repeats a course originally taken in post-bachelor status, then rules 1,2 and 3 , cited above, shall apply. 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 $\mathbf{A}, \mathbf{B}$, or $\mathbf{C}$.

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 <br> and Changes of Program

Registering and Adding: 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.

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

A $\$ 10.00$ Add Processing Fee is assessed any student who files a Drop/Add 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. 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 complete and sign a Drop/Add Form and deliver it to the Registration Office, or write a (certified) 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 on or before the last day of the fourth week of classes, that course will not appear on his/her record. 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. 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.

If a student wishes to withdraw from a class after the end of the fourth week and through the twelfth week, he/she must obtain 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 honored. A student who wishes to withdraw from a course or courses after 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 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 33) and Fees (page 16) for additional information.

## Credit by Special Examination

Upon the recommendation of the department chairperson and with the written approval of the appropriate college or school office, a student may earn credit in a course in which he/she has not been regularly enrolled in this University, but which is offered by a department, by passing a special examination. Credit by a special examination is restricted as follows:

1. Not more than sixteen credits may be earned in any one subject.
2. Not more than thirty-two credits may be included in the minimum credits required for graduation.
3. Credit will be recorded with grade to indicate the level of performance in the examination but will not be considered in computing honor point average.
4. Credit will not be considered residence credit.
5. To be eligible to earn Credit by Special Examination, a student must have been regularly admitted or have attended with guest status, have enrolled for one semester and have completed at least one course.

Students who intend to transfer to other schools are cautioned that Credit by Special Examination at one institution is infrequently accepted for transfer credit by another institution.

For Special Examination fee, see page 16.
College of Liberal Arts: Students may satisfy all or part of one or more group requirements by examination subject to the provisions above.

## Undergraduate Academic Probation

Effective Fall Term 1988, an undergraduate student whose cumulative honor point average (h.p.a.) falls below 2.00 will be placed on 'Academic Probation.' An 'Academic Probation' hold shall be placed on the student's record and the student shall be permitted to register only after consultation with, and approval has been granted by, a designated University adviser.

The statement 'Academic Probation' shall be printed on the grade report and the student record the first term in which the cumulative h.p.a. falls below 2.00. Thereafter, the statement 'Probation Continued' shall appear on the grade report and record until the student attains 'Regular Status.' A student shall be given two subsequent terms for enrollment on probationary status. At the conclusion of the two terms, a student who has not achieved a cumulative h.p.a. of at least 2.00 shall be excluded from the University. A student excluded from the University may not apply for readmission for one calendar year.

Each School and College may establish more stringent Probation, Exclusion, and Appeal policies, and students should consult the appropriate Dean's Office. The Probation Committee of the University Advising Center is responsible for monitoring the University Probation and Exclusion Guidelines for Students in the College of Liberal Arts, the School of Fine and Performing Arts, and the College of Urban, Labor, and Metropolitan Affairs.

## Obligations of Faculty and Students to the Instructional Process

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

## Responsibilities of Faculty Members

1. To contribute to and remain abreast of the latest developments in their fields;
2. To continually pursue teaching excellence;
3. To treat all students with respect and fairness without regard to ancestry, race, religion, political belief, country of origin, sex, sexual preference, age, marital status, or handicap;
4. To encourage differing viewpoints and demonstrate integrity in evaluating their merit;
5. To attend regularly and punctually, adhere to the scheduled class and final examination times, and arrange for notification of absence and coverage of classes;
6. To establish and maintain appropriate office hours;
7. To present, early in the semester, the following course information:
(a) course objectives and general outline;
(b) classroom procedures to be followed, expectations concerning class attendance, and proposed dates of major evaluations (including examinations, papers, and other projects);
(c) grading policy;
(d) where appropriate, a schedule of class-related activities, including class meetings and laboratory sessions;
(e) lists of texts and/or other materials needed for the course;
(f) late enrollment, withdrawal, and other special policies.
8. To provide and adhere, within reasonable limits, to the written syllabus of the course;
9. To know course matter thoroughly and prepare and present the material conscientiously;
10. To be informed of University services and recommend their use to students when advisable;
11. To follow these policies concerning written work and grades:
(a) grade and return written work promptly;
(b) submit final grades by the scheduled time;
(c) retain written materials not returned within the semester (e.g., final examinations, major term papers) for one academic semester in accordance with unit policy and allow students to examine such materials;
12. To implement unit procedures for student evaluation of faculty teaching, with attention to preserving student anonymity;
13. To behave appropriately in dealing with students so as to maintain a scholarly atmosphere.

## Responsibilities of Students

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

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

## Deception, Fraud and Misuse of Documents

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

## Student Rights and Responsibilities

Upon the recommendation of the Student-Faculty Council, the University (Faculty) Council, the President-Deans Conference and the President, the Board of Governors, in January, 1967, approved a comprehensive statement of Student Rights and Responsibilities for the University. In addition, the Board of Governors adopted a Student Due Process Policy. This latter document provides uniform procedures for all schools and colleges. Copies of these documents are available to students and faculty in the offices of the deans of each college and the Office of the Vice President for Student Affairs.

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

## 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 Nepotism

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


## 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:

## Undergraduate Grades

A Excellent
4 honor points per credit hour
B Good.................................. 3 honor points per credit hour
C Fair $\ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots . .2$ honor points per credit hour
D Poor but passing' ${ }^{\prime}$...................... 1 honor point per credit hour

E 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).

P and N Passed or Not Passed. These grades do not affect honor points but courses completed with grade of $\mathbf{P}$ may count toward a degree.

S and U Satisfactory and Unsatisfactory performance in non-degree courses and in certain designated courses such as field work, practicums and internships. $S$ and $U$ grades are not used in the calculation of the honor point average.

## Marks

I Incomplete ......See below for explanation of this mark.
R Repeated ........ See page 30 for explanation of this mark. (this mark applies to undergraduate students only)

W Official Withdrawal ...... See below for explanation of this mark.

X Nograde
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 $E$ 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 $\mathbf{W}$-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 above, page 30 .

The Mark of $\mathbf{X}$-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 $\mathbf{Y}$-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 $\mathbf{Z}$-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.

## Passed - Not Passed Program

The University has a program whereby undergraduate students may elect to take courses in which they will be marked as Passed ( P ) or Not passed ( N ) in place of a letter grade. Except as noted below, the following regulations apply:

1. The student may elect one P-N course per semester with the consent of an adviser, but he/she may not elect more than six courses in all.
2. After classes have begun, a student may not change from this program to a letter grade election or vice versa.
3. Courses taken for P-N may be used to satisfy competency requirements; however, no course taken on this basis may be used to fulfill specific group or major requirements.
4. Credits for a P-N course may be used to fulfill graduation requirements but will not count in the honor point average. In the event the student enrolls in more than six P-N courses, those beyond the permissible maximum will be designated on the permanent record as not applicable toward graduation.

School of Business Administration: Undergraduate students in the School of Business Administration may not take courses offered by the School of Business Administration on a passed - not passed basis.

## 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.

[^2]
## 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 33) for each hour of credit. For example, a grade of ' $A$ ' in a class carrying 3 credits would be assigned 12 honor points ( $3 \times 4$ ), and a grade of ' $C$ ' in a class carrying 4 credits would be assigned 8 honor points $(4 \times 2)$.

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 'I,' 'W' or 'X,' and courses in which a grade of ' S ,' ' U, ' ' M ,' ' P ,' or ' N ' has been recorded.

At the undergraduate level, courses repeated are computed in the honor point average according to the procedure given on page 30 on 'Repeating 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.

## Michigan's Freedom of Information Act

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

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

## Graduation with Distinction

Wayne State University bestows upon students completing the baccalaureate degree three separate designations for scholastic excellence reflected in the cumulative honor point average: Cum Laude, Magna Cum Laude, and Summa Cum Laude. Graduation with distinction will be indicated on the student's diploma and on the transcript.

Graduation with Distinction will recognize at each graduation the top twenty per cent of students in each college who have earned the highest honor point average in their colleges, with the following approximate distribution:

| Summa Cum Laude. | Top five per cent |
| :---: | :---: |
| Magna Cum Laude . | Next five per cent |
| Cum Laude | Next ten per cent |

The specific minimum honor point average will be determined each year in the following manner, except that it shall not be less than 3.0:

Based on the honor point average distributions of the previous year's senior class, the honor point average cut-offs for each college will be established to provide for recognition of the top eighteen to twenty per cent of the graduating students.

The criteria for Graduation with Distinction include:

1. A minimum of sixty credits in residence at Wayne State University.
2. A qualifying minimum honor point average (calculated as explained above) on all work at Wayne State University must be completed by the end of the semester of graduation. (For notation in the commencement program, the honor point average on all work completed prior to the semester of graduation will be used.)

## Application for Degree or Certificate

Each candidate for a degree or certificate must file an Application for Degree in the Records Office, 1 West, Helen Newberry Joy Student Services Center, not later than the first day of classes for the semester in which the student expects to complete the requirements for the degree or certificate; consult the Academic Calendar on page 4 of this bulletin. If an application for a degree was filed for a previous commencement period in which the student did not graduate, a new application is required. Applications for graduation must be accompanied by a $\$ 15.00$ (one time only) graduation fee.

## 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.


## GRADUATE SCHOOL

Following are the rules and regulations governing admission to the Wayne State University Graduate School. For information on all degrees and programs, consult the Wayne State University Graduate School Bulletin.

## 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 (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.

## 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 does not 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

[^3]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 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 $\$ 12,000$ 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.

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

## University Centers and Institutes

The following University Centers have programs pertaining to undergraduate study. For a complete list of Centers and Institutes, see the Wayne State University Graduate School Bulletin.

## Center for Black Studies

## 586 Student Center

The Center's mission is to teach, research and develop the body of knowledge, mainly in the humanities and social sciences, that pertains to black people in the United States and abroad, thus offsetting the historical omissions of such knowledge in the curricula of public schools, colleges and universities in the United States. Toward this end, the Center combines teaching, research, and services to students and the off-campus community. It of fers an academically substantial, culturally and socially relevant co-major curriculum at the undergraduate level.

The Center also provides general educational services to the broader community through the development and support of public forums, special events and other community-oriented service programs that are consonant with its primary on-campus mission. In this way the Center extends the range of the University's overall efforts to interact productively with the urban community it is committed to serving.

Information concerning the Black Studies co-major, including course offerings, may be found on page 224.

## Center for Chicano-Boricua Studies

6001 Cass Avenue; Room 311, Criminal Justice Building Interim Director: Jorge Tapia-Videla

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.

## 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 magabytes of main memory; one IBM4381 with sixteen megabytes of main memory; and one Amdahl $470 \mathrm{~V} / 8$ 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 1BM 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

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

Eastside Center
3127 East Canfield
Detroit, Michigan 577-4701

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

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

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

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

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 $8-1 / 2 \times 11$ 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 $9 \mathrm{a} . \mathrm{m}$. to $5 \mathrm{p} . \mathrm{m}$. weekdays and also operates a network control center twenty-four hours per day, seven days per week. Various publications describe the use of $\operatorname{CSC}$ 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.

## 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.

## 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 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.


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 Undergraduate Admissions

## 3 East, Helen Newberry Joy Student Services Center; 577-3577

The Office of Undergraduate Admissions has the primary function of recruiting, admitting, and enrolling new students to the University. The Office also helps to coordinate the recruitment activities of individual departments, alumni groups, and students; and it organizes visits to local high schools and community colleges. Services offered to students include walk-in advising for students interested in Wayne State.

## Office of the Registrar

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

The Office of the Registrar supports the instructional mission of the University and, to a lesser extent, the mission of research and professional service. The 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 grades and certifications. The Registration Office is responsible for determining residency status for purposes of computing tuition, processing student 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.

## Office of Scholarships and Financial Aid

## 2 East, Helen Newberry Joy Student Services Center; 577-3378

The Office of Scholarships and Financial Aid helps students and parents meet the major educational expenses of tuition, fees, books, supplies, room, board and transportation. As steward for private, University, state and federal student funds, the Office is held to strict rules of accountability in the interpretation of University and outside guidelines for awarding loans, grants, scholarships and employment.

Applicants for aid should file their applications by April 1 for the following fall term. For additional information, see page 19; and telephone: 577-3378.

## University Advising Center

2 West, Helen Newberry Joy Student Services Center; 577-2680.
The University Advising Center's staff members advise all students with undeclared majors and some pre-professional students. Using professional and peer advisers, the Center helps students identify their curricula, select courses and resolve probationary issues. In addition, the Center maintains a Study Abroad Resource Center, operates the orientation program, and publishes the student handbook. For further information, see page 29.

## University Counseling Services

## 334 Mackenzie Hall; 577-3398

University Counseling Services has two major purposes: (1) to help students promote individual development in ways which will maximize benefits from their University experience, and (2) to help them find ways of coping with problems which interfere with their educational attainment. To implement these goals, non-credit courses in the areas of college and career orientation, reading efficiency, and study skills, are offered through this office. These courses (including Reading Efficiency courses) and the staff of University Counseling Services may be found on page 422.

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 a wide range of problems which students confront in the University.

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 facilitate the full participation
of students throughout the campus. Resources include pre-admission counseling, orientation to the campus, information about campus accessibility, consultation regarding management of academic coursework, individual administration of examinations, reading and recording services, interpreters, notetakers, study rooms, parking, referrals and advocacy, and information for faculty and staff. Students are invited to contact the Office regarding questions related to their individual situations.

Learning Center, 456 Mackenzie Hall, 577-2006: 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 page 422) and individualized laboratory experiences or through programs coordinated with academic departments or special University programs.

Life/Career Counseling Service, 334 Mackenzie Hall, 577-3398: This service provides students with special opportunities for consultation about needs or concerns for which individualized help is desired. Any facet of experience which affects a student's educational progress may be explored with the professional counseling staff. Counseling may help students to clarify for themselves their own identity and relationship with the social, educational and occupational world, to explore opportunities for development, to set and realize goals and to resolve motivational and other personal conflicts. In addition to confidential private consultation, a number of psychological education group workshops on common issues are offered; and services are available for emergency situations.

Life/Career Development Laboratory, 340 Mackenzie Hall, 577-3398: The Laboratory is a 'walk-in' service which offers student consultation, self-help inventories, occupational information and interactive computer software programs for career assessment and decision making so that they can more realistically determine and accomplish their career and educational directions.

Minority Programs, 428 Mackenzie Hall, 577-2006: Minority Programs and the Minority Resource Center provide individualized personal counseling and advising, role modeling, networking with other offices and departments of the University as well as with the community, workshops, seminars, discussions, newsletters, intercultural exchange, graduate and professional school information, and conferences. Activities are oriented to the needs and concerns of various minority populations, including ethnic minorities and alternative life style minorities. Participation is open to everyone.

Peer Assistance in Learning Support (PALS) Program, 410 Mackenzie Hall, 577-1897, 577-3398: The goal of this program is to increase academic success and persistence of academically underprepared and economically disadvantaged students. To meet this goal the PALS Program provides intensive counseling, academic advising, tutoring, individual assessments and prescriptions for college survival, career planning and development, mentoring by peers and professional staff, and extensive outreach activities.

Re-Entry to Education Program, 423 Mackenzie Hall, 577-4103 or 577-0340: 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 teacher-made tests 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 Programs, 423 Mackenzie Hall, 577-4103 or 577-0340: 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

## 3 West, Helen Newberry Joy Student Services Center; 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 Buillding 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

## 3 West, Helen Newberry Joy Student Services Center; 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 $\$ 76.00 \mathrm{a}$ 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 provides 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. Preprofesional 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) 

1 East, Helen Newberry Joy Student Services Center; 577-5050

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. In addition to the TRIO programs, this department administers the Martin Luther King, Jr.-Cesar Chavez-Rosa Parks College Day Program.

The TRIO programs funded at Wayne State University are:
The Educational Opportunity Center (EOC), I East, Helen Newberry Joy Student Services Center, 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), 1 East, Helen Newberry Joy Student Services Center, 577-5050, 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.

Student Support Services (Project 350), 1 East, Helen Newberry Joy Student Services Center, 577-5050, 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, acadernic and career guidance, personal counseling, and residential life to high school students in the tenth grade who are potential first-generation college students and who attend designated Detroit high schools.

Veterans Educational Opportunity Program (VEOP), 3127 East Canfield, 577-4690, provides a program of instruction, academic and career guidance, personal counseling, and post-secondary placement to veterans who have served in the Armed Forces since December 31, 1955.

The Martin Luther King, Jr.-Cesar Chavez-Rosa Parks College Day Program, 494 Mackenzie Hall (telephone: 577-3085), provides educational and motivational experiences designed to encourage Detroit Public Schools students enrolled in grades seven through eleven to complete high school and pursue a program of postsecondary education.

## Student Center and Program Activities

Director: 341 Student Center; 577-3482<br>Assistant Directors: 351 Student Center; 577-3444

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

## 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. The recreation annex, also located on the lower level, houses the Leisure Learning School's classes.

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 seventh floor of the building. Programs, personal counseling as well as spiritual counseling are available from the various University chaplains.

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

## Program Activities

Student Organizations: There are approximately 200 active student organizations including such diverse categories as academic/professional, social action, political, sororities/fraternities, honoraries, ethnic and religious groups, as well as student governments. The South End, the official student newspaper, is published daily during the academic year. The student-run radio station, WAYN, broadcasts campus-wide during fall and winter semesters. Student activities advisers are available to assist students who want to organize new student groups. The staff coordinates various campus events such as the International Fair, Student Organizations Day, Commencement Corps, Holiday Bazaar, and
leadership training.
Student Resource and Assistance Center: The Center, located in 135 Student Center, provides information and programs that will enhance students' experience on campus. Staffed by students, the Center is open from 9:00 a.m. to 6:30 p.m., Monday through Thursday, and from 9:00 a.m. to $3: 30 \mathrm{p} . \mathrm{m}$. on Friday during the fall and winter semesters. Summer hours are Monday through Thursday, 9:00 a.m. to 5:00 p.m.; Friday, 9:00 a.m. to 3:30 p.m. Information available in the Center includes: University academic programs and services; off-campus housing information; campus activities; Share-a-Ride Board; travel information; campus weekly and monthly calendars; job postings; SEMTA and DOT bus schedules; Ride-Share Carpool program; community activities; tutor and typist lists. The Center also sponsors informational and entertainment programs such as Hallo-Wayne, The Dating Game, Winter Carnival, Health Day, Spring Travel Fair, and Study Abroad Open House.

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; 745-4774

Students are encouraged to use the Health Service at any time for health care needs including illness, physical examinations, and family planning. Counseling services are also available. X-rays and laboratory tests can be performed in the University Health Center. There are charges to students for these services.

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

Medical visits to the Health Service are by appointment, which can be made by telephoning 745-4774. Transportation from the main campus is via the Three Center Mini Bus.

## Athletics, Intramurals and Recreation

101 Matthaei; 577-4280
Athletics: The Department of Athletics, Intramurals and Recreation offers students a full range of sports as athletes and spectators. Baseball, basketball, cross country, fencing, football, golf, swimming and diving, and tennis are offered for male students. Basketball, fencing, softball, tennis and volleyball are offered for female students. Intercollegiate athletics are housed in the Frederick C. Matthaei Physical Education Center. Tickets at student rates and information on intercollegiate athletics are available at 101 Matthaei Building; 577-4280.

Intramural Sports: Wayne State students can participate in a wide range of intramural sports. Among the sports offered are badminton, basketball, touch football, floor hockey, racquetball, tennis, volleyball and wallyball. Intramural sports are housed in the Frederick C.

Matthaei Physical Education Center. Information on the intramural sports program is available at 154-3 Matthaei Building; 577-4261.

Recreation: The facilities and services of the Frederick C. Matthaei Physical Education Center are available to students, faculty and staff for 'drop-in' recreation whenever 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 touch football, soccer and softball. Identification is required for using indoor facilities; one guest may accompany a student, faculty or staff member after 5:00 p.m. Monday through Friday and any time during open hours on weekends. A guest fee is charged as posted. For additional information, contact the Matthaei Facility Office at 126 Matthaei Building; 577-4295.


## OTHER UNIVERSITY SERVICES

## UNIVERSITY LIBRARIES

The University Libraries are housed in six separate units, five of which are free-standing buildings. As of 1988, the library system reported holdings of $2,300,000$ volumes, 25,000 current journal subscriptions, and $1,800,000$ microforms, in addition to over 550,000 pamphlets and numerous films, filmstrips, maps, sound recordings, and videocassettes.

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

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

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

## Purdy/Kresge Library

Telephone: 577-4040
The Purdy/Kresge Library, containing the graduate and undergraduate collections for the humanities, social sciences, business, and education, serves the College of Liberal Arts, the College of Education, the College of Urban, Labor, and Metropolitan Affairs, the School of Business Administration, the School of Social Work, the Institute of Gerontology, and the Library Science Program. The Purdy/Kresge Library is the largest of the University's libraries.

The Purdy/Kresge Library contains approximately 1.4 million books, 13,000 current journals, extensive microform collections, and the largest government document collection on campus. In addition, the Media Library within the Purdy/Kresge Library holds over 6,000 films and videotapes. Media Services provides photographic services, design services, and film rentals. The Leonard Simons Collection contains rare Michigan history texts.

The Purdy Library also houses the Folklore Ethnic Archive as well as the offices of the Dean of Libraries and Library Science. Tours of the collection and facilities are available for classes or other interested groups.

## Science and Engineering Library

## Telephone: 577-4066

The Science and Engineering Library, established in 1944 as a separate library, serves the College of Engineering, the College of Nursing, and
the Departments of Biology, Chemistry, Physics, Mathematics, Computer Science, Food and Nutrition Science, and Geology in the College of Liberal Arts. In addition, the Library works closely with local businesses to meet their information needs.

The Library contains almost 400,000 volumes and currently receives over 3,000 journals. Special holdings include the System on Automotive Safety Information (SASI) collection, a unique resource for transportation research, as well as the River Rouge Collection and the Hooker Historical Collection. The Library also houses the Central Technical Services Department of the University Libraries.

## Vera Parshall Shiffman Medical Library

Telephone: 577-1088
The Shiffman Medical Library, located in the Detroit Medical Center since 1970 , supports the educational, research, and clinical programs of the School of Medicine and the College of Pharmacy and Allied Health Professions.

The Library has over 185,000 volumes and about 3,000 journal subscriptions. The Computer Resources Lab, opened in 1988, provides computer hardware and software support for patient management and medical decision making as well as for tutorials. The Shiffman Medical Library is an active participant in the Greater Midwest Regional Library Network and can draw upon its interlibrary loan resources to provide access to the nation's biomedical information.

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

## Arthur Neef Law Library

## Telephone: 577-3925

The Law Library is located in the Law School building at the north end of the University campus. The collection of over 300,000 volumes makes it the second largest law tibrary in Michigan. The Library subscribes to 1,500 journals and 1,000 loosleaf services. An official depository since 1971, the Library holds over 100,000 U.S. government documents including 3,500 current serials. Students and faculty have access to the two major legal databases, LEXIS and WESTLAW, as part of the educational program of the Law Library

In addition to complete collections of federal and Michigan legal materials, the Library contains the reported cases of the highest courts of all states and territories as well as their statutory compilations, digests and encyclopedias. The Library owns major microform collections of U.S. government publications; colonial, state, and territorial session laws; and the U.S. Supreme Court records and briefs.

## 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, newpapers 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.

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

## University Ombudsman

652 Student Center; 577-3487<br>Ombudsman: Louis Stern

The Ombudsman is charged with helping students to solve University-related problems and to recommend changes of policies and procedures to the President of the University. While Ombudsman means 'grievance man' in Swedish, students may also appeal to the Office of the Ombudsman for advice, information, or assistance in expediting action.

Students may seek the Ombudsman's assistance on problems ranging from admission to obtaining a diploma, from academic to nonacademic. Academic problems include registration, records, grades, teaching, and graduation requirements. Nonacademic problems include facilities and services, financial aid, housing, parking, payroll, and tuition. The Ombudsman chairs the Tuition and Fees Appeals Board which is the final arbitrator of requests for cancellation of tuition or fees.

The Office of the Ombudsman was established to assist students to break through bureaucratic inertia, overcome unfair treatment, or obtain consideration of extenuating circumstances. If in doubt about University policies or requirements, students are invited to ask the Ombudsman.


## School of Business Administration

## 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 undegraduate 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 older student populations. The student body is racially and ethnically diverse, commuting, and often working and raising families. To meet the needs of these students, the School schedules classes throughout the metropolitan area, during both day and evening hours.

The School of Business Administration also recognizes its obligation to community service. As part of an urban university, the School makes a special commitment to foster basic and applied research that will benefit business enterprises. Equally important is the dedication to excellence in the instructional programs that create and support the business leadership that is critical to the continuing revitalization of southeastern Michigan.

## Undergraduate Program

The undergraduate program begins after students have acquired an educational foundation in the basic sciences and arts in the first two years of undergraduate work. During the third and fourth years, the student follows a program of study in the School of Business Administration designed to provide professional education. Students may select majors in accounting, finance, management, management information systems, and marketing. Degrees of Bachelor of Science in Business Administration and Bachelor of Arts in Business Administration are awarded.

## Graduate Program

The program leading to the Master of Business Administration degree is dedicated to educating graduate students for professional careers in business administration. The program requires a minimum of thirty-three graduate credits beyond the pre-program foundation requirements. The M.B.A. program is offered primarily during the evening hours, with limited course offerings on Saturday mornings.

For additional graduate program information, consult the Wayne State University Graduate School Bulletin.

## Degree Programs

## Bachelor of Science in Business Administration with majors in

Accounting
Finance and Business Economics
Management and Organization Sciences
Management Information Systems
Marketing

## Bachelor of Arts in Business Administration with majors in

all of the concentrations offered in the Bachelor of Science program cited above

## * Master of Business Administration

## Directory of the School

Dean $\qquad$ 226 Prentis Building; 577-4501
Associate Dean for Research and Academic Programs
226 Prentis Building; 577-4503
Assistant Dean for Academic Affairs and Special Programs
226 Prentis Building; 577-4472
Assistant Dean of Small Business Development Programs
2727 Second Avenue; 577-4848
Business Manager
. 226 Prentis Building; 577-4502
Director, Bureau of Business Research
226 Prentis Building; 577-4500
Manager, Computer Operations ............. 6 Prentis Building; 577-4546
Director, Management Center............. 105 Prentis Building; 577-4449
Director, Michigan Small Business Development Center
2727 Second Avenue; 577-4848
Director, Professional Development Division
105 Prentis Building; 577-4353
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

[^4]
## BACHELOR'S DEGREES

## Admission Requirements

The undergraduate program of the School of Business Administration is offered at the upper-division (junior-senior) level to Wayne State University students who have completed the pre-business administration course requirements (see below), and a minimum of fifty-four credits with at least a 2.5 cumulative honor point average; or transfer students who have completed the pre-business administration course requirements and a minimum of eighty quarter credits or fifty-four semester credits with at least a 2.5 cumulative honor point average. The maximum number of transfer credits that will be accepted from a junior or community college is ninety-six quarter credits or sixty-four semester credits. Equivalency tables have been developed with area community colleges which identify lower division community college courses that are equivalent to the lower-division pre-business administration courses at Wayne State University.

Application for admission and all official collegiate transcripts must be submitted by transfer students to the Undergraduate Admissions Office of Wayne State University. Qualified applicants will then be referred to the School of Business Administration's Office of Student Services.

Students seeking admission who are currently enrolled in the pre-business administration program at Wayne State University and who have a curnulative honor point average of less than 2.5 may be required to present final grades before formal admission action is taken.

There is no guarantee of admission to the School of Business Administration. Formal appeals of admission denial may be made to the Director of the Undergraduate Program of the School of Business Administration. Guidelines for appeal are available in the Office of Student Services and in the Office of the Dean.

## Pre-Business Administration Curriculum

The undergraduate program in business administration begins after students have acquired an educational foundation during the freshman and sophomore years in the basic sciences and the arts. Additionally, basic courses in accounting, business computing, business law, mathematics, economics, and statistics will comprise a portion of the pre-business administration curriculum. Students complete prescribed courses as pre-business administration students formally enrolled in the College of Liberal Arts.

The Undergraduate Committee, under certain conditions, may admit students to the School of Business Administration with up to three deficiencies in pre-business administration course requirements. However, no student will be admitted with deficiencies in both mathematics and statistics.

SPECIFIC COURSE REQUIREMENTS: The courses listed below are required of all pre-business students prior to admission to the School of Business Administration. No substitute courses are permitted except as noted. A minimum grade of ' $C$ ' ( 2.0 h.p.a.) must be earned in ALL specific course requirements.

## Accounting

ACC 301 ( 3 cr ).......... Prereq: MAT 150; ECO 101, 102 .
ACC 302 ( 3 cr )......... Prereq: ACC 301 and ALL ACC 301 prerequisites.


## Bachelor of Science <br> in Business Administration

## Admission Requirements: see above.

DEGREE REQUIREMENTS: Candidates for the Bachelor of Science in Business Administration must satisfactorily complete 128 credits including the pre-business administration curriculum (see above), and all general education, core, major, and elective requirements as noted below. Within the student's degree program, no more than seventy-six credits in business administration subjects and upper division economics may be applied toward the degree.
To be eligible for the degree, students must have earned a minimum 2.0 grade point average in the major requirements and a minimum overall grade point average of 2.0 in all undergraduate course work completed at Wayne State University.

## - General Education Requirements

All undergraduate students are responsible for satisfactorily completing the University General Education Requirements (see page 20). In reviewing that material, students should note that MKT 533

[^5]satisfies the Writing-Intensive major course requirement for business administration curricula; ACC 263 satisfies the Computer Literacy requirement; and PSY 101 ( 4 credits) is recommended for satisfaction of the Life Science group requirement. Pre-business and Business Administration students should consult the University Advising Office or the School of Business Administration's Office of Student Services, for specific information regarding the satisfaction of these requirements, consistent with academic requirements of the School.

Implementation Schedule: Effective Fall Term 1987, Wayne State University has required undergraduate students to fulfill the University-wide General Education Requirements, implemented in accordance with the following schedule:

Fall Term 1987: The General Education Requirements apply to all entering freshmen and to students who transfer twelve or fewer credits.

Fall Term 1990: The General Education Requirements apply to the group of students cited above and to transfer students who began college work in Fall 1988 or thereafter.

Fall Term 1991: The General Education Requirements apply to all undergraduate students.

Students who have matriculated at Wayne State University prior to the years covered by the above schedule must fulfill all University and School/College requirements in force at the time of entry.

Note; All General Education competency requirements may be satisfied through required pre-business adminsitration courses.

## - Core Requirements

Following formal admission to the School of Business Administration and after completion of the pre-business administration curriculum (see above), all students must complete the following core courses. Students are responsible for observing all course prerequisites and limitations.

| ACC 563.................Business Information Systems |  |
| :---: | :---: |
| FBE 523.................Financial Markets, Institutions and Securities |  |
| FBE 529.................Business Finance |  |
| FBE 540..................Quantitative Methods II: Statistical Methods Must be satisfactorily completed in the first sixteen credits after admission to the School of Business Administration. |  |
| MGT 550................Organization and Management Theory |  |
| MGT 552................. Behavior in Organizations |  |
| MGT 560...............Introduction to Production Management |  |
| MGT 589................ Social and Political Influences on Business |  |
| MGT $689 \ldots . . . . . . . . . . . . . . . B u s i n e s s ~ P o l i c y . ~ T o ~ b e ~ t a k e n ~ a s ~ o n e ~ o f ~ t h e ~ l a s t ~ f i v e ~ c o u r s e s ~$ toward bachelor's degree and after completion of all other core courses. |  |
| MKT 530................Marketing Management |  |
| MKT 533. | Business Communication (Prereq: successful completion of English Proficiency Examination in Composition and all other pre-business administration requirements) |
|  | arketing Analysis and Decision Makin |

## - Major Requirements

Majors and specializations are offered through the School's four academic departments: Accounting, Finance and Business Economics, Management and Organization Sciences, and Marketing. The accounting major requires nine courses (a minimum of twenty-six credits); other majors require six courses (eighteen credits).

Students should refer to the respective departmental section (pages

57-65) for specific majors and specializations. After selecting a major, students should consult the Office of Student Services of the School of Business Administration to obtain an official Plan of Work. All courses must be taken in accordance with an approved Plan of Work and all course prerequisites and limitations must be observed.

## - Elective Requirements

Electives form an integral part of an education in business administration. A student's selection of elective courses should be guided in part by his or her career objectives. These elective courses constitute study in addition to the pre-business administration, core, and major requirements listed on the student's Plan of Work. Elective credits for students admitted to the School of Business Administration are taken under the direction of the School of Business Administration. The number of elective credits that each student is required to take may vary depending on the major or specialization selected and the course options taken by the student to satisfy various requirements. Elective credits are required in the non-business elective area and the free elective area.

NON-BUSINESS ELECTIVES: All business administration students, regardless of major, must satisfactorily complete eight credits in non-business elective courses. Non-business electives must be taken from courses offered outside the School of Business Administration. After a student has been admitted to the School, any and all remaining non-business electives must be taken at the 300 level (junior-senior) or higher in the College of Liberal Arts, the College of Engineering, or the School of Fine and Performing Arts with the following exceptions:

1. Computer Science courses below the 300 level may be used to satisfy this requirement;
2. Upper-division courses in the Department of Economics ( 300 level or higher) and Physical Education or ROTC credits may not be used to satisfy this requirement.

FREE ELECTIVES: Eight credits in free electives are required of all business administration students except those majoring in accounting. (No free electives are provided for within the minimum 128 credit degree program in the accounting major.) Free electives may be selected from courses offered in the School of Business Administration, the College of Liberal Arts, the College of Engineering, or the School of Fine and Performing Arts, subject to the same conditions and exceptions noted for non-business electives (see above).

Students who wish to take elective courses in schools or colleges other than those specified must obtain prior approval from the Undergraduate Committee of the School of Business Administration. No degree credit will be granted if prior approval is not obtained. Additionally, no credit will be allowed for remedial courses on a sub-collegiate level, nor subsequently allowed for courses originally taken on a non-credit basis.

LANGUAGE ELECTIVES: Students who are interested in employment opportunities overseas or with international corporations should consider electing certain foreign language courses especially designed for business administration majors. In addition, students who wish to earn the Buchelor of Arts degree may utilize their electives toward the satisfying of the Bachelor of Arts foreign language requirements (see below). For more information, contact the Chairperson, Department of Romance and Germanic Language and Literature, 487 Manoogian Hall, telephone 577-3002.

## Bachelor of Arts <br> in Business Administration

Admission Requirements: see above, page 49.
DEGREE REQUIREMENTS are the same as for the Bachelor of Science, cited above, with the additional stipulation that a student must attain a level of proficiency in a single foreign language equivalent to the completion of eleven credits through university-level course work or placement by examination administered by the appropriate W.S.U. foreign language department. In some instances, completion of the Bachelor of Arts foreign language requirements may result in course work beyond the 128 credit minimum.

## Professional Development Co-op Program

The School of Business Administration actively participates in the University Cooperative Education (Co-op) Program in which students alternate semesters of work and academic study. Eligibility begins in the junior year or upon admission to the School of Business Administration if the student has previously earned more than the minimum fifty-four semester credits required for admission to the School. Students interested in this program should contact the Cooperative Education Coordinator, University Placement Services, Room 111, Mackenzie Hall.

Students admitted to the program with minimum junior standing should recognize that an additional calendar year may be needed to fulfill the requirements for the bachelor's degree. No academic credit is granted for participation in the Co-op Program; S/U marks, however, are given and are entered on the official University transcript.

## Mortuary Science

Mortuary science students may earn a bachelor's degree in business administration in addition to the Certificate in Mortuary Science. For specific requirements, consult the Office of Student Services of the School of Business Administration.

## 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 5. The following additions and amendments pertain to the School of Business Administration.

All students must fulfill the upper-division requirements of the School of Business Administration in effect at the time of admission to the School of Business Administration.

## Admission to Class

Students who are late registrants or who wish to file a Change of Elections will not be added to any class that meets once a week after the second class meeting. For classes meeting twice a week, no student will be added after the third class meeting. Students may not attend a class for which they are not officially registered and will not be added retroactively.

## Application for Degree

Each candidate must file an Application for Degree in the Records Office, 1 West HNJ SSC, no later than the last day of the final registration period for the semester in which he or she expects to complete the requirements for the degree. If an Application for Degree was filed for a previous semester in which the student did not graduate, a new application is required.

## Attendance Policy

Regular attendance is a necessary condition for success in college study. This policy recognizes that the course content includes classroom lecture and discussion, certain aspects of which may not be covered on examinations, quizzes, term papers, or homework assignments. Each instructor will announce his or her attendance standards at the beginning of the term.

## Change of Major

Students wishing to change majors or Plans of Work within the School of Business Administration must submit a request in writing to the Student Services Office, 103 Prentis Building. A Plan of Work for the requested major will then be issued. Students are advised that such changes occurring late in their program may result in additional coursework beyond the minimum requirement of 128 credits.

## 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. Assignments submitted for any class are expected to be original, i.e., not resubmissions of work submitted in a previous or concurrent class.

If there are reasonable grounds to believe that a student has disregarded the regulations or student responsibilities, he or she may be disciplined. Such discipline may include suspension or dismissal, but no dismissal will be directed without reasonable opportunity for an appropriate hearing.

## Degrees

Degrees are granted upon the recommendation of the faculty of the School of Business Administration. Consideration is given to both scholastic attainment and to compliance with the standards and rules of the School.

## Directed Study

A directed study involves advanced readings and research or a tutorial under the supervision of a faculty member in an area or areas of special interest to the student and faculty member; credits vary between one and three. A cumulative honor point average of 2.75 is required to be eligible for consideration for directed study work. Students must obtain 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 graduation requirements.

## English Proficiency Examination

The English Proficiency Examination in Composition is a pre-business administration requirement. Each student must pass the examination within the first sixteen credits following admission to the School of Business Administration. Students who fail the examination and who have taken sixteen credits after admission to the School of Business Administration will be excluded from taking any further courses until the proficiency examination is successfully completed. Entering students should take the examination as soon as possible in order to avail themselves of remedial work if needed. Information regarding application, dates, and times of the examination may be obtained from the Testing and Evaluation Office, 343 Mackenzie Hall; telephone: $577-3400$. The fee is $\$ 7.00$.

No credit toward a degree in business administration is granted for English 101 or 108. A maximum of four credits toward a degree in business administration is granted for English 102, Introductory College Writing, or its equivalent.

## Graduation with Distinction

Wayne State University bestows upon students completing the baccalaureate degree three separate designations for scholastic excellence reflected in the cumulative honor point average: Cum Laude, Magna Cum Laude, and Summa Cum Laude. Graduation with distinction is indicated on the student's diploma and on the transcript. For information, see page 34.

## 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 Dean of the School or his/her designee.

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 46) is available to all students to assist 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 to certify in writing to the University Records Office that additional time is needed for the removal of the Incomplete.

## Normal Program Load

The normal academic load for an undergraduate student in the School of Business Administration is from nine to sixteen credits each semester, depending upon the particular courses elected. No student should expect to carry a full load and at the same time be employed full-time. Students desiring to carry more than eighteen credits must obtain written permission from the Director of Student Services prior to registration. Excess credits will not be honored when taken without prior written approval.

## Passed/Not Passed Registration

Undergraduate students in the School of Business Administration may not take courses offered by the School of Business Administration on a passed-not passed basis.

## Probation and Exclusion

A student who registers for, but repeatedly fails to complete his/her program and thus does not make normal progress toward graduation, may be placed on probation.

If a student's academic work is unsatisfactory (less than 2.0 cumulative honor point average or less than 2.0 honor point average in his or her major), the student will be placed on probation with the understanding that he or she will be expected to achieve a cumulative 2.0 honor point average within the next twelve credits completed, or a 2.0 major honor point average within the next six credits completed in the major. If probationary status is not removed within the prescribed number of credits, the student is subject to either temporary suspension or permanent dismissal from either the major or from the School of Business Administration.

The second (or subsequent) time(s) a student is placed on probation, he or she is subject to immediate dismissal from the School of Business Administration.

In the event of a temporary suspension, readmission to the School of Business Administration will be considered only with the recommendation of the Undergraduate Committee.' If, after readmission to the School of Business Administration, the academic deficiency is not removed within the first nine credits attempted, the student will be permanently dismissed from the School. Class work completed at another institution during a period of temporary suspension will not be considered for transfer credit.
The Undergraduate Committee is composed of the four departmental
chairpersons and is chaired by the Director of the Undergraduate
Program.

While on probation, a student may not represent the School in student activities.

The exclusion of any student will be reviewed by the Undergraduate Committee of the School of Business Administration. A student on probation who fails to complete the courses for which he or she registers, without good reason as determined by the Dean or designee, shall not be permitted to re-register in the School of Business Administration.

The Undergraduate Committee, upon the recommendation of the student's department chairperson, may permanently exclude a student from a major, if the student fails to remove himself or herself from probationary status within the prescribed number of credits.

In matters where the School's final decision is based upon the evaluation of a student's academic performance and when review procedures available to him or her within the School have been exhausted, the student may request the Provost to review that decision on the record.

## Repeating of Courses

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

## Residence Requirement

The final year and the last thirty-two credits must be taken at Wayne State University. In exceptional cases, a limited number of the last thirty-two credits elected toward a degree may be taken at another accredited college or university. All such cases must receive the approval of the Director of the Undergraduate Program before the work is undertaken.

Students returning to the School after a five-year absence are required to conform to the program requirements in effect at the time of their return.

## 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.

## Waiver of Course Prerequisites

Students are expected to comply with all course prerequisites as stated in this bulletin and in the Schedule of Classes. Exceptions may be granted in certain cases for which prior written approval of the Assistant Dean for Academic Affairs or the appropriate department chairperson is required.

## Waiver of Degree Requirements

Students are expected to comply with degree requirements as listed in this bulletin and on their Plans of Work. They may petition for a modification in degree requirements by completing a waiver form and submitting it to the Office of Student Services of the School of Business Administration. Waiver of a School requirement requires the recommendation of the Undergraduate Committee and the approval of
the Dean or his/her designee. Waiver of a departmental requirement requires the recommendation of the departmental chairperson and the approval of the Dean or his/her designee. Undergraduate students are advised that no faculty member is authorized to approve a change in degree requirements.

## Withdrawals from Class

See page 30 for the University policy on withdrawal. Tuition refund and withdrawal policy also appears each semester in the Schedule of Classes.


## 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.

Adcraft Foundation Scholarship: Designated for outstanding students with career interests in the advertising profession.

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.
Stanton P. Bockneck Memorial Scholarship: Designated for students demonstrating high academic achievement in accounting.
Betty Brown Scholarship (ASWA): Awarded through the American Society of Women Accountants to female accounting students demonstrating 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 with high academic achievement.
Commerce High School Alumni Scholarship: Designated for business administration students demonstrating high academic achievement.
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 demonstrating high academic achievement.

Charles E. Dover Scholarship. Designated for business administration students demonstrating high academic achievement.

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

Farmer's Insurance Group of Companies Scholarship: Designated for students interested in insurance careers.

Sidney and Jewel Fields Scholarship. Created by the Morris and Emma Shaver Foundation, this award is designated for accounting students demonstrating high academic achievement.

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

First of America 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.

Charles Hagler Scholarship in Public Relations: Designated for students demonstrating high academic achievement with a career interest in public relations.
George R. Husband Scholarship: Awarded to accounting majors demonstrating high academic achievement.
Stanley H. Kaplan Scholarship. Two annual awards, one designated for an accounting major demonstrating high academic achievement, and one designated for a business administration senior demonstrating high academic achievement who intends to pursue a master's degree in business administration.

Wilfred Kean Memorial Scholarship. Designated for business administration students demonstrating high academic achievement. Preference is given to students enrolled in evening classes.
Manufacturers National Bank Scholarship. Established in 1988, this award is designated for minority students demonstrating high academic achievement who are interested in retail banking. Available only to management and marketing majors.

Michigan Bell Scholarship: Established in 1987, a scholarship/internship program designated for students in business administration, computer science, and engineering 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 Minority Accounting Scholarship: Designated for minority students demonstrating high academic achievement in accounting.

Peat Marwick-Wayne State Alumni Scholarship: Funded solely by Wayne State Alumni with Peat Marwick Main and Company, this award is designated for accounting majors demonstrating high academic achievement.

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

Aubrey C. Roberts Memorial Scholarship: Awarded to accounting majors demonstrating high overall scholarship and outstanding academic achievement in accounting subjects.

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

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

## Recognition Awards

Alpha Kappa Psi Scholarship Award: Awarded annually to the graduating senior 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 graduating senior with the highest scholarship in business administration.

Distinguished Student A ward: Established in 1981, this award is presented 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 Spring 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.

## Communications Laboratory

The Richard A. Marr Communications Laboratory provides an exciting, modern instructional facility, utilized in many business administration courses. Equipped with the most current audio-visual hardware from the laboratory, students have an opportunity to videotape, review and critique speeches, presentations and panel discussions required in their course work.

## Microcomputer Facilities

With the increasing use of microcomputers in business administration courses, the School of Business Administration has established four modern microcomputer laboratories with a total of eighty-eight work stations in the Prentis Building. Two serve as microcomputer classrooms, one is designated for student walk-in traffic, and one is used primarily for microcomputer seminars.

Many of the microcomputers have printing capabilities and several are connected to the University's mainframe computer. Through the laboratories, students have access to five laser printers as well as an eight-pen color plotter.

Currently over 200 sets of software representing more than twenty different software packages are available. Two of the microcomputer laboratories aree open to business administration students six days per week, providing students with access during both the day and cvening.

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

## Professional Development Division

The Professional Development Division (P.D.D.) is the non-credit instructional component of the School of Business Administration. The P.D.D.'s primary mission is to meet the education and training needs of the greater business community by offering a variety of seminars, workshops, and other special programs.

Within the Professional Development Division is the Management Center, through which numerous programs are offered to the corporate community. It offers programs in-house as well as on campus and at other locations in the Detroit metropolitan area.

The P.D.D. also regulariy conducts a series of programs focusing on the starting and operating of a small business. Additionally, instructional programs of a professional nature are made available to the community.

Professional Development Division programs focus on problem solving, organizational productivity, informational updating, and skill development. Programs are tailored to specific audiences, with instuctors chosen from the academic, consulting, and business communities who have experience and expertise in the field. The

Director of the Professional Development Division is Dr. Edwin Harris; telephone: 577-4353. Director of the Management Center is Mr. Rod Beaulieu; telephone: 577-4449.

## 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, comprised of numerous subcenters throughout the state, 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 brief 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 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 (577-4848). The Wayne State SBDC (subcenter) is headed by Dr. Raymond M. Genick (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 1000 counseling cases completed to date, the School's SBI is one of the largest institutes in the United States. The SBI plays an important role in fulfilling the School's service mission and in providing a unique educational opportunity for selected students. For information, contact Dr. John G. Maurer, Director, Small Business Institute; 577-4517 and 577-4515.

## Office of Student Services

The Office of Student Services is responsible for evaluating student academic credentials, 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 (577-4510) or a member of the undergraduate counseling staff (577-4505).

## Placement Services

The School of Business Administration interacts with the University Placement Services 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 fraternity in business, 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.

Additional information regarding specific student organizations can be obtained from the Business School Student Senate Office (577-4783) or the University Student Center and Program Activities Office (577-3444).

## ACCOUNTING

Office: 200 Prentis Building

Chairperson: Alan Reinstein

## Professors

Charles R. Allberry (Emeritus), Gerald Alvin, Raymond J. Murphy (Emeritus), Alan Reinstein, William H. Volz

## Associate Professors

Donald E. Gorton, Robert R. Irish, K. Gregory Jin, Ronald D. Schwartz, Myles S. Stern, James F. Wallis (Emeritus)

## Assistant Professors

Fouad K. AlNajjar, Vivian L. Carpenter, H. Alex Chang, Gregory J. Reed, Jack D. Schroeder, Adrianne L. Slaymaker, Albert D. Spalding, Jr., Hamid R. Tavakolian, Linda B. Wright

## Lecturers

Susan D. Garr, Edward M. Libby, Margaret A. Merriman, Sandra G. Penn, Audrey Taylor

## Degree Programs

## Bachelor of Arts in Business Administration with a major in Accounting

## Bachelor of Science in Business Administration with a major in Accounting

## Bachelor of Arts in Business Administration with a major in Management Information Systems

Bachelor of Science in Business Administration with a major in Management Information Systems

## Bachelor's Degrees

Admission Requirements: Admission to undergraduate degree programs in the School of Business Administration is granted to upper division students (junior and senior level) only after completion of a pre-business administration curriculum; for a list of required courses, as well as the admission policies of the School, see page 49.

DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 128 credits including satisfaction of the degree requirements stated on pages 49-51, as well as requirements for one of the specializations listed below. All course work must be completed in accordance with the academic procedures of the University and the School which apply to this degree; see pages 5-35 and 49-53 respectively.

## - With a Major in Accounting

The accounting program is designed to prepare students for professional careers in public, corporate, or governmental accounting. While stressing fundamental accounting theory, the curriculum provides thorough coverage of the techniques accountants use to apply these concepts to practical situations. Students who concentrate in accounting must complete the following courses:

| ACC 510 | Advanced Accounting Theory I |
| :---: | :---: |
| ACC 511. | .......Advanced Accounting Theory II |
| ACC 512. | ....Advanced Accounting Theory III |
| ACC 513. | Accounting Systems Design and Control |
| ACC 514 | Auditing |
| ACC 516. | ... Cost Accounting |
| ACC 517 | Taxes on Income |
| ACC 553. | .a.......Business Law 11 |
| ACC 617 | Inmental and Not-for-Profit Accounting |

## - With a Major in <br> Management Information Systems

Management Information Systems (MIS) refers to the use of computer-based systems to gather and analyze complex information about all aspects of a business. This information is used by managers to make business decisions. The use of computers has spread into virtually every industry in America, and, at present, there is a great demand for information systems professionals. Students specializing in MIS frequently pursue career positions as communications analysts, data base administrators, and information systems managers.

Specific course information regarding the MIS curriculum may be obtained from the Office of Student Services, 103 Prentis Building, or the Department of Accounting, 200 Prentis Building.


## COURSES OF INSTRUCTION ${ }^{1}$ (ACC)

## 263. (CL) Introduction to Business Computing. Cr. 2

Introduction to management information systems, programming, data base management, spread sheets, word processing, telecommunications, and graphics.

## 301. Elementary Financial Accounting Theory. Cr, 3

Prereq: bachelor's degree; or sophomore standing, ECO 101 and ECO 102, MAT 150. Offered for one credit only after ACC 550. Introduction to financial accounting principles; preparation and interpretation of balance sheets and income statements.

## 302. Elementary Managerial Accounting Theory. Cr. 3

Prereq: ACC 301, sophomore standing, ECO 101 and ECO 102, MAT 150; or ACC 301, bachelor's degree. Introduction to manufacturing and managerial accounting, analysis of cash flow and financial statements. Basic concepts of business data processing systems.

## 351. Business Law I. Cr. 3

Prereq: sophomore standing. Introduction to the domestic and international legal systems. Impact of the legal environment on management decision-making. Law of contracts and sales, including products liability.

## 450. (MGT 450) Business Administration Co-op Assignment. Cr. 0

Offered for $S$ and $U$ grades only. No credit toward degree. Must be elected by Professional Development Co-operative Program students during work semester. Opportunity to put theory into practice on the job. Students will normally be assigned to cooperating business organizations for internship periods of one semester.

## 490. Directed Study in Accounting. Cr. 1-3

Prereq: 2.75 cumulative h.p.a. to be eligible; written approval on proposal form prior to registration; consent of chairperson of student's major department. Three credits maximum in an academic semester. Advanced readings and research or tutorial under the supervision of a faculty member in areas of special interest to student and faculty member.
510. Advanced Accounting Theory I. Cr. 3

Prereq: ACC 302. Conceptual foundations of accounting principles. Analysis of various accounting theories concerning asset valuation.
511. Advanced Accounting Theory II. Cr. 3

Prereq: ACC 510. Interpretation of equities in corporation assets and measurement of income.
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.
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.
514. Auditing. Cr. 3

Prereq: ACC 511, FBE 540. Principles and procedures of auditing;
${ }^{1}$ See page 433 for interpretation of numbering system, signs and
abbreviations
professional standards and responsibilities of the certified public accountant.
(T)
515. Principles of International Accounting. Cr. 3

Prereq: ACC 511. Introduction to the principles of international accounting. Comparison of various accounting systems, foreign currency, consolidation and international harmonization in accounting.
516. Cost Accounting. Cr. 3

Prereq: ACC 302. Theory and practice of cost accumulation and analysis to facilitate managerial decisions and cost control systems.
517. Taxes on Income. Cr. 3

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

## 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.
553. Business Law II. Cr. 3

Prereq: ACC 351 and sophomore standing. Law of agency, corporations, partnerships and negotiable instruments. Professional liability.
563. Business Information Systems. Cr. 3

Prereq: ACC 301 and 302, CSC 100, MAT 150; coreq: 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.
592. Data Base Systems. Cr. 3

Prereq: ACC 563. Student computer account required. Effective use of data base management systems for processing management information; design and administration of systems.
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.

## FINANCE AND

 BUSINESS ECONOMICSOffice: 328 Prentis Building

## Professor

Milton H. Spencer

## Associate Professors

Robert C: Bushnell, Walter J. Chamberlin (Emeritus), Barbara Price, Kelly R. Price, David R. Verway, Frank L. Voorheis

## Assistant Professors

Mark E. Bayless, Hassan B. Ehsani, Mahmoud Haddad, Joel M. Schulman, Toni M. Somers

## Lecturers

Timothy W. Butler, Jack R. Kuzminski, Glenn G. Malcolm

## Degree Programs

## Bachelor of Arts in Business Administration with a major in Finance and Business Economics

## Bachelor of Science in Business Administration with a major in Finance and Business Economics

## Bachelor's Degrees

Admission Requirements: Admission to undergraduate degree programs in the School of Business Administration is granted to upper division students (junior and senior level) only after completion of a pre-business administration curriculum; for a list of required courses, as well as the admission policies of the School, see page 49.

DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 128 credits including satisfaction of the degree requirements stated on pages 49-51, as well as requirements for one of the specializations listed below. All course work must be completed in accordance with the academic procedures of the University and the School which apply to this degree; see pages $5-35$ and $49-53$ respectively.

## Corporation Finance

The corporate financial specialization prepares individuals for careers as financial managers in non-financial corporations. Entry level positions are generally as financial analysts or staff accountants, while potential future responsibilities include management of working capital, operating budgets, financial statement preparation, bank relationships, long-term financial planning, capital budgeting, treasury operations and stockholder relations. Students should complete core courses FBE 529 and FBE 540 before beginning the following major requirements:

| FBE 621 | Stock Market and Investments |
| :---: | :---: |
| fBE 627 | Advanced Business Finance |
| ACC 510 | . Advanced Accounting Theory 1 |
| ACC 516 | Cost Accounting |

Plus two of the following:

| FBE 622 Portfolio Management |  |
| :---: | :---: |
| FBE 632 ..............................................Principles of International Business Finance |  |
| FBE 633 | Bank Management |
| FBE 634 | Speculative Markets: Futures and Options |
| FBE 635 | ... Real Estate Finance |
| FBE 636 | Financial Modeling |
| FBE 637 | .. Risk Management |

## Financial Markets and Investments

This specialization prepares individuals for careers in financial institutions such as commercial banks, savings and loan associations, credit unions, insurance companies and in other financial intermediaries such as investment banking firms, security and investment brokerage houses, and security and commodity exchanges. Responsibilities within such firms are highly varied and include commercial and personal lending, branch management, security analysis, portfolio and trust management, real estate management, and insurance, commodity and security brokerage. Students should complete core courses FBE 523 and FBE 540 before beginning the following major requirements:

| FBE 621 | .Stock Market and Investments |
| :---: | :---: |
| FBE 622 | Portfolio Management |
| FBE 634. | e Markets: Futures and Options |

Plus three of the following:

| FBE 627 | ess Finance |
| :---: | :---: |
| FBE 632 | Principles of International Business Finance |
| FBE 633 | ....................Bank Management |
| FBE 635 | .............. Real Estate Finance |
| FBE 636 | Financial' Modeling |
| FBE 637 | . Risk Management |

## COURSES OF INSTRUCTION ${ }^{1}$ (FBE)

## 305. Personal Financial Planning. Cr. 3

Prereq: sophomore standing. Principles of finance applied to personal financial affairs. Topics include: goal formation, cash budgeting, time value of money, insurance, real estate, banking, investments, tax planning, pensions, estate planning.
(I)
330. Quantitative Methods I: Probability and Statistical Inferences. Cr. 3
Prereq: MAT 150 or higher or equiv. No business or free elective credit. Repeat of ECO 410, STA 102, former FBE 530 or equiv. Measures of central tendency and dispersion. Introduction to probability; normal, binomial, exponential, and Poisson distributions. Statistical inference and sampling methods.

## 450. (MGT 450) Business Administration Co-op Assignment. (ACC 450). Cr. 0

Offered for $S$ and $U$ grades only. No credit toward degree. Must be elected by Professional Development Co-operative Program students during work semester. Opportunity to put theory into practice on the job. Students will normally be assigned to cooperating business organizations for internship periods of one semester.
490. Directed Study in Finance and Business Economics. Cr, 1-3

Prereq: 2.75 cumulative honor point average to be eligible; written approval on proposal form prior to registration, consent of chairperson of department in which student is majoring. Advanced

[^6]readings and research or tutorial under the supervision of a faculty member in areas of special interest to student and faculty member. (T)
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.

## 529. Business Finance. Cr. 3

Prereq: ECO 102, ACC 302 and FBE 330 or ECO 410 or equiv. Principles of financial administration, with applications to problems of financial analysis, control, and planning by firms under changing economic conditions.
540. Quantitative Methods II: Statistical Methods. Cr. 3

Prereq: FBE 330 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.
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.

## 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.
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.
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.
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.
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.

## 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, inchuding deposits, cash, loans and asset accounts. Discussion of current topics including liquidity, capital adequacy, electronic fund transfers and mortgages.
634. Speculative Markets: Futures and Options. Cr. 3

Prereq: FBE 622. Recent developments in futures and options. Principles and theories applicable to pricing of, and markets for,
futures and options; analysis and management of financial portfolios. Principles of valuation of options and futures investments; brief review of empirical evidence.
(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)
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.
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.
( $\mathrm{F}, \mathrm{W}$ )


# MANAGEMENT AND ORGANIZATION SCIENCES 

Office: 328 Prentis Building<br>Chairperson: Edwin F. Harris

## Professors

Bruce E. DeSpelder (Emeritus), Victor C. Doherty, James E. Martin, John G. Maurer, Richard O. Osborn, Edward T. Raney (Emeritus)

## Associate Professors

Edwin F. Harris, K.S. Krishnan, Thomas J. Naughton, Harvey Nussbaum, Donald H. Palmer (Emeritus), Irving Paster (Emeritus), Fred P. Unruh (Emeritus), Harish L. Verma

## Assistant Professors

Karen A. Bantel, Yitzhak Fried, Barbara C. Goodman, Ronald H. Humphrey, Ariel S. Levi, Margaret H. Padgett, Janice H. Zahrly

## Degree Programs

Bachelor of Arts in Business Administration with a major in management and organization sciences

## Bachelor of Science in Business Administration

 with a major in management and organization sciences
## Bachelor's Degrees

Admission Requirements: Admission to undergraduate degree programs in the School of Business Administration is granted to upper division students (junior and senior level) only after completion of the pre-business administration curriculum; for a list of required courses, as well as the admission policies of the School, see page 49 .

Degree Requirements: Candidates for the bachelor's degree must complete 128 credits including satisfaction of the degree requirements stated on pages 49-51, as well as the management core courses and requirements for one of the specializations listed below. All course work must be completed in accordance with the academic procedures of the University and the School which apply to these degrees; see pages 5-35 and 49-53, respectively

## Management Core

The specializations in management and organization sciences are designed for students planning managerial careers in business, industry, and the public sector. Management theory, concepts and practice are presented. The major is oriented toward the development of skills basic to problem recognition and solution.

Students specializing in general management, operations management, human resource management/labor relations, and entrepreneurship and small business management will complete the following core courses, and then select from the designated courses in the area of specialization listed below.

## General Management

This specialization focuses on the overall skills required of managers. It is the broadest of the four specializations, providing knowledge and skills in planning, decision making, human resource management, operations management, and the management of small businesses. Students complete the following:

| Managing the Small Business |  |
| :---: | :---: |
| MGT 574 | .... Collective Bargaining |
| MGT 667. | s in Operations Management I |

Plus one other management and organization science course at the 300 level or higher.

## Entrepreneurship and Small Business Management

This specialization provides the knowledge and skills needed to create a successful new business venture (entrepreneurship) and to manage effectively in an established small business. The specialization is applications-oriented, with an emphasis on problem solving and decision making. It is designed for students who plan to become entrepreneurs or who plan to work in a smaller organization. Students complete the following:

| MGT 565 | The Entrepreneur and Venture Creation |
| :---: | :---: |
| MGT 566 | ............ Managing the Small Business |
| MGT 567 | neurship/Small Business Field Studies |

Plus one undergraduate business course approved in advance of student course registration by the faculty adviser for the entrepreneurship and small business management specialization. Examples of such courses are:

| A | Taxes on Income |
| :---: | :---: |
| ACC 553. | Business Law II |
| FBE 635. | Real Estate Finance |
| FBE 637. | Risk Management |
| MGT 574 | Collective Bargaining |
| MKT 547 | .. Industrial Marketing |
| MKT 570 | ..Retail Management |
| MKT 644 | ...Sales Management |

Students intending to pursue this specialization should contact Professor John G. Maurer (577-4517 or $577-4515$ ) prior to enrolling in any major classes.

## Operations Management

The operations management specialization prepares the student for a career as a production or operations manager. It provides knowledge and skills (both qualitative and quantitative) to solve management problems relating to work-flow planning, scheduling, quality control, inventory control, and productivity. Students complete the following:

ACC 516
Cost Accounting
MGT 667 .............................................................. Models in Operations Management i
MGI 696 Models in Operations Management II

Plus one of the following:

* MGT 695 ........................................................................................................................................................... Businar in Managess Logistics


## Human Resource Management and Labor Relations

This specialization prepares students for positions in human resource management and/or labor relations in a variety of public and private sector organizations, including business, labor, non-profit enterprises and government. Students complete the following:

|  |  |
| :---: | :---: |
| MGT 577 | Advanced Personnel Management |
| Plus two of the following: |  |
| MGT 670 ....................................................... Labor Relations in the Public Sector |  |
| MGT 674 | . Administering the Labor Agreement |
| MGT 678 | ..Current Issues in Employee Relations |
| MGI 695 | Seminar in Managem |

# COURSES OF INSTRUCTION ${ }^{1}$ (MGT) 

## 450. Business Administration Co-op Assignment. (ACC 450) (FBE 450) (MKT 450). Cr. 0

Offered for S and U grades only. No credit toward degree. Must be elected by Professional Development Co-operative Program students during work semester. Opportunity to put theory into practice on the job. Students will normally be assigned to cooperating business organizations for internship periods of one semester.
490. Directed Study in Management. Cr. 1-3(Max. 6)

Prereq: 2.75 cumulative h.p.a.; written approval on proposal form prior to registration; consent of major chairperson. Advanced readings and research or tutorial under the supervision of a faculty member in areas of special interest to student and faculty member.
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.

## 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.
560. Introduction to Production Management. Cr. 3

Prereq: CSC 100, FBE 330 or ECO 410 , and MGT 550 or MGT 559, 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: FBE 330 or ECO 410, and MGT 550 or MGT 559 or MGT 660, and 552 or 662 or consent of instructor. Analysis of managerial decision processes and the nature of decisions. Examination of

[^7]conditions under which decisions are made. Factors affecting decision problems. The role of quantitative methods in the analysis of decision problems.

## 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.
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.
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.

## 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.
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 businesi persons; corporate governance; assessment of social performance; contemporary issues.

## 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. An 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.
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.
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.
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.
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.
695. Seminar in Management. Cr. 3

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


Office: 300 Prentis Building

Chairperson: Edward A. Riordan

## Professors

H. Webster Johnson (Emeritus), J. Patrick Kelly (K mart Chair in Marketing), Fred W. Morgan, Edward A. Riordan

## Associate Professors

Ishmael P. Akaah, Hugh M. Cannon (Adcraft Club/Leonard Simon-Larry Michelson Professor in Advertising), Mary S. Irwin (Emerita), George C. Jackson, Leon R. Klein (Emeritus), James T. Low, Ferdinand F. Mauser (Emeritus), John J. Rath (Emeritus), Jone M. Rymer, Louis L. Stern, Attila Yaprak

## Assistant Professors

Theodore C. Alex, John D. Beard, Francis J. Brown (Emeritus), C. Min Han, Alice Herge (Emerita), M. Christine Lewis, Jeffrey J. Stoltman, David L. Williams

## Degree Programs

## Bachelor of Arts in Business Administration with a major in Marketing

## Bachelor of Science in Business Administration with a major in Marketing

## Bachelor's Degrees

Admission Requirements: Admission to undergraduate degree programs in the School of Business Administration is granted to upper division students (junior and senior level) only after completion of a pre-business administration curriculum; for a list of required courses, as well as the admission policies of the School, see page 49.
DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 128 credits including satisfaction of the degree requirements stated on pages 49-51, as well as the marketing core courses and requirements for one of the specializations listed below. All course work must be completed in accordance with the academic procedures of the University and the School which apply to these degrees; see pages 5-35 and 49-53 respectively.

## Marketing Core

The specializations in marketing are designed for students planning careers in advertising, public relations, research, retailing, sales management and logistics management. The major provides the concepts and methods by which managers identify and solve the marketing problems and opportunities of either business or non-business organizations through market target, product, price, distribution and promotion decisions.

Students who major in marketing will complete the following three courses, and then select courses from their designated area of specialization:

MKT 545 Consumer Behavior
MKT 585 Promotion Strategy
MKT 641 Marketing Research and Analysis

## Advertising/Public Relations

This specialization is complementary to careers in a wide variety of businesses, institutions, agencies, or other organizations. It prepares students to assume responsibilities for the development, coordination, and implementation of advertisement and promotion of goods, services, images, issues, ideas, and people.

MKT 549
.. Principles of Advertising
MKT 646 Public Relations of Business
One course from a Departmental list (MKT 550 or 551 recommended)

## Business Logistics

This specialization focuses on the determination and selection of the most efficient and appropriate marketing intermediaries, including wholesalers and retailers, who move products from producers to consumers. It also emphasises the study of managing the movement of products within firms as well as through marketing channels.

MKT 560 . Transportation and Distribution Management
MKT 562 .. Business Logistics
One course from a Departmental list

## Sales Management

Successful sales managers are responsible for the overall organization of sales personnel. Students preparing for careers in this field become skilled in the management activities of selecting, training, motivating, supervising, evaluating and controlling an effective sales force. They also learn and apply effective market forecasting techniques and procedures.
MKT 548
Market Forecasting
MKT 644 .........................................................................................Sales Management
One course from a Departmental list

## COURSES OF INSTRUCTION ${ }^{1}$ (MKT)

## 450. (MGT 450) Business Administration Co-op Assignment. (ACC 450) (FBE 450). Cr. 0

Offered for $S$ and $U$ grades only. No credit toward degree. Must be elected by Professional Development Co-operative Program students during work semester. Opportunity to put theory into practice on the job. Students will normally be assigned to cooperating business organizations for internship periods of one semester.
490. Directed Study in Marketing. Cr. 1-3(Max. 5)

Prereq: 2.75 cumulative h.p.a. to be eligible; written approval on proposal form prior to registration; consent of chairperson of student's major department. Advanced readings and research or tutorial under the supervision of a faculty member in areas of special interest to student and faculty member.
530. Marketing Management. (Dsc: 1.5; Let: 1.5). 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.

[^8][^9]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.
535. Marketing Analysis and Decision Making. $\mathbf{C r} 3$

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.
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.
547. Industrial Marketing. $\mathbf{C r} \mathbf{3}$

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.
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 forcasting 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 advertisments. Exercises in writing, criticizing, testing, and revising magazine, newspaper, radio, television, outdoor and direct mail advertisments.

## 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.
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.
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.
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.

## 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.
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.
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.
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.


## College of Education

## Foreword

The College of Education at Wayne State University is located in, and serves the needs of, one of the nation's largest metropolitan areas. Thus, the College reflects the dynamic character of urban life, and, in its concern with urban problems, places great faith in education as the means by which human circumstances can be improved. To this end, the College prepares teachers who have the commitment and competence to help young people achieve dignity, preserve individuality, develop democratic values, and find self-fulfillment.

Professional laboratory experiences are an important aspect of the teacher training program; they bring the prospective teacher face-to-face with the realities of the classroom, the school and the community, as well as provide opportunities for participation in the study, research and analysis of contemporary educational problems. To meet the needs of our programs, excellent professional resources are available in the other colleges, schools and divisions of the University, and in numerous school districts throughout the metropolitan Detroit area.

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 prospective teacher many opportunities for developing a high level of teaching competence. Problems generated in our urban society are complex, and those related to education are no exception. Yet, the opportunities for curriculum innovation, experimentation and leadership have never been greater.

## Accreditation

The programs of the College of Education have been accredited by the National Council for Accreditation of Teacher Education since 1954. The College has been reaccredited regularly since that time. Full accreditation for its programs was again granted in 1984 for a seven-year period. In addition, Wayne State University is accredited by the North Central Association of Colleges and Secondary Schools.

## Degrees and Certificates

## Bachelor of Arts in Education <br> with majors in the following areas:

Art Education
Business Education
Distributive Education
Elementary Education
English Education-Secondary
Family Life Education
Foreign Language Education
Health Occupations Education
Industrial Education
Mathematics Education
Nursery School Education (Teaching Endorsement only)
Physical Education
Science Education
Social Studies Education-Secondary
Special Education-with concentrations in
Speech Impaired
Mentally Impaired
Visually Impaired
Speech Education-Secondary

## Bachelor of Science in Education with majors in the areas listed above

## Bachelor of Science in Recreation and Park Services ${ }^{1}$

## Certificate in Health and Fitness Management

*Master of Arts in Teaching Degree Majors
Elementary Education
Bilingual-Bicultural Education
Elementary Education
Science Education
Secondary Education
Bilingual-Bicultural Education
English Education
Foreign Language Education
Mathematics Education
Science Education
Social Studies Education
Vocational Education
Business Education
Distributive Education
Family Life Education
Health Occupations Education
Industrial Education

## * Master of Arts Degree with majors in <br> Counseling <br> Recreation and Park Services <br> School and Community Psychology <br> Sports Administration <br> Vocational Rehabilitation Counseling <br> * Master of Education Degree with majors in

Adult and Continuing Education
Art Education
Bilingual-Bicultural Education
Counseling
Educational Leadership
Educational Psychology
Educational S̉ociology
Elementary Education
Early Childhood Education
Language Arts and Reading
Literature for Children
Mathematics Education
Science Education
Social Studies Education
English Education-Secondary
Evaluation and Research
Foreign Language Education-Secondary
Foreign Languages
Teaching English as a Second Language
Health Education
History and Philosophy of Education
Instructional Technology
Mathematics Education
Physical Education
Preschool and Parent Education
Reading
Science Education
${ }^{1}$ This is a degree program only and does not lead to teacher
certification.

* For specific requirements, consult the Wayne State University Graduate
School Bulletin.

Social Studies Education
Special Education
Emotionally Impaired
Gifted Child Education
Learning Disabilities
Visually Impaired
Vocational Education
Business Education
Distributive Education
Family Life Education
Industrial Education

* Education Specialist Certificates with majors in

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

* Doctor of Education and Doctor of Philosophy degrees with majors in

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

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

## Normal Program Load

The normal undergraduate student load is sixteen credits per semester. Only in exceptional cases is a student allowed to elect a heavier program. Approval of the adviser and authorization by the Director of the Division of Academic Services must be secured in those cases where the student petitions to carry more than eighteen credits within a full semester.

If a significant portion of a student's time is spent in outside work, corresponding adjustments must be made in his/her college schedule. Undergraduate students who are working full time may elect a maximum of eight credits with approval of the adviser.

## Readmission

## Following an Interruption in Residence

Undergraduate students whose attendance at Wayne State has been interrupted for three or more years will be required to apply at the College of Education Division of Academic Services for readmission to the College. Deadline dates for such applications are the same as those for regular admission to the College. In instances of prolonged absences of five years or more, it may be necessary to revalidate credits, either through examinations or refresher courses, within the student's major and the professional education sequences.

## Attendance

Regularity in attendance and performance is necessary for success in college work. Although there are no officially excused absences as far as College policy is concerned, 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.

## Transferred Credits and Residence Requirements

College credits earned in accredited institutions other than Wayne State University may be transferred by an undergraduate to apply toward meeting requirements for degrees and teaching certificates in the College, provided (1) the student has been accepted as a matriculated student in the College, (2) the grades received in courses where transfer is desired have been satisfactory, and (3) credits so earned are applicable to the student's curriculum.

In general, a maximum of fifteen credits may be earned by correspondence and extension courses and applied toward an undergraduate degree.

[^10]Weekend College (College of Lifelong Learning): Weekend College credit may be used toward a College of Education degree; however, it does not count toward fulfiliment of major or minor requirements.

An applicant for a degree from the College must complete at least thirty credits as a registered student in the College.

During the senior year, not more than ten transfer credits may be accepted. The student must be in residence during the semester in which he/she completes requirements for graduation.

When the student has a degree from an accredited institution and is meeting the requirements of the College for a Michigan Provisional Teacher's Certificate, some credits toward the certificate may be accepted by transfer but at least fifteen credits must be completed at Wayne. ${ }^{1}$

## Probation and Withdrawal

If, at any time, an undergraduate's scholastic average falls below 2.0 , the student is automatically placed on probation. If the general average is acceptable but work in professional courses, especially in student teaching is unsatisfactory, the student may be 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.


## ACADEMIC SERVICES

## Office: 489 Education

Director: James Boyer<br>Undergraduate Programs: Mary Manion

Graduate Programs: Stuart Itzkowitz, Toni Nicholas

Teacher Certification: Dolores Stevens
Education Placement: R. Duane Peterson

## Purposes

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

The University advisory staff provides a thorough program of advising for the freshman and sophomore students enrolled in the pre-teaching curriculum prior to their transfer to the College of Education at the beginning of the junior year.

The Student's Adviser: Each student admitted to the College at the undergraduate level and seeking a degree and 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.

[^11]
## 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, 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
Assistant Dean, Administration
Room 441, Education Building; 577-1620
Assistant Dean, Research
Room 421, Education Building; 577-8282
Director, Academic Services
Room 489, Education Building; 577-1600
Division Administrator, Administrative and Organizational Studies
Room 241, Education Building; 577-0902
Division Administrator, Teacher Education
Room 241, Education Building; 577-0902
Division Administrator, Theoretical and Behavioral Foundations
Room 323, Education Building; 577-1721
Division Administrator, Health, Physical Education and Recreation
Room 261, Matthaei Building; 577-4249
Mailing address for all offices:
Wayne State University
5425 Second Avenue
Detroit, Michigan 48202

## HEALTH, <br> PHYSICAL EDUCATION, AND RECREATION

Office: 261 Matthaei Building
Division Administrator: Sarah J. Erbaugh, Interim Director

## Associate Professors

David B. Blievernicht, Vernon Gale, Frank McBride, Diane Pick, Robert Samaras

## Assistant Professors

Amos O. Aduroja, Sarah J. Erbaugh, Brian R. Goslin, Avanelle Kidwell, Peter A. Roberts, William W. Sloan, John C. Wirth

## Lecturers

Doris Finlay, Mary W. Paonessa, Molly Sapp

## Degree and Certificate Programs

## Bachelor of Science in Education-

 with a major in physical educationBachelor of Arts in Educationwith a major in physical education
Bachelor of Science in Recreation and Park Services -with specializations in recreational programming and therapeutic recreation

## Certificate in Health and Fitness Management

* Master of Education-with a major in health education and specializations in school health, and clinical/community health
* Master of Education-with a major in physical education and specializations in science of human movement, and educational theory and practice
*Master of Arts-with a major in recreation and park services and specializations in recreational administration and therapeutic recreation
* Master of Arts in Education-with a major in sports administration and with emphases in interscholastic athletic administration, intercollegiate athletic administration, professional sports administration, and commercial sports administration

Health, physical education, and recreation, as integral parts of a general education, focus attention upon the vital needs of the human being to acquire knowledge, skills and attitudes necessary for regular participation in healthful living and physical and leisure-time activities. The decreased demands for physical vigor, as well as the increased tensions caused by the technological progress of the modern era, demand a scientific approach to these vital phases of well-being.

The Division of Health, Physical Education, and Recreation 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. Students are advised to consult their academic advisers in their respective schools or colleges.

## Bachelor of Science in Education with a major in Physical Education

Admission Requirements (Junior College Level): All students who enter the University directly from high school, or transfer to Wayne from other colleges with less than fifty-three semester credits and who declare their intent to major in physical education are admitted directly to the College of Education at the junior college level; for requirements, see page 83. Upon application, students should request admission into the physical education major program.

Students already admitted into any other college of Wayne State University with less than fifty-three credits must apply for transfer to the physical education program at the junior college level through the College of Education, Room 489 Education Building. (Forms for transfer of college are available at either Room 266 Matthaei or Room 489 Education Buildiing.)

Senior College Level: Upon completion of a minimum of fifty-three semester credits at an accredited institution, students must apply to the college of Education (Room 489 Education Building) for admission to the senior college professional program in physical education. Applicants who have completed fifty-three semester credits or more of college work at some institution other than Wayne State must apply to the University Office of Undergraduate Admissions.

Eligibility for admission to senior college professional work is based on the following criteria:

1. Satisfactory completion of fifty-three credits.
2. An overall honor point average of 2.5 or above.
3. Satisfactory completion of the University English Proficiency Examination and Mathematics Proficiency Examination.
4. Satisfactory completion of English 102 or an acceptable equivalent.
5. Personal attributes most desirable for teachers including a high standard of moral conduct and an understanding of the nature of responsible citizenship.
6. Physical and emotional health commensurate with the demands of the physical education profession. All students entering the college of Education are required to complete a T.B. test prior to beginning course work in the College.

Post Degree: Students should follow the procedures for application to senior college and file a Post Degree Form in Room 489 Education Building.

DEGREE REQUIREMENTS: A total of 124 credits are required for completion of this degree: forty credits in general education (including satisfaction of the University General Education requirements, see page 20); a minimum of fifty credits in physical education; fourteen credits in health, and anatomy and physiology; and a minimum of twenty-three credits in education courses for the teacher certification program or a minimum of twenty credits in education courses for the other specialized options (see curricula below). Students in the teacher certificate program must develop a minor or a second major. Electives to complete the 124 credit requirement may be used in any area. All course work must be completed in accordance with the academic procedures of the College of Education and University governing undergraduate scholarship and degrees; see pages 69-70 and 84, and $5-35$, respectively. All physical education classes must be completed with grades of ' C ' or better to meet the Departmental graduation requirements. Course changes may occur through periodic curriculum revision and students are urged to consult assigned advisers prior to each registration period to insure that all requirements are met.

## HEALTH FOUNDATION SEQUENCE

## (Required with each option)

|  | Credits |
| :---: | :---: |
| ANA 301 - Introduction to Human Anatomy | $\ldots$ |
| HEA 231 - Dynamics of Personal Health. |  |
| HEA 233 - First Aid and CPR. |  |
| PSL 322 - Fundamentals of Phys |  |

## PHYSICAL EDUCATION CORE <br> (Required with each option)

PE 191 - Professional Perspectives in Physical Education. .....  2
PE E 340 - Life Span Motor Development ..... 3
PE 354 - Cultural Foundations of Physical Education. ..... 3
PE E355-Motor Learning and Contro .....  3
PE 358 - Kinesiolog .....
PE 550 - Evaluation and Measurement in Health \& Physical Education ..... Total: 20
TEACHING CERTIFICATION OPTION
PE 258 - Physical Education in Secondary Schools I. .....  4
PE 259 - Physical Education in Secondary Schools II. .....  4
PE 341 - Physical Education for Elementary School Children I. ..... 3
PE 342 - Physical Education for Elementary School Children II .....  3
PE 344 - Theory and Practice of Acquatics: Water Safety Instructor ..... 4
PE E 540 or PE 541 or PE 542

- Introduction to PE for Exceptional Children \& Adolescents. .....  3
- P E for the Exceptional Student: Methods \& Materials. .....  3
- Sports \& Recreation for Exceptional Children \& Adolescents .....  3
PE Electives .....  2
Total: 23
Physical Education Activity
PEA 119 - Lifesaving .....  2
PEA electives .....  7
Professional Education Requirements
PE 350 - Instructional Methods in Physical Education. ..... 4
P E 441 - Student Teaching and Seminar I .....  .5
PE E42 - Student Teaching and Seminar II ..... 5
EDP 331 - Educational Psychology .....  3
RDG 443 - Teaching Reading in Subject Matter Areas .....  3
TED 516 - Analysis of Secondary School Teaching .....  3


## EXERCISE SCIENCE OPTION

PE 632 - Fitness Leadership .....  3
PE 256 - Individual Problems in Physical Education. .....  4
P E 435 - Internship in Fitness .....  4
P E 533 - Principles of Athletic Training .....  3
HE 565 - Health and the Aging Process. .....  3
Electives .....  3
Total: 20
Physical Education Activity Electives ..... 10
Professional Education Requirements
EDP 331 - Educational Psychology .....  3
EER 561 - Foundations in Evaluation and Research .....  2
TED 602 - Computer Applications in Teaching .....  3
Electives ..... 12
Total: 20
ADULT FITNESS OPTION
P E 256 - Individual Problems in Physical Education. .....  4
PE 435 - Internship in Fitness .....  4
P E 534 - Prevention and Care of Athletic Injuries .....  3
PE 632 - Fitness Leadership .....  3
HE 565 - Health and the Aging Process. .....  3
Electives .....  3
Total: 20
Physical Education Activity Requirements
PEA 128 or PEA 129 or PEA 130

- Lifesaving Fitness Activities .....  2
- Aerobic Dance .....  2
- Aerobics/Running: Cardiorespiratory Conditioning .....  2
PEA 177 - Personal Defense .....  1
PEA 119 - Lifesaving. .....  2
PEA Electives .....  .6
Total: 10
Professional Education Requirements
Education Electives .....  9
Other Electives ..... 11Total: 20


## Bachelor of Arts in Education

The admission and degree requirements for the Bachelor of Arts are similar to those for the Bachelor of Science degree (as described above), with the exception that the student's work must include twelve credits in a foreign language. If two or more units of a foreign language are offered for admission, this requirement may be satisfied by completing eight credits in the same language beyond the freshman level.

## Student Teaching

The following requirements apply to senior college students in the teacher certification program.

1. Students must complete two semesters of student teaching/seminar, elementary and secondary levels.
2. Students must obtain forms from their academic adviser and make an appointment with the coordinator of student teaching. Completed applications MUST be turned in within the appropriate application periods in order to reserve a student teaching assignment. Student teaching application periods are as follows:

Term I (Fall Semester): October 1 to January 31 of the preceding year.
Term II (Winter Semester): April 1 to July 31 of the preceding year.
After submitting the application to the college of Education, students must make an appointment with the physical education student teaching coordinator for placement. Students must have a satisfactory health record and a tuberculosis test within six months before the assignment begins.
3. Students must meet the following conditions to qualify for student teaching:
a) Ninety-two credits must be completed (incomplete grade credits will not count).
b) ' $C$ ' or better grades must be earned in all physical education courses taken in the Fall of 1986 or thereafter.
c) A 2.5 physical education major honor point average must be earned in all professional Physical Education courses, as well as: PEA 119, ANA 301, and PSL 322.
4. The following courses must be satisfactorily completed. (An incomplete grade does not constitute satisfactory completion.): ANA 301, PSL 322, EDP 331, TED 516, P E 191, 258, 259, 340, 341, 342, $350,355,357$, and 358 .
5. The following certifications are required:
a) Current Red Cross Lifesaving Certificate.
b) Current Water Safety Instructor Certificate must be completed before the secondary student teaching contact.

## Teaching Certification

Students who complete all of the Physical Education Department and College of Education requirements may apply for a Michigan secondary Provisional Teaching Certificate at the same time they apply for graduation. This certificate qualifies the holder to teach grades K-12 in his/her major and grades 7-12 in his/her minor subject. Initial certification is provisional for a six-year period; see pages 96-97 of this bulletin for further information or contact the College of Education.

## Minor in Physical Education

Future teachers seeking a teaching/coaching position may find the physical education minor a valuable program option. This minor (listed below) may be elected by students completing any teaching major, however, students must complete the minor at the level appropriate for their particular teaching major, i.e., secondary majors complete the secondary course requirements, and elementary majors complete the elementary course requirements.

Students not involved in a teacher certification program may elect a physical education minor and should consult a Departmental adviser for guidance.

PHYSICAL EDUCATION CORE (Eight Credits Required, including P E 191)

|  | Credits |
| :---: | :---: |
| PE 191 - Professional Perspectives in Physical Education | . |
| PE 340 - Life Span Motor Development | 3 |
| P E 354 - Cultural Foundations of Physical Education..... | 3 |
| P E 355 - Motor Learning and Control. |  |

* PE 357 - Physiology of Exercise .....  3
* P E 358 - Kinesiology .....  3
PE 550 - Evaluation and Measurement in Health \& Physical Education ..... 3
SPECIALIZED TEACHING CORE (One of the following op-
tions requred: 6-8 credits)
Secondary
PE 258 - Physical Education in Secondary Schoois 1 .............................................. 4
PE 259 - Physical Education in Secondary Schools II .....  .4
Elementary
PE 341 - Physical Education for Elementary School Children I ..... 3
PE 342 - Physical Education for Elementary School Children II .....  3
ELECTIVES: PEA and PE Courses. ..... 4-6
Teaching Physical Education

for the Handicapped

A program leading to State endorsement in this speciality is available to physical education and special education majors. The program requires thirteen credits in approved special education courses and eleven to fifteen credits in adapted physical education courses. To be admitted to this program the student must possess a valid Michigan teaching certificate in physical education or any area of special education, or be enrolled in a teacher certification program. Endorsements will not be granted without a certificate in physical education or special education.

## ENDORSEMENT REQUIREMENTS



Total: 24-28

## Health and Fitness Management <br> Certification


#### Abstract

The certificate program in health and fitness management is a twenty-four credit post-baccalaureate curriculum designed to prepare entry-level personnel for the planning, implementation, and management of health and fitness programs in business industry, or a community setting. The emphasis is a multi-disciplinary approach involving health, physical education and recreation and the departments representing these areas of study within the University. This allows for flexibility of specialization in the areas of health, finess leadership, gerontology, and leisure activities.


Admission Requirements: Applicants for this program must hold a bachelor's degree from an accredited institution, and candidates will be enrolled in a post-bachelor status in the University. The minimum honor point average for admisson is 2.6 ; however, conditional admission may be granted to applicants whose honor point average is between 2.25 and 2.59. Certificate admission application forms are
available from the University Admissions Office.
CERTIFICATE REQUIREMENTS consist of twenty-four credits as outlined below and completed with a minimal honor point average of 2.5 .
REQUIRED CORE (Fourteen Credits)
RP 260 - Principles of Leadership and Recreation Programming ..... 4
PE 357 - Physiology of Exercise .....  3
PE 632 - Fitness Leadership ..... 3
HE 642 - Introduction to Health Education Program Design. .....  3
RP 465 or P E 641

- Recreation and Park Administration 3
- Introduction to Sports Administration .....  3
PE 435 or R P 562
- Internship in Fitness. .....  4
- Advanced Field Work .....  4


## Bachelor of Science

## in Recreation and Park Services

Undergraduate degrees in recreational leadership were first offered at Wayne State University in 1950, and graduate degrees in 1954. Non-teaching degrees are currently awarded through the College of Education. Students majoring in this discipline are prepared for careers in city/county recreation departments, youth agencies, military recreation, outdoor education centers and camps, senior centers, physical rehabilitation centers, hospitals, substance abuse programs, and long term care facilities, among others. All majors are members of the Student Recreation and Park Association. Twice yearly, Professional Development Seminars are sponsored by the Association and are open to students and professionals in metropolitan Detroit.

Admission Requirements: Prospective Recreation and Park Services students should apply through the regular admission procedures to the University Undergraduate Admissions Office, requirements for which are stated on page 13 of this bulletin. Students entering directly from high school, or with less than fifty-three semester credits from another college or university, or transferring from another unit of Wayne State University are admitted to the College of Education at the junior college level. Upon completion of fifty-three credits of college work with a minimum overall honor point average of 2.0 , students may apply for senior college status in the College of Education. All students intent upon pursuing a major in Recreation and Park Services must make arragements for a personal interview with the undergraduate coordinator in this department prior to admission into the program. For further information, students are urged to contact the Department; telephone: 577-4269.

DEGREE REQUIREMENTS: Candidates for the Bachelor of Science in Recreation and Park Services must complete 124 credits, sixty-two of which are in general and professional education (including satisfaction of the University General Education Requirements, see page 20), and sixty-two credits in Recreation and Park Services courses. All course work must be completed in accordance with the academic procedures of the College of Education and the University governing undergraduate scholarship and degrees; see pages 69-70 and 84, and 5-35, respectively. Since changes in courses may occur through periodic curriculum revision, students should consult with their advisers prior to each registration period to insure that all requirements are met. An overall honor point average of 2.0 and a 2.5 average in Recreation and Park Services courses must be attained for graduation. All R P courses must be completed with grades no lower than ' $C$ '.

[^12]The following general and professional education courses (which include the University General Education Requirements) are required of all majors:
COMMUNICATION SKILLS (Ten Credits)* ..... Credits
ENG 102 - ( $8 C$ ) Introductory Coll lege Writing. ..... 4
ENG 301 - (IC) Intermediate Writing
SPB 101 - ( $0 C$ ) Oral Communication: Basic Speech .....  2
UGE 100 - (GE) Introduction to the University and its Libraries. .....  .1
HUMAN INTERACTION(Thirteen Credits)
PSY 101 - (LS) Introductory Psychology .....  .4
SPC 520 - Group Communication and Human Interaction. .....  3
Education Electives (chosen with adviser approval) .....  6
NATURAL SCIENCE (Eight to Eleven Credits)

- BIO 103 or BIO 105
- (LS) Human Environmental Biology .....  3
- (LS) An Introduction to Life. .....  3
${ }^{2}$ ANA 301 -- Introduction to Human Anatomy. .....  4
${ }^{2}$ PSL 322 - Fundamentals of Physiology .....  .4
${ }^{3}$ AST 201 or GEL 101 .....  4
- (PS) Geology: The Science of the Earth
- (PS) Geology: The Science of the Earth
- (PS) Descriptive Astronomy
- (PS) Descriptive Astronomy .....  .4 .....  .4
GENERAL EDUCATION (Nineteen to Twenty-three Credits)
${ }^{3}$ P S 101 - (Al) American Government. .....  4
${ }^{3}$ HIS 140 or HIS 195 - (HS) The World since 1945 ..... $\ldots . .3$
- (HS) Society and the Economic Transition ..... 3
${ }^{3}$ SOC 200 or SOC 202
- (SS) Understanding Human Society .....  3
- (SS) Social Problems. .....  3
${ }^{3}$ ANT 315 or ANT 352
-(FC) Anthropology of Business .....  3
- (FC) Stability and Change in Contemporary Africa. .....  3
${ }^{3}$ HUM 102 - (VP) Experiencing the Arts .....  3
PHI 101 - (PL) Introduction to Philosophical Systems. ..... 3
Electives.. ..... 4
EVALUATION AND MEASUREMENT (Three Credits)
P E 550 - Evaluation and Measurement in Health \& Physical Education .....  3
HEALTH AND PHYSICAL EDUCATION (Five Credits)
HEA 233 - First Aid and CPR ..... 3
PE 340 - Life Span Motor Development .....  2


## COMPETENCY EXAMINATIONS

Competency must be demonstrated in subject areas indicated by passing the following examinations: English Proficiency, Critical/Analytical Thinking, Computer Literacy, and Mathematics.

* Additional course work may be needed for students having difficulty in
this area.
${ }^{1}$ Required for the Recreation Programming Option only.
${ }^{2}$ Required for the Therapeutic Recreation Option only.
${ }^{3}$ Or other elective fulfilling University General Education Group
Requirement.

Major Requirements: Concurrent with the general and professional education requirements, students must complete sixty-two credits in Recreation and Park Services courses consisting of the following core courses, a concentration in recreation programming or therapeutic recreation, and nine elective credits. Attendance at two departmental professional Development Seminars is also required prior to graduation.

## CORE REQUIREMENTS (Thirty-eight Credits)



Therapeutic Recreation (courses marked with an asterisk are required)

R P 563 - TR: Program Development................................................................ 3
R P 565 - Recreation Services for the Aging................................................... 3
RP 598 - TR: Mental Health....................................................................... 3
RP 663 - TR: Program Implementation......................................................... 3
R P 693 - TR: Physical Disabilities................................................................ 3
*RP 698 - Leisure Education ......................................................................... 3

## R P ELECTIVES (Nine Credits in any R P Courses)

## Scholarships and Financial Aids

Merit scholarships, loans, work-study, and other types of financial aid are available through the University and interested students should contact the Office of Scholarships and Financial Aids (see page 19). Several scholarships are also awarded each spring, for the following academic year, by the Michigan Recreation and Park Association to students with financial need who are majoring in recreation in any college or university within the State. Applications are available from a Departmental adviser after January 1 of each year.

## Health Education Minor

Health education, a relatively new field of specialization, plays an educational leadership role in the promotion of health and the prevention of disease, encouraging the introduction of comprehensive health education curricula into schools and the development of health education programs in the clinical setting, community, and workplace. A minor in health education provides opportunities for involvement in school health education, as well as an introduction to a career as a

[^13]health education professional in a clinical or community setting.
In the State of Michigan, a commitment has been made to a comprehensive health education curriculum, the Michigan Model. Promoted by the state departments of public health and education, the Michigan Model has been adopted by an increasing number of schools. The minor in health education qualifies individuals for a health endorsement which allows one to teach health in schools employing the Model curriculum. In addition, a minor in this field may be combined with nursing, or with a professional major in allied health or health science fields, and provides a pedagogical component in the health professions.

The requirements for a minor in health education include courses in three areas: 1) basic health science; 2) health aspects of the human environment; and 3) professional health pedagogy.

MINOR REQUIREMENTS: A total of twenty-four credits is required for the completion of the health education minor, as follows:


## COURSES OF INSTRUCTION ${ }^{1}$

Driver Education (D E)

## 573. Teaching Driver Education and Traffic Safety. (TED 594). Cr. 3 <br> 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.
575. Seminar in Driver Education and Traffic Safety. (TED 575). Cr. 3
Prereq: DE 574. Behavioral, administrative, and professional aspects of the teaching role in driver and traffic safety education.
(W,S)

## Health (HEA)

## 231. Dynamics of Personal Health. Cr. 2-3

Critical health issues relevant to college students today; application to personal and family needs. In-depth study of selected health issue when offered for three credits.
232. Dynamics of Community and Environmental Health. Cr. 2 Ecological factors associated with human health; environmental pollution and other health problems of communities; organized efforts to deal with them. Field trips.
233. First Aid and CPR. Cr. 3

Material fee as indicated in Schedule of Classes. Theory and practice. Students can qualify for standard national certificates in first aid and CPR.
337. (P E 357) Physiology of Exercise. Cr. 3

Prereq: six credits in human anatomy and physiology. Material fee as indicated in Schedule of Classes. Human functions and their response to physical stress.

## 338. (P E 358) Kinesiology. Cr. 3

Prereq: six credits in human anatomy and physiology. Material fee as indicated in Schedule of Classes. Application of knowledge of human physical structure and function in the analysis and appreciation of human movement; theory and practice of human movement analytic techniques.

## 390. Individual Problems in Health. Cr. 1-3(Max. 03)

Prereq: HEA 231 or 232 and consent of instructor. Solving a specific personal health problem or studying a specific community health problem under the guidance of divisional staff.
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.
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 an athletic training room.
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.
(W)

## Health Education (HE)

330. Health of the School Child. (TED 430). Cr. 3

Health status and problems of school age children. Role of teacher in health promotion and protection; teacher observation and classroom first aid for health problems.
333. School Health Education. Cr. 3

Prereq: HE 330. Principles, curriculum development, and techniques in teaching health at elementary and secondary school levels.
434. Reproductive Health Education. Cr. 3

Program planning, curriculum development and classroom teaching strategies in the areas of human sexuality, reproductive health and venereal disease; satisfies Michigan Department of Education requirement for qualification to teach in these areas.
(W)
480. Fieldwork in Health Education. Cr. 1-3(Max. 3)

Prereq: professional courses in health education and consent of adviser; coreq: student teaching experience. Offered for S and U grades only. Seminar attendance required twice per semester. Observational experience in health education and implementation of health education unit by student in a variety of settings. Contact departmental chairperson before semester begins.
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.
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.
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.
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.
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.
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.
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.

## Physical Education (P E)

## 191. Professional Perspectives in Physical Education. Cr. 2

Required upon admission to the professional curriculum. Introduction to the profession and academic dimensions of physical education.
251. Officiating Techniques. (PEA 210). Cr. 1-2(Max. 4)

Prereq: consent of adviser and chairperson. (Max.4) Development of competence in officiating selected team and individual sports: basketball, football, softball, swimming, gymnastics, and track and field.
(F,W)
256. Individual Problems in Physical Education. Cr. 1-3(Max. 4) Prereq: consent of adviser and chairperson. Solving a specific problem under the guidance of the divisional staff.
(F,W)
258. Physical Education in Secondary Schools I. Cr. 4 Open only to physical education majors, minors, and special education students. Skill development, methods and materials of teaching individual sports at the middle and high school levels, including classroom management and motivation, organization of personnel and use of facilities.
259. Physical Education in Secondary Schools II. Cr. 4 Open only to physical education majors, minors, and special education students. Skill development, methods and materials of teaching team
sports at the middle and high school levels, including classroom management and motivation, organization of personnel and use of facilities.
340. Life Span Motor Development. Cr. 2-3

Parks and Recreation majors elect two credits; Physical Education majors elect three credits. Study of change in motor behavior from infancy to older adulthood. Competency in: ability to formulate a developmental perspective, knowledge of changing behavior across life-span, knowledge of factors affecting motor development, ability to apply knowledge in instructional and recreational settings.

## 341. Physical Education for Elementary School Children 1. (DNC 382) (DNE 382). Cr. 3

Prereq: admission to senior college. A movement education approach which focuses on beginning movement concepts and skills utilized in teaching games, gymnastics and dance.
342. Physical Education for Elementary School Children II. (DNC 383) (DNE 383). Cr. 3
Prereq: P E 341 or equiv. Continuation of P E 341, focusing on more advanced movement and aesthetic concepts and skills. Investigation of individualized approaches which use movement themes, traditional dances, sport forms, and creative work in games, gymnastics and dance.
344. Theory and Practice of Aquatics: Water Safety Instructor. (PEA 120). Cr. 4
Prereq: PEA 119 or lifesaving certificate. Lifesaving, water safety and survival skills; instructional methods, program development, administration of aquatic programs; leads to Lifesaving and Water Safety Instructor certification.
(F, W)
350. Instructional Methods in Physical Education. Cr. 4

Prereq: admission to senior college. Planning for instruction in physical education with emphasis on unit and lesson planning, teaching styles, principles of motor learning and developmental curriculum planning.
(W)
354. Cultural Foundations of Physical Education. Cr. 3

Prereq: P E 191. Nature and methods of analysis of different kinds of philosophical problems as they arise in sport, dance and general physical education context; examination of the historical foundations and contemporary social significance of sport, dance and physical education.

## 355. Motor Learning and Control. Cr. 3

Prereq: ANA 301 or equiv. Study of motor skill acquisition and motor control with applications to physical education. Focus on cognitive processes and neural mechanisms which contribute to motor learning and control.
357. Physiology of Exercise. (HEA 337). Cr. 3

Prereq: PSL 322, ANA 301 or equiv. Material fee as indicated in Schedule of Classes. Physiological basis of human physical performance.
358. Kinesiology. (HEA 338). Cr. 3

Prereq: ANA 301, PSL 322 or equiv. Material fee as indicated in Schedule of Classes. Application of knowledge of human physical structure and function in the analysis and appreciation of human movement; theory and practice of human movement analytic techniques.
435. Internship in Fitness. Cr. 4

Prereq: P E 632, HEA 233. Experience in phases of assigned organization relative to health and exercise programs for various populations.
(F,W)
441. Student Teaching and Seminar I. (Fld: 15; Smr: 3). Cr. 5

Prereq: admission to student teaching as listed in physical education
handbook. Offered for S and U grades only. First experience in student teaching.
(F,W)
442. Student Teaching and Seminar II. Cr. 5

Prereq: P E 441 for students electing separate contacts; coreq: 441 for students electing double contact. Offered for S and U grades only.
(F,W)
452. Field Experience in Coaching. Cr. 2 (Max. 4)

Prereq: consent of adviser and department chairperson. Internship in two approved sports.

## 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.
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.

## 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. 3Prereq: 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.

## 542. Sports and Recreation for Exceptional Children and

 Adolescents. Cr. 3Prereq: 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 situations.

## 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.
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.
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.
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.
641. Introduction to Sports Administration. Cr. 3

Current categories of competitive sports and athletics indentified and analyzed to determine potential administrative positions in their structures and the qualifications necessary for each position.

## 654. Workshop in Physical Education and Athletics.

 Cr. 1-4(Max. 8)Teachers, school administrators and consultants working cooperatively on current problems in physical education and athletics.

## Physical Education Activity (PEA)

## 102. Individualized Skills Development Laboratory. Cr. 1-2(Max. 4)

Prereq: written consent of chairperson for non-varsity athletes. Varsity athletes may elect only once per year for one credit per sport during the term of competition. Physical education credit for significant development and improvement of skills and associated knowledge in activity areas beyond the general education curriculum of the Division.
(F,W)

## 103. Sports: Concepts and Conditioning. Cr. 2

Theoretical and practical aspects of conditioning for sport and recreational activities. Principles of skill and strength development, diet related to activity, physiological factors underlying fitness, and psychological and sociological dimensions of sport and recreation. Personal fitness assessment included.
110. Swimming: Elementary. Cr. 2 (Max. 4)

Fundamental skills and knowledge in aquatics for beginners.
111. Swimming: Continuing. Cr. 2 (Max. 4)

Prereq: basic swimming skill. Proficiency in all swimming strokes; beginning diving techniques; deep water skills and endurance. Distance swimming.
117. Scuba Diving. Cr. 2

Prereq: intermediate/advanced swimming skill required; certain physical conditions may require prior medical examination; student rents or provides own equipment. Theory and practice of the proper use of self-contained underwater breathing apparatus.
(F,W)
119. Lifesaving. Cr. 2

Prereq: advanced swimmer. Lifesaving and water safety procedures. Leads to lifesaving certification.
(F,W)

## 120. (P E 344) Theory and Practice of Aquatics: Water Safety

 Instructor. Cr. 2Prereq: PEA 119. Instructional methods and techniques in aquatics, water safety and survival; swimming program development; pool and waterfront administration and management. Can lead to American Red Cross Water Safety Instructor's Certificate.
(F,W)
127. Aquaerobics. Cr. 2 (Max. 4)

Program of exercise conducted in shallow water, seaigned to improve strength, flexibility, and cardiovascular fitness; includes prescription for future self-directed programs. Especially valuable for students in poor physical condition, or with certain illnesses and handicaps.
(Y)
128. Lifestyle Fitness Activities. Cr. 2

Program of exercise designed to improve strength, flexibility and cardiovascular fitness. Approach to overall physical fitness involving a pre- and post-program fitness evaluation and a personalized prescription for the improvement and continuing maintenance of well-being.
(F,W)

## 129. Aerobic Dance. Cr. 2 (Max. 4)

Rhythmic exercise designed to improve cardiovascular capability. Emphasis on popular dance routines. Includes theoretical components concerned with monitoring heart rate, significance of oxygen uptake, establishing appropriate aerobic training zones, and implications for cardiovascular health.
(F,W)
130. Aerobics/Running: Cardiorespiratory Conditioning. Cr. 2 (Max. 8)
Carefully controlled, personalized program activities designed to maintain or improve the level of cardio-respiratory conditioning of the participant; prescription for future levels of activity from the class experience.
131. Rock Climbing: Basic. Cr. 1

Prereq: good physical condition. Two Friday field trips required. Introduction to the basic principles and techniques of technical rock climbing. Field trips.
132. Archery. Cr. 2 (Max. 4)

Analysis and practice of skills, information on scoring, rules, tournament competition.
(F,W)
133. Badminton. Cr. 2 (Max. 4)

Analysis and practice of basic strokes, singles and doubles play, strategy, rule interpretation.
135. Pocket Billiards: Beginning. Cr. 2 (Max. 4)

Vendor's fee: \$10. Basic skills and technique; history, rules, equipment and game courtesy.
(F,W)
136. Billiards: Intermediate/Advanced. Cr. 2 (Max. 4)

Prereq: basic billiards skills. Vendor's fee: $\$ 10$. Analysis and practice of more advanced skills and strategies; introduction of 14.1 pocket billiards and other billiards games.
( $\mathrm{F}, \mathrm{W}$ )
138. Bowling. Cr. 2 (Max. 4)

Bowling lane rental fee: $\$ 20$. Analysis and practice of skills. Information on scoring procedures, rules, tournament play. (F,W)
140. Creative Relaxation. Cr. 2

Analysis and practice of creative relaxation as applied to sport performance and other life functions. (F,W)
141. Golf. Cr. 2 (Max. 4)

Analysis and practice of fundamentals focused on development of correct form in the use of different clubs. (F,W)
144. Gymnastics and Tumbling. Cr. 2 (Max. 8)

Analysis and practice of basic gymnastic techniques and events; floor exercise and apparatus.
( $\mathrm{F}, \mathrm{W}$ )

## 148. Yoga. Cr. 2 (Max. 4)

Yoga physical exercises to shape and strengthen the human body. Psychosomatic influences used to develop resistance against stress and to train the body and mind to relax. Utilization of autosuggestion to influence lifestyle.
(F,W)
150. Racquetball: Beginning. Cr. 2 (Max. 4)

Basic strokes, history, rules, equipment and game courtesy. Introduction to singles and singles game competition.
151. Racquetball: Intermediate/Advanced. Cr. 2 (Max. 8)

Prereq: basic racquetball skills. Advanced skills and techniques; singles and doubles game strategy; optional competition experience.
157. Squash. Cr. 2 (Max. 4)

Analysis and practice of racquet skills, court strategies, rule interpretation and officiating procedures.
(F,W)
160. Tennis: Beginning. Cr. 2 (Max. 4)

Analysis and practice of basic strokes, singles and doubles play, strategy, rule interpretation.
161. Tennis: Intermediate/Advanced. Cr. 2 (Max. 8)

Prereq: basic tennis skills. Advanced stroke instruction; practice of skills and strategies needed for tournament play.
( $\mathrm{F}, \mathrm{S}$ )
164. Weightlifting and Training. Cr. 2 (Max. 4)

Analysis and practice of approved lifting techniques and use of weight training for conditioning purposes.
166. Racquet Sports. Cr. 2 (Max. 4)

Students learn and play various racquet sports, including competitive badminton, pickleball, and soft tennis. Skill development and competition.
171. Fencing: Beginning. Cr. 2 (Max. 4)

Analysis and practice of skills, rules, strategy, conduct of competitive means.
( $\mathrm{F}, \mathrm{W}$ )
172. Fencing: Intermediate/Advanced. Cr. 2 (Max. 8)

Prereq: basic fencing skills.
174. Judo: Continuing. Cr. 2 (Max. 8)

Prereq: PEA 173 or equivalent experience. (Max. 4) This course builds upon basic knowledge of judo; it extends the student's repertoire of judo technique and emphasizes judo as a competitive sport. Continuation of PEA 173.
(F W)
175. Karate: Beginning. Cr. 2 (Max. 4)

Analysis and practice of fundamental skills; strategy and philosophy of karate as a method of personal defense and competitive sport.
176. Karate: Continuing. Cr. 2 (Max. 8)

Prereq: basic karate skills. Analysis and practice of more advanced skills including combination training, kumite, and kata. (F,W)
177. Personal Defense. Cr. 1

Personal defense theory, increased defense awareness, anticipation and avoidance of confrontation, basic self-defense skills and techniques.
( $\mathrm{F}, \mathrm{W}$ )
178. Tai Chi Chuan: Beginning. Cr. 2 (Max. 4)

An ancient Chinese exercise, Tai Chi is a series of postures and transitional movements, used to improve balance, strength, circulation, and relaxation.
(F,W)
179. Tai Chi Chuan: Continuing. Cr. 2 (Max. 8)

Prereq: PEA 173 or equivalent experience. This course builds on basic knolwedge of Tai Chi Chuan and ena bles students to refine their movement and understanding of this sport. Continuation of PEA 178.
(F,W)
182. Aikido: Beginning. Cr. 2 (Max. 4)

Analysis and practice of fundamental skills, movements and philosophy of Aikido as a modern martial art.
(F,W)

## 183. Aikido: Continuing. Cr. 2 (Max. 8)

Prereq: PEA 182. Analysis and practice of more advanced skills, techniques and philosophy of Aikido as a modern martial art. (F,W)
201. Basketball: Women. Cr. 2

Analysis and practice of skills, team play, strategy, rule interpretation.
202. Basketball: Men. Cr. 2

Analysis and practice of skills, team play, strategy, rule interpretation.
206. Volleyball. Cr. 2 (Max. 4)

Analysis and practice of skills, team play, strategy, rule interpretation.
210. (P E 251) Officiating Techniques. Cr. 1-2(Max. 4)

Prereq: consent of adviser and chairperson. Development of competence in officiating selected sports. Skills, signals, rules, and interpretation; personal preparation, officials' associations, supplementary officials; opportunity for certification; rule differences for men's and women's competition, where appropriate. Regularly scheduled for the following sports: baseball, basketball, football, volleyball; others as needed.
(F,W)

## Recreation and Park Services (R P)

## 260. Principles of Leadership and Recreation Programming. Cr. 4

Theories and dynamics of individual and group leadership; recreation programming for general and special populations in a variety of leisure settings.
264. Camp Leadership and Administration. Cr. 3

Values and objectives of organized camps; programming and administrative responsibilities; camp-related skills development. Opportunity for A.C.A. certification; weekend trip required.

## 265. Cultural Arts in Recreation. Cr. 3

Exploration of arts and crafts, music, dance, literature, and drama techniques in programming at recreation facilities.
360. Social Recreation Programming. Cr. 3

Techniques and practice in planning and conducting social activities with emphasis on social development and group participation. Field programming and leadership assignments.
362. Introductory Field Work. Cr. 1-3

Observation and leadership in an approved recreation/park setting under professional supervision. Arrangements must be made with Department supervisor two months prior to registration in order to arrange placement.
367. Introduction to Therapeutic Recreation. Cr, 3-4

Offered for 4 credits to therapeutic option majors only. Scope and rationale of the special area; examination of the needs of special populations; program considerations.
462. Internship. Cr. 9

Supervised full-time placement in an approved recreation/park setting in line with student's professional goals. Arrangements must be made with Department supervisor four to six months prior to registration in order to arrange placement.
463. Philosophy of Recreation and Park Services. Cr. 3

Nature of the recreation experience and its importance; history and development of the profession; organizations, trends, and directions in leisure services.
465. Recreation and Park Administration. Cr. 3

Administration of recreation and park systems with emphasis on urban agencies. Administrative functions, departmental structures and responsibilities.
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.
563. TR: Program Development. Cr. 3

Prereq: R P 367 or equivalent experience. Development of therapeutic recreation programs for persons with disabilities: planning, objectives, facilitation techniques, resources and evaluation. Knowledge of health care system, laws and regulations, inter-agency procedures. (B)
565. Recreation Services for the Aging. Cr. 3

Programming for the aged and the aging in a variety of leisure settings; communication of program availability and stimulation of participation.
(B:W,S)
566. Independent Study. Cr. 1-2(Max. 6)

Supervised research, applied or action, in the student's area of concentration or interest.
(F,W)
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.
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.
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.
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.
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.
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.
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.
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 profesionals explore current problems in the field or professional challenges.
693. TR: Physical Disabilities. Cr. 3

Prereq: R P 367 or equivalent experience. Examination of various congenital and traumatic disabilities; sports for the disabled; resources; activities of daily living from therapist's point of view; equipment for mobility.
(B:W)

## 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.


## TEACHER EDUCATION

Division Administrator: Asa J. Brown, Interim Head Office: 241 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

## Degree and Certificate Programs

Bachelor of Arts in Education Degree with majors in the following areas:
Art Education
Business Education
Distributive Education
Elementary Education
English Education-Secondary
Family Life Education
Foreign Language Education
Health Occupations Education
Industrial Education
Mathematics Education
Nursery School Education (Teaching Endorsement only)
Science Education
Social Studies Education-Secondary
Special Education-with concentrations in
Speech Impaired
Mentally Impaired
Visually Impaired
Speech Education-Secondary
Bachelor of Science in Education Degree with majors in the areas listed above

* Master of Arts in Teaching Degree
with majors in:
Elementary Education-with concentrations in:
Bilingual-Bicultural Education
Elementary Education
Science Education
Secondary Education-with concentrations in Bilingual-Bicultural Education
English Education

[^14]Foreign Language Education
Mathematics Education
Science Education
Social Studies Education
Vocational Education-with concentrations in:
Business Education
Distributive Education
Family Life Education
Health Occupations Education
Industrial Education
*Master of Education Degree
with majors in
Adult and Continuing Education
Art Education
Bilingual-Bicultural Education
Elementary Education-with concentrations in
Early Childhood Education
Language Arts and Reading
Literature for Children
Mathematics Education
Science Education
Social Studies Education
English Education-Secondary
Foreign Language Education-Secondary
-with concentrations in:
Foreign Languages
Teaching English as a Second Language
Mathematics Education
Pre-School and Parent Education
Reading
Science Education
Social Studies Education
Special Education-with concentrations in
Emotionally Impaired
Gifted Child Education
Learning Disabilities
Visually Impaired
Vocational Education-with concentrations in:
Business Education
Distributive Education
Family Life Education
Industrial Education

## * Ed.D. and Ph.D. Degree Majors

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

All of the baccalaureate degree programs listed above lead to Michigan Provisional Certification.

Post-degree programs are also available to those who wish to qualify for elementary or secondary certification (with the exception of vocational education and special education) in the above named areas but who do not wish to enter a Master of Arts in Teaching degree program.

Combined programs are available in the following curriculum areas in which students complete requirements leading to baccalaureate degrees in the College of Liberal Arts, or the School of Fine and Performing Arts, and the teaching certificate requirements in the College of Education:

COLLEGE OF LIBERAL ARTS
English Education-Secondary
Foreign Language Education-Secondary
Mathematics Education-Secondary
Science Education-Secondary
Social Studies Education-Secondary
Speech Education-Secondary

Dance Education
Music Education
Curriculum and Instruction-with concentrations in
Art Education
Bilingual-Bicultural Education (Ed.D. only)
Elementary Education
English Education-Secondary
Foreign Language Education-Secondary
K-12 Curriculum
Mathematics Education
Science Education
Secondary Education
Social Studies Education-Secondary
Reading (Ed.D. only)
Special Education
Vocational Education
Ill of the baccalaureate degree programs listed above lead to Michigan
rovisional Certification.
Post-degree programs are also available to those who wish to qualify
elementary or secondary certification (with the exception of
ocational education and special education) in the above named areas
who do not wish to enter a Master of Arts in Teaching degree pro-
Combined programs are available in the following curriculum areas in
hich students complete requirements leading to baccalaureate degrees
the College of Liberal Arts, or the School of Fine and Performing
Arts, and the teaching certificate requirements in the College of
ducation:
OLLEGE OF LIBERAL ARTS
English Education-Secondary
Foreign Language Education-Secondary
Mathematise Education-Secondary
Science Education-Secondary
Social Studies Education-Secondary
Speech Education-Secondary

## SCHOOL OF FINE AND PERFORMING ARTS

## * Education Specialist Certificate with majors in:

Elementary Curriculum and Instruction
English Education-Secondary
Mathematics Education
Reading
Science Education
Secondary Curriculum and Instruction
Social Studies Education
Special Education
Vocational Education

* For specific requirements, consult the Wayne State University Graduate

Bulletin.

# ADMISSION REQUIREMENTS for Bachelor's Degree Programs 

## Freshmen and Sophomores <br> entering with less than two years of college credit

All students intending to pursue a teaching curriculum (except in the fields of art education, business education, distributive education, industrial education, family life education, recreation and park services, or physical education) who enter the University directly from high school, or transfer from other colleges with less than fifty-three semester credits, are admitted by the University Admissions Office into the College of Liberal Arts for pre-education course work.

Students intending to prepare for teaching in any of the areas cited as exceptions above, with less than fifty-three semester credits, are admitted directly to the College of Education at the junior college level. Admission for each of these groups is through the University Office of Admissions, 3 East, Helen Newberry Joy Student Services Center, Detroit, Michigan 48202; telephone: 577-3577.

For information regarding application procedures, admission requirements and fees please refer to the General Information section of this bulletin, pages 5-35.

## Senior College Admissions Criteria

for students entering with two or more years of college credit
The standards listed below apply to those students entering the College of Education for the first time with junior year or higher standing, those working for a secondary school teaching certificate, those in a combined degree program, and those previously admitted at the freshman or sophomore level to the College of Education in the fields listed above.

Eligibility for admission to senior college professional work is based on the following criteria:

1. Satisfactory Completion of Two Years of College Work: A minimum of fifty-three semester or eighty quarter credits of work must be completed with an overall honor point average of 2.5 or above. In addition, the honor point average for any course work taken at Wayne State University must also be 2.5 or above. This work should generally conform to the two years of pre-professional work prescribed by the College for students who expect to prepare for teaching. The quality of work, especially in the major area, must indicate a strong potential for success in a teacher-education program.
2. Writing and Mathematics Competency Examinations: All Education students must satisfactorily complete the University English Proficiency Examination and fulfill the University Mathematics Proficiency Requirements prior to admission to the College of Education (see pages 21-22).
3. Physical Health: Definite standards of health must be met by all students entering the senior level of the College. All students entering the College of Education are required to complete a T.B. test prior to beginning work in the College.

Students with recognizable speech defects that may prove unacceptable for participation as a classroom instructor should seek diagnosis and early remedy at the Speech Clinic, 503 Manoogian, before applying to the senior College of Education. As a matter of routine, students at the junior college level anticipating teacher education work are
strongly urged to avail themselves of the diagnostic services of the Speech Clinic prior to applying to the senior college level. Students whose speech is judged unacceptable for classroom participation during their senior college years will be referred to the Speech Clinic for testing and remediation. Satisfactory verbal communication is a prerequisite for teacher certification.
4. Specific Prerequisites or other special requirements of the curriculum area for which the student is applying.

## Senior College Admission Application

Upon completion of two years of college course work (a minimum of fifty-three semester credits) at an accredited institution, students who intend to teach should apply to the College of Education for admission to senior college professional work. Applicants who have completed two full years or more of college work in some institution other than Wayne must apply for admission through the University Admissions Office, 3 East, Helen Newberry Joy Student Services Center. Students who intend to receive degrees from other colleges in the University and a teaching certificate from the College of Education must be admitted to the Combined Program through the College of Education Division of Academic Services, 489 Education Building. An application fee of $\$ 20.00$ is charged to students new to the University who seek admission at the senior college or post-degree levels.


## BACHELOR'S DEGREE

## REQUIREMENTS AND PROGRAMS

Leading to Michigan Provisional Certification

Candidates for the Bachelor of Arts or Bachelor of Science degree in Education must complete at least 124 credits in course work with a minimum honor point average of 2.0 . The following outline presents the general distribution of credits to be fulfilled by the student's choice of curricula from subsequent program descriptions (pages 84-86). NOTE: Some programs require more than 124 credits; note also the addendum cited below for the Bachelor of Arts degree.

1. Forty credits in pre-professional coursework including $6-8$ credits in English (ENG 102, plus one course at the 200 level or above) and courses specified by individual program areas.
2. Completion of the appropriate professional education sequence.
3. Completion of major and minors appropriate to the student's intended level of certification.
4. Three credits in hygiene, first aid, or health of the school child.
5. Completion of University General Education and Competency requirements (see page 20 ).

## Bachelor of Arts in Education

In addition to the above requirements, programs of candidates for the Bachelor of Arts degree must include twelve credits in a foreign language. If two or more units of a foreign language are offered as admission credentials, this requirement may be satisfied by completing eight college credits in the same language beyond the freshman level.

## Bachelor's Degree Programs

in Elementary Education
Leading to K-8 Certification
The elementary certificate qualifies the holder to teach all subjects in kindergarten through grade five. Additionally, the major and minor subjects of the student's concentration may be taught in the sixth through eighth grade with elementary certification.

Admission Requirements: see above, page 83.
DEGREE REQUIREMENTS: The following requirements in various curricular areas supplement the degree requirements outlined above.

PRE-PROFESSIONAL REQUIREMENTS: The following courses and course options are required of all students seeking K-8 certification, regardless of selection of major and minor studies. Some of these courses may also satisfy the University General Education Requirements (see page 20), but the dual application of any course to both College and University General Education categories cannot be used to reduce the total degree requirement below 124 credits.

## ENGLISH (Two Courses)

ENG 102 - (BC) Introductory College Writing ......................................................... 4
One 200-level English Elective................................................................................4-4

## HEALTH (One Course)

HE 330 - Health of the School Child..............................................................................................................................................

## NATURAL SCIENCE (Three Courses: one from each of the following groups)

B10 105 or B10 101
-(LS) An Introduction to Life. .....  .4
-(LS) Basic Biology I .....
PHY 102 or CHM 100 or GEL 101
-(PS) Conceptual Physics: The Basic Science. ..... 3-4

- (PS) Chemistry and Your World ..... $3-4$
- (PS) Geology: The Science of the Earth. .....  4
SCE 501 or SCE 502
-Biological Sciences for Elementary and Middle School Teachers .....  3
-Physical Sciences for Elementary and Middle School Teachers. .....  3
MATHEMATICS
MAE 505 or MAT 111
- Mathematics for Elementary School Teachers ..... 3
- Mathematics for Elementary Teachers I .....  3
SOCIAL STUDIES (Four Courses)
PSY 101 - (LS) Introductory Psychology .....  4
PS 101 or PS 103
- (Al) American Government .....  4
- (Al) The American Governmental System .....  3
GEG 110 - (SS) World Regional Patterns. .....  4
HIS 204 or HIS 205
- American Foundations: United States to 1877 ..... 3-4
- Modern America: United States since 1877. .....  4
SPEECH
SPB 101 - ( 0 O) Oral Communication: Basic Speech .....  3
PROFESSIONAL EDUCATION REQUIREMENTS: The following
courses are required of all students seeking K-8 certification, regardlessof selection of major or minor studies.
The following course may be taken while in the College of LiberalArts:
ELE 320 - Literature for Children. .....  3
The following courses may be taken only after admission to the College of Education.
CAMPUS COURSES
BBE 500 - Multicultural Education in Urban America .....  2
EDP 331 - Educational Psychology. .....  3
ELE 340 - Teaching Mathematics: Preprimary-9 .....  3
ELE 350 - Teaching Science: Preprimary-9. .....  3
ELE 360 - Teaching Social Studies: Preprimary-9. .....  3
RDG 443 - Teaching Reading in Subject Matter Areas. .....  3
SED 501 - Exceptional Child in the Regular Classroom. .....  2
TED 602 - Computer Applications in Teaching 1. .....  3
FIELD COURSES (Off-Campus): Courses listed under Phases 1-IIIare taken in public schools in the Detroit metropolitan area. Thephases must be completed in the order given. All of the courses in theprofessional sequence must be completed before entering TED 578.
Phase I
TED 355 - Teaching: Theory and Practice. .....  .5
ELE 330 - Teaching Language Arts: Preprimary-9 .....  3
Phase II
TED 356 - Pre-Student Teaching Field Experiences. .....  3
ELE 332 - Teaching Reading: Preprimary- 9 .....  3
Phase III CreditsTED 578 - Directed Teaching and Conference 10
MAJOR AREAS OF STUDY: Students seeking a K-8 certificationmust complete one of the following majors:
ENGLISH MAJOR (Thirty Credits)
The following courses plus all of the courses listed under the EnglishMinor; see below.
ENG 220 - (PL) Shakespeare ..... 3
ENG 311 or ENG 312
-(PL) English Literature to 1700 ..... 3
- (PL) English Literature after 1700 .....  3
Literature Elective ..... 4
ENGLISH/SPEECH GROUP MAJOR (Thirty-six Credits)
The following courses plus all of the courses listed under theEnglish/Speech Minor; see below.
ENG 220- (PL) Shakespeare .....  3
ENG 311 or ENG 312
- (PL) English Literature to 1700 .....  3
- (PL) English Literature atter 1700 .....  3
Electives in Speech ..... 6


## FOREIGN LANGUAGE MAJOR (Thirty Credits)

French and Spanish are the only languages in which Major concentrations are offered. Computation of the thirty required credits includes any and only courses taken at the university level. NOTE: Courses in literature in English translation cannot be used to fulfill foreign language requirements.

## MATHEMATICS MAJOR (Thirty Credits)

The following courses plus all of the courses listed under the Mathematics Minor; see below.
Credits
MAT 151 or MAT 201
-Calculus for the Social and Management Sciences............................... 3
-Calculus I ............................................................................................

## Electives from:

$\operatorname{CSC} 100$ or CSC 102
-(CL) Introduction to Computer Science ..... 3
-Computer Science I ..... 4
MAT 186 - Discrete Mathematics for Computer Science 1 ..... 4
MAT 221 - Elementary Probabiity and Statistics .....  .4
STA 102 - Elementary Statistics ..... 3
NATURAL SCIENCE GROUP MAJOR (Thirty-six Credits)
PHY 102 - (PS) Conceptual Physics: The Basic Science ..... 3-4
B10 101 - (LS) Basic Biology 1 .....
B10 102 -- Basic Bioiogy II .....  .4
GEL 101 - (PS) Geoology. The Science of the Earth .....  4
GEL 102 - interpreting the Earth .....  4
CHM 102 - (PS) General Chemistry 1 ..... 4
CHM 103 - General Chemistry II .....  .4
SCE 501 - Biological Sciences for Elementary and Middle School Teachers ..... 3
SCE 502 - Physical Sciences for Elementary and Middle School Teachers ..... 3
SCE 504 - Field Course Exploring the Natural Environment ..... 3

## NURSERYSCHOOL EDUCATION:

This program leads to a teaching certificate endorsement only. See course requirements under Minor Areas of Study, page 86.
SOCIAL STUDIES GROUP MAJOR (Thirty-six Credits) Credits
PS 101 or PS 103
-(AI) American Government .....
-(A) The American Governmental System .....  3
GEG 110 - (SS) World Regional Patterns .....
HIS 110 or HIS 120 or HIS 350- (HS) The Ancient World 4

- (HS) The Medieval World .....  4
- (HS) Explorers' Age: 1400-1750 ..... 3
HIS 204 - American Foundations: United States to 1877 .....
HIS 205 - Modern America: United States Since 1877 .....
ANT 210 or ANT 520
-(SS) Introduction to Anthropology .....  .4
- Social Anthropology .....  3
Electives from:
HIS 160 - (HS) African Civilizations to 1800 .....  3
HIS 161 - (HS) African Civikizations since 1800 .....  3
HIS 335 - (HS) Revolution in the Modern World: 1750 to Present .....  3
HiS 573 - The History of West Africa. .....  .4
HIS 579 - Cities and Empires: European, Muslim, Chinese and Russian .....
Six to nine elective credits are also acceptable from anthropology, economics,geography, history, political science, or sociology
MINOR AREAS OF STUDY: Students seeking a K-8 endorsementmust complete one of the following minors:
ART EDUCATION MINOR (Twenty-four Credits)
AEO 117 or AED 526
- Methods and Materials of Scupptural Expression. ..... 3
- Methods and Materials: Wood, Metal, and Plastic .....  3
AED 118 or AED 622
- Art Process, Perception and Expression .....  3
- Drawing and Watercolor - Field Studies .....  3
AED 513 - Visual Communication .....  3
AED 517 - Methods and Materials: Fibers .....  3
AED 519 - Light, Sound, Space and Motion. ..... 3
AED 522 - Methods and Materials: Painting .....  3
AED 523 - Ceramics foucation 1 .....  3
AED 528 - Methods and Materials: Printmaking. .....  3
BILINGUAL-BICULTURAL MINOR (Twenty-five Credits)
BBE 500 - Multicultural Education in Urban America .....  .2
BBE 550 - Introduction to Bilingual/Bicultural Education .....  3
BBE 553 - The Socio-Psychological Needs of Ethnocuttural Communities ..... 3
BBE 656 -Teaching Methods in Bilingual/Bicultural Education .....  3
BBE 670 ~ Seminar in Cultural Awareness .....  3
BBE 502 - Effective Involvement of Parents in School and Community. ..... 3
BBE 660 - Internship in Biiingual/Bicultural Teaching .....  5
BBE 685 - Applied Linguistics: Issues in Bilingual Education ..... 3
ENGLISH MINOR (Twenty Credits)
ENG 102 - (BC) Introductory College Writing ..... 4
ENG 301 - (IC) Intermediate Witing ..... 3
ENG 541 or ENG 542 or ENG 545
-American Literature: $1800-1865$ ..... 3
-American Literature: 1865-1914 ..... 3
- Modern American Literature .....  3
ENG 239 - (IC) Introduction to Afro-American Literature: Literature \& Writing. ..... 4
ENG 270 or ENG 271 or ENG 272
- Introduction to Contemporary English .....  3
- Linguistic Approaches to Language Acquisition .....
- (PL) Basic Concepts in Linguistics .....  .3
ELE 320 - Literature for Children ..... 3
ENG 102 - (BC) introductory College Writing .....  .4
ENG 301 - (IC) Intermediate Writing ..... 3
ENG 541 or ENG 542 or ENG 545
-American Literature: $1800-1865$ .....  .3
-American Literature: 1865-1914 .....  3
- Modern American Literature .....  3
ENG 239 - (IC) Introduction to Afro-American Literature: Literature \& Writing ..... 4
ENG 270 or ENG 271 or ENG 272
- Introduction to Contemporary English .....  3
- Linguistic Approaches to Language Acquisition .....  3
- (PL) Basic Concepts in Linguistics .....  3
ELE 320 - Literature for Children .....  3
SPO 204 - Voice and Articulation .....  3
SPO 250 - Beginning Oral łnteropretation .....  3
FOREIGN LANGUAGE MINOR (Twenty Credits)
French, Latin, and Spanish are the only languages in which Minorconcentrations are offered. Computation of the twenty requiredcredits includes any and only courses taken at the university level.NOTE: Courses in literature in English translation cannot be used tofulfill foreign language requirement.
HEALTH EDUCATION MINOR (Twenty-four Credits)
ANA 301 - Introduction to Human Anatomy ..... 4
PSL 322 - Fundamentals of Physiology .....  .4
HEA 231 - Dynamics of Personal health ..... 2.3
HEA 232 - Dynamics of Community and Environmental Health .....  2
HE 330 - Health of the School Child ..... 2
HE 333 - School Health Education. .....  3
HE 434 - Reproductive Health Education ..... 2
HE 480 - Fieldwork in Health Education ..... 1.3
Electives. ..... 3-4
MATHEMATICS MINOR (Twenty Credits)
MAT 111 - Mathematics for Elementary Teachers 1 .....  3
MAT 112 - - Mathematics for Elementary Teachers II .....  3
MAE 510 - Mathematics for Middle and Junior High Schooi Teachers 1 .....  3
MAE 511 - Mathematics for Middle and Junior High School Teachers II. ..... 3
MAT 150 Or MAT 180
-Finite Mathematics for the Social and Manazement Sciences ..... 3
-Elementary Functions ..... 4
Electives From:
CSC 100 or CSC 102
-(CL) Introduction to Computer Science ..... 3
- Computer Science 1 ..... 4
MAT 151 -- Calculus for the Social and Management Sciences ..... 3
MAT 221 - Elementary Probability and Statistics ..... 4
MAT 225 -- Elementary Linear Algebra ..... 3
STA 102 - Elementary Statistics .....  3
MUSIC MINOR: Students should consult with a music educationadviser in the Music Department, School of Fine and Performing Arts.
NATURAL SCIENCE GROUP MINOR
(Twenty-four Credits)
PHY 102 - (PS) Conceptual Physics: The Basic Science ..... 3.4
CHM 100 (PS) Chemistry and Your World ..... 3-4
GEL 101 - (PS) Geology: The Science of the Earth .....  4
B10 101 - (LS) Basic Bialogy I ..... 4
BIO 102 - Basic Biology 11. .....  .4
SCE 501 - Biological Sciences for Elementary and Middle School Teachers .....  3
SCE 502 - Physical Sciences for Elementary and Middle School Teachers ..... 3


## NURSER Y SCHOOL EDUCATION MINOR (Twenty-four Credits)

ELE 320 - Literature for Children .....  3
ELE 602 - Seminar in Early Childhood ..... 4
ELE 604 - Role of Content Areas in Early Childhood Education ..... 3
ELE 606 or ELE 607
-Community Contacts: Working with Families in Urban Settings .....  2
--Parent Intervention Programs is Home and School ..... 3
ELE 608 - Preprimary Goals and Practice. .....  2
ELE 634 - Teaching Reading in Early Childhood Education .....  3
PSY 343 or PSY 344
-- Psychology of Infant Behavior and Cevelopment .....  3

- Psychology of Child Behavior and Development. .....  3
Early Childhood Elective ..... 3-4
PHYSICAL EDUCATION MINOR (Twenty Credits)
Physical Education Core (eight credits required)
PE 191 - Protessional Perspectives in Physical Education (Required) .....  .2
PE 340 - Life Span Motor Deveiopment .....  3
PE 354 - Cultural Foundations of Physical Education. .....  .3
P E 355 - Motor Learning and Control .....  3
PE 357 - Physiology of Exercise .....  3
PE 358 - Kinesiology. .....  3
PE 550 - Evaluation and Measurement in Health \& Physical Education .....  3
Specialized Core (five to six credits required)
PE 341 - Physical Education for Elementary School Children! .....  3
PE 342 - Physical Education for Elementary School Children II ..... 2.3
PEA Electives \{zero to three credits)
Students must contact the Physical Education Department for advising(577-4265).
SOCIAL STUDIES GROUP MINOR (Twenty-four Credits)
PS 101 or $P \$ 103$
- (Al) Amterican Government ..... 4
- $\langle A \mid\rangle$ The American Governmental System .....  3
GEG 110 - (SS) World Regional Patterns. .....  5
HIS 130 or HIS 140
- (HS) The World and the West .....  4
-(HS) The World Since 1945 ..... 4
HIS 204 - American Foundations: United States to 1877 ..... 4
HIS 205 - Modern American: United States Since 1877 ..... 4
Elective (choose one from the following).
His 224 - History of Michigan ..... $3-4$
HIS 35D - (HSS) Explorers' Age: 1400-1750. .....  3
HIS 160 - (HS) African Civilization to 1800 ..... 3
HIS 161 - (HS) African Civilization since 1800 ..... 3


## Bachelor's Degree Programs <br> in Secondary Education <br> Leading to Grades 7-12 Certification

The secondary education curriculum leads to a bachelor's degree in education and secondary school teaching certification in the major and minor areas listed below. Whereas this degree is granted by the College of Education, students also have the option of earning secondary school certification in conjunction with a bachelor's degree from the College of Liberal Arts or the School of Fine and Performing Arts. For information regarding these combined degree programs, see pages 154 and 208, respectively.

## Admission Requirements: see page 83.

DEGREE REQUIREMENTS: The following requirements in various curricular areas supplement the degree requirements outlined above (see page 84).

PRE-PROFESSIONAL REQUIREMENTS: The following courses and course options are required of all students seeking secondary (grades 7-12) certification regardless of selection of major or minor studies. Some of these courses may also satisfy the University General Education Requirements, but the dual application of any course to both College and University General Education categories cannot be used to reduce the total degree requirement below 124 credits.

## GENERAL COURSE REQUIREMENTS

|  | ENG 102 - (BC) Introductory College Writing ............................................ 4 |
| :---: | :---: |
|  | One 200-level (or above) English course .......................................................-4 |
|  | SPB 101 - (0C) Oral Communication: Basic Speech ....................................... 3 |
|  | HEA 233 or HE 330 or HEA 231 |
|  | -First Aid and CPR. |
|  | -Health of the School Child ..................................................... 3 |
|  | -Dynamics of Personal Health......................................................3 |
|  | MAT 150 or MAT 180 |
|  | - Finite Mathematics for the Social and Management Sciences <br> - Elementary Functions. $\qquad$ |
|  |  |
|  | PSY 101 - (LS) introductory Psychology$\text { PS } 101 \text { or PS } 103$ |
|  |  |
|  | - (A) American Government ....................................................... 4 |
|  | - (AI) The American Governmental Syste |
|  |  |

## SOCIAL SCIENCE (Four Courses)

Choose from anthropology, economics, geography, history, psychology, political science, or sociology. (Satisfaction of the University General Education Requirement in American Society and Institutions and PSY 101, (LS) introductory Psychology, may be used as two of the four requirements.)

SCIENCE (Two Courses: one from each of the following groups)

1) Biological Sciences. B10
2) Physical Sciences
AST, CHM, GEL, or PHY

PROFESSIONAL EDUCATION REQUIREMENTS: The following courses may be taken only after admission to the College of Education and are required of all students seeking secondary (grades 7-12) certification. The selection of courses to fulfill the methods requirements I and II is predicated on the student's choice of major. The configuration of the courses in Phases I - III represents the sequence in which students may elect these courses (substitutions between the phases is possible), however, all of the courses in Phases I and II must be completed before taking TED 578.

## PHASE I

Credits
TEO 516 - Analysis of Secondary School Teaching. ..... 3
Methods I-(see below) .....  3
EDP 331 - Educational Psychology .....  3
PHASE II
TED 565 - Pre-Student Teaching Field Experience for Secondary Majors .....  5
Methods II - (see below) .....  3
RJG 443 - Teaching Reading in Subject Matter Areas. ..... 3
PHASE III
TED 578 - Directed Teaching and Conference ..... 10
Courses which may be elected in any Phase
EHP 360 - Introduction to the Philosophy of Education ..... 3
TED 602 - Computer Applications in Teaching I .....  3
BBE 500 - Multicultural Education in Urban America .....  2
SED 501 - Exceptional Child in the Regular Classroom .....  2
TEACHING METHODS (Two Courses)
COMPUTER SCIENCE EDUCATION
TED 602 - Computer Applications in Teaching I .....  .3
TED 603 -- Computer Applications in Teaching II .....  3
ENGLISH EDUCATION
EED 520 - Methods of Teaching English: Grades 7-12 .....  3
EED 612 or EED 633

- English Composition in Secondary Schools. .....  3
- Teaching Literature in Secondary Schools ..... 3
FOREIGN LANGuaGE Education
LED 652 - Teaching English as a Second Language/Foreign Language: Methods I.... 3LED 653 - Teaching English as a Second Language/Foreign Language: Methods II... 3
MATHEMATICS EDUCATION
Consult a Mathematics Education adviser for possible substitutions and additional courses.
MAE 605 - Teaching Mathematics in Middtle Schooi \& Junior High School. .....  3
ELE 340 - Teaching Mathematics: Preprimary-9 .....  3
SCIENCE EOUCATION
SCE 506 - Methods and Materials of Instruction in Secondary School Science I....... 3
SCE 507 - Methods and Materials of instruction in Secondary School Science II ..... 3
SOCIAL STUDIES EDUCATION
SSE 671 - Methods and Materiais of Instruction in Secondary Social Studies .....  3
SSE 673 - New Perspectives in Social Education ..... $1-8$
SPEECH EDICATION
SPE 606 - Teaching Communication at the Secondary Leve .....  3
EED 612 of EED 633
- English Composition in Secondary Schools ..... 3
- Teaching Literature in Secondary Schoois ..... 3

MAJOR AREAS OF STUDY: Students seeking secondary certification for grades 7-12 must complete one of the following majors:

## ENGLISH MAJOR (Thirty Credits)

ENG 301 or ENG 501
-(IC) Intermediate Writing .....  3
-Advanced Expository Writing .....  3
ENG 311 or ENG 312
-(PL) English Literature to 1700 ..... 3

- (PL) English Literature after I700 ..... 3
ENG 220 - (PL) Shakespeare. .....  3
ENG 541 - American Literature: 1800-1865 ..... 3
ENG 545 or ENG 542
- Modern American Literature .....  3
-American Literature: 1865-1914 ..... 3
ENG 570 or ENG 573
-Introduction to Linguistic Theory .....  3
- Traditional Grammas ..... 3
ENG 280 - Techniques of Imaginative Writing .....
ENG 239 or ENG 347
-(IC) Introduction to Afro-American Literature: Literature \& Writing .....  .4
-Survey of Afro-American Literature. ..... 3
English Elective .....  .6
FOREIGN LANGUAGE MAJORS (Thirty Credits)
Secondary certification is offered with majors in the followinglanguages: French, German, Italian, Latin, Russian, and Spanish.The computation of the thirty required credits must be accrued withinone language and may begin with the course levels cited below.
Credits
FRE 260 - Introduction to the Reading of Literature .....  4
GER 202 - Intermediate German .....  .4
ITA 202 - Intermediate Italian .....  .4
LAT 260 - Latin Poetry .....  .4
RUS 245 - Language Skills: Speaking and Writing .....
SPA 202 - Intermediate Spanish: Readings ..... 4
MATHEMATICS MAJOR (Thirty Credits)
MAT 201 - Calculus I .....  4
MAT 202 - Calculus 11. .....  4
MAT 203 - Calculus III. .....  .4
MAT 225 - Elementary Linear Algebra .....  3
MAT 235 - Elementary Differential Equations .....  3
MAT 614 - Topics in Mathematics for High School Teachers I .....  3
MAT 615 or MAT 221
- Topics in Mathematics for High School Teachers II .....  3
-Elementary Probability and Statistics .....  .4
MAT 616 or MAT 542
-Topics in Mathematics for High School Teachers III .....  3
-Algebra 1 .....  .4
Electives (two courses from the following):
MAT 507 - Advanced Calculus .....  .4
MAT 540 - Elementary Theory of Numbers .....  3
MAT 560 - Introduction to Analysis 1. .....  .4
MAT 586 - Introduction to Linear Programming. .....  3
Recommended Additional Credit:
CSC 102 - Computer Science 1 .....  .4
MATHEMATICS MAJOR: Computer Science Concentration (Thirty-one Credits)
CSC 102 - Computer Science 1............................................................................. 4
CSC 203 - Computer Science II. ..... 4
CSC 371 - Data and File Structures .....  4
$\operatorname{CSC} 206$ or $\operatorname{CSC} 210$
- (CL) Introduction to FORTRAN .....  3
- Introductian to COBOL .....  3
Electives (at least 15 credits)
CSC 441 - introduction to Computer Systems .....  4
CSC 513 - Introduction to information Systems .....  .4
CSC 520 - Principles of Programming Languages .....  3
CSC 521 - Artificial Intelligence Programming with LISP .....  2
CSC 587 - Computer Graphics. .....  .3


## SCIENCE MAJOR (Thirty-two Credits)

Thirty-two credits must be completed in a single discipline combined with either a Mathematics Minor or a Unified Science Minor (for minors, see below). All Physics, Biology, Chemistry and Geology students must follow the minimum requirements and sequences as defined by the specific Liberal Arts department plus additional courses if the thirty credit minimum is not attained. CHM 674 (Laboratory Safety, two credits) may be used as part of the Chemistry major or Unified Science Minor.

## SCIENCE GROUP MAJOR (Thirty-six/Fifty Credits)

Fifty credits required, without science or mathematics minor; thirty-six credits required, if combined with science or mathematics minor. Credits
B10 101 - (LS) Basic Biology 1 .....  4
B10 102 - Basic Biology II. .....
CHM 107 - ( PS ) Principles of Chemistry I . .....  4
CHM 108 - Principles of Chemistry II .....  .5
CHM 674 - Laboratory Safety .....  2
GEL 101 - (PS) Geology: The Science of the Earth .....  .4
GE1 102 - Interpreting the Earth .....  4
PHY 213 - (PS) General Physics. .....  .4
PHY 214 - General Physics .....  4
AST 201 - (PS) Descriptive Astronomy ..... 4.5
Science Electives in any of the above areas ..... 12
SOCIAL STUDIES MAJOR: Economics Concentration (Thirty-four Credits)
ECO 101 - (SS) Principles of Macroeconomics. .....  .4
ECO 102 - (SS) Principles of Micraeconomics .....  4
ECO 320 - Public Control of Business .....  .3
ECO 410 - Economics and Business Statistics I .....  3
ECO 441 - Labor Institutions. .....  .4
ECO 464 - Economic Development of the United States ..... 3
ECO 500 - Intermediate Microeconomics. .....  .4
ECO 505 - Intermediate Macroeconomics .....  3
ECO 561 - Comparative Economic Systems ..... 3
ECO 580 - Urban and Regional Economics I .....  3
SOCIAL STUDIES MAJOR: Geography Concentration (Thirty Credits)
GEG 110 - (SS) World Regional Patterns. .....  .4
GEG 120 - Earth Physical Systems ..... 4
GEG 200 - (SS) Introduction to Urban Studies. .....  4
GEG 300 - Map intelligence. ..... 3
GEG 301 - Thematic Cartography .....  .4
GEG 302 - Spatial Organization: Concepts and Techniques .....  3
GEG 313 - (SS) Introductory Irban Geography ..... 4
GEG 340 - The Physical Landscape ..... 4
SOCIAL STUDIES MAJOR: History Concentration (Thirty Credits)
American History (Three Courses):
HIS 204 and HIS 205

- American Foundations: United States to 1877. ..... 3-4
- Modern America: United States Since 1877 ..... 3-4
HIS 103 or HIS 105
- (Al) History of American Political Institutions .....  4
- (Al) American Civilization Since World War II ..... $3-4$
Electives (one course from the following):
HIS 305 - United States and the Vietnam Experience ..... 4
HIS 314 - Black Experience in America: 1619-1865. .....  3
HIS 330 - Technology in America .....  .3
HIS 513 - Foreign Relations of the United States since 1920 .....  3
HIS 517 - Constitutional History of the United States since 1877 ..... 3
HIS 520 - Women in American Life and Thought ..... 3
HIS 522 - Changing Shape of Ethnic America ..... 3
World History (three courses from the following):
HIS 110 - (HS) The Ancient World .....  3
HIS 120 - (HS) The Medieval World .....  3
HIS 130 -(HS) The World and the West: 1500-1945 .....  3
HIS 140 - (HS)The World since 1945 .....
HIS 350 -(HS) Explorers' Age: 1400-1750 .....  3
Michigan History (three credits):
HIS 224 - History of Michigan .....  3
Non-Western and Third World History (one course):
HIS 160 or HIS 161
-(HS) African Civilization to 1800 . .....  3
-(HS) African Civilization since 1800 . .....  3
HIS 335 - Revolution in the Modern World: 1750 to the Present .....  3
HIS 573 - History of West Africa .....  .4
HIS 579 - Cities \& Empires: European, Muslim, Chinese \& Russian. .....  3
SOCIAL STUDIES MAJOR: Political Science Concentration (Thirty Credits)
PS 101 - (Al) American Government ..... 4
PS 207 - State and Local Government. ..... 4
P S 224 - (SS) Introduction to Urban Politics and Policy ..... 4
P S 281 - World Politics. .....
PS 304 - The Legislative Process. .....  .4
P S 512 - Constitutional Rights and Liberties. ..... 4
Electives. .....  6


## SOCIAL STUDIES GROUP MAJOR (Thirty-six Credits)

The thirty-six credits must be distributed among at least three of the following subject areas: economics, history, geography, and political science. Additionally, the credit requirement must include three courses in U.S. history and three courses in world history. This group major must be combined with a minor of twenty credits in one of the social studies disciplines cited above.

## SPEECH MAJOR (Thirty Credits)

This major must be combined with an English Minor (see below).
SPR 201 - Survey of Mass Communications .....  4
SPO 204 - Voice and Articulation. ..... 3
SPC 210 - Persuasive Speaking .....  3
SPC 211 - Argumentation and Debate. .....  3
SPO 250 - Beginning Oral Interpretation .....  .3
SPC 321 - Communication: Concepts/Contexts .....  4
SPR 540 - Techniques of Film/Video Production .....  4
Speech Electives .....

MINOR AREAS OF STUDY: Students seeking secondary certification for grades 7-12 must complete one of the following minors:

## ART EDUCATION MINOR (Twenty-four Credits)

AED 117 or AED 526
-Methods and Materials of Sculptural Expression .....  3
-Methods and Materials: Wood, Metal and Plastic ..... 3
AED 118 or AED 622
-Art Process, Perception and Expression .....  .3
-Drawing and Watercolor - Field Studies .....  3
AED 513 - Visual Communications. .....  3
AED 517 - Methods and Materials: Fibers .....  3
AED 519 - Light, Sound, Space and Motion. ..... 3
AED 522 - Methods and Materials: Painting. ..... 3
AED 523 - Ceramics Education I .....  3
AED 528 - Methods and Materials: Printmaking. .....  3
BILINGUAL/BICULTURAL MINOR (Eighteen/Twenty-four Credits)

Eighteen credits is required for candidates holding Michigan Teaching Certificates; twenty-four credits is required for candidates without certification. Courses marked with an asterisk (*) are required for either credit option. The student must take the Language Proficiency examinations by the time he/she has completed twelve credits; the student must satisfactorily pass the proficiency tests before completion of the program.
BBE 500 - Multicultural Education in Urban America
Credits
2* BBE 502- Effective Involvement of Parents in School and Community
BBE 550 - Introduction to Bilingual/Bicultural Education 3
BBE 553 - The Socio-Psychological Needs of Ethnocultural Communities .....  .3
BBE 656 - Teaching Methods in Bilingual/Bicultural Education .....

* BBE 685-Applied Linguistics: Issues in Bilingual Education .....  3
* BBE 670- Seminar in Cultural Awareness .....  .3
BBE 659 - Culture and Language in Bilingual/Bicultural/Education ..... 1-3
BBE 660 - Internship in Bilingual/Bicultural Teaching ..... 2-12
COMPUTER SCIENCE MINOR (Twenty Credits)
CSC 102 - Computer Science I .....
CSC 203 - Computer Science II. ..... 4
CSC 206 or CSC 210
- (CL) Introduction to FORTRAN. ..... 3
- Introduction to COBOL ..... 3
CSC 371 - Data and File Structures ..... 4
Electives (six credits):
CSC 441 - Introduction to Computer Systems ..... 4
CSC 513 - Introduction to information Systems. ..... 4
CSC 521 - Artificial Intelligence Programming with LISP ..... 2
CSC 587 - Computer Graphics ..... 3
ENGLISH MINOR (Twenty Credits)
ENG 220 - (PL) Shakespeare ..... 3
ENG 301 or ENG 280
-(IC) Intermediate Writing .....  3
-Techniques of Imaginative Writing ..... 4
ENG 314 or ENG 545
-(PL) Survey of American Literature .....  3
-Modern American Literature ..... 3
ENG 570 or ENG 573
-Introduction to Linguistic Theory ..... 3
-Traditional Grammar ..... 3
ENG 311 or ENG 312
-(PL) English Literature to 1700 ..... 3
-(PL) English Literature after 1700 ..... 3
English Elective ..... 3


## FOREIGN LANGUAGE MINORS (Twenty Credits)

Secondary certification is offered with minors in the following languages: French, German, Italian, Latin, Russian, and Spanish. Computation of the twenty required credits may begin with the first university-level course work.

## HEALTH EDUCATION MINOR (Twenty-four Credits)

ANA 301 - Introduction to Human Anatomy ..... 4
PSL 322 - Fundamentals of Physiology .....
HEA 231 - Dynamics of Personal Health ..... 2-3
HEA 232 - Dynamics of Community and Environmental Health ..... 2
HE 330 - Health of the School Child. ..... 2
HE 333 - School Health Education .....  3
HE E 434 - Reproductive Health Education .....  2
HE 480 - Fieldwork in Health Education. ..... 1-3
Electives. ..... 3.4
MATHEMATICS MINOR (Twenty Credits)
MAT 201 - Calculus 1 ..... 4
MAT 202 - Calculus H ..... 4
MAT 203 - Calculus III. .....  4
MAT 225 - Elementary Linear Algebra .....  3
MAT 235 - Elementary Differential Equations .....  3
Two from the following:
MAT 614 - Topics in Mathematics for High School Teachers 1 .....  3
MAT 615 or MAT 221
-Topics in Mathematics for High School Teachers II. .....  3
-Elementary Probability and Statistics. .....  4
MAT 616 or MAT 542
--Topics in Mathematics for High School Teachers III .....  3
-Algebra I. .....  4
MUSIC MINOR: Students should consult with a music educationadviser in the Music Department, School of Fine and Performing Arts.
PHYSICAL EDUCATION MINOR (Twenty-eight Credits)
P E 191 - Professional Perspectives in Physical Education. .....  2
PE 354 - Cultural Foundations of Physical Education. .....  3
P E 340 - Life Span Motor Development .....
PE 355 - Motor Learning and Control. .....  3
PE 357 - Physiology of Exercise. .....  3
PE 358 - Kinesiology .....  3
PE 550 - Evaluation and Measurement in Health \& Physical Education .....  3
PE 258 - Physical Education in Secondary Schools I .....  4
P E 259 - Physical Education in Secondary Schools II .....  .4

Electives from PEA and PE courses (1-4 credits): Depending upon the particular major and interest of the student, an elective emphasis area will be selected (e.g., Adapted Physical Education, Secondary Physical Education, Coaching, Aquatics, Athletic Training, Fitness Leadership). Physical Education minors must be advised by the Physical Education Department.

## SCIENCE MINOR (Twenty Credits)

For the science minor, students must complete twenty credits in one of the following disciplines in which the student has NOT accrued major credit: biology, chemistry, geology, and physics. Additionally, students must complete one science methods course, SCE 506, as well as MAT 180 or its equivalent.

## UNIFIED SCIENCE GROUP MINOR (Twenty-four Credits)

The science group minor consists of basic course work in the areas of biology, chemistry, geology, and physics. Minor credit cannot be earned in the subject area in which the student has accrued major credit. Twelve credits must be earned in one subject and the student must take one science methods course, SCE 506. For recommended
electives, see the Science Group Major above, page 88.

## SOCLAL SCIENCE SINGLE SUBJECT MINOR (Twenty Credits)

For a social science minor in a single subject, twenty credits must be completed in one of the following areas: economics, history, geography, political science, or sociology. The minor in history must include at least three courses each in United States history and world history.

## SOCIAL SCIENCE GROUP MINOR (Twenty-four Credits)

The social science group minor requires completion of twenty-four credits in at least two of the following areas (in which the student has NOT accrued major credits): economics, history, geography, political science, or sociology. The minor is offered only in combination with a social science major in one of these areas. The distribution of credits for the minor must include three courses in U.S. history and three courses in world history (if this requirement has not been satisfied by the completion of major credits). For electives, one course in anthropology is recommended, and one course in psychology beyond the introductory level may be used.

## SPEECH MINOR (Twenty Credits) <br> Credits

SPR 201 - Survey of Mass Communications.................................................... 4
SPO 204 - Voice and Articulation..................................................................................
SPC 210 - Persuasive Speaking................................................................... 3
SPC 211 - (CT) Argumentation and Debate..................................................... 3
SPO 250 - Beginning Oral Interpretation ....................................................... 3
SPR 540 - Techniques of Film/Video Production.............................................. 4

## Bachelor's Degree Programs

in Special Education

## Leading to Grades K-12 Endorsement

The special education curriculum leads to a bachelor's degree in education and certification in the areas of mentally impaired, visually impaired, or speech impaired. The mentally impaired concentration prepares teachers to work with children who are mentally retarded. The visually impaired concentration prepares teachers to work with children who are blind or partially sighted. The speech impaired concentration prepares teachers to work with children who have speech disorders.

## Admission Requirements: see page 83.

DEGREE REQUIREMENTS: The following requirements in various curricular areas supplement the degree requirements outlined above (see page 84). The entire program in special education requires a minimum of 140 credits.

PRE-PROFESSIONAL REQUIREMENTS: The following courses are required of all students seeking special education endorsements regardless of selection of major study. Some of these courses may also satisfy the University General Education Requirements, but the dual application of any course to both College and University General Education categories cannot be used to reduce the total degree requirement below 140 credits. College and special education planned minor requirements must be completed prior to entering this program.

Credits
B10 105 - (LS) An Introduction to Life............................................................. 4
BIO 287 - Anatomy and Physiology .............................................................................
ENG 102 - (BC) Introductory College Writing.................................................... 4

HEA 233 - First Aid and CPR.............................................................................

PSY 101 - (LS) Introductory Psychology ................................................................ 4
SPB 101 - (OC) Orai Communication: Basic Speech ........................................... 3

PROFESSIONAL EDUCATION REQUIREMENTS: The following courses are required of all students seeking special education endorsements and may be taken only after admission to the College of Education. The configuration of courses in Phases I - IV represents the recommended sequence for taking these courses, but substitutions between phases is possible with the exception that SED 601 is a corequisite of either TED 578 or 579 .

PHASE I (Seventeen Credits) Credits
TED 355 - Teaching: Theory and Practice ........................................................ 5
ELE 330 - Teaching Language Arts: Preprimary-9 .............................................. 3
ELE 340 - Teaching Mathematics: Preprimary-9................................................ 3
EDP 331 - Educational Psychology...............................................................................
RDG 443 - Teaching Reading in Subject Matter Areas ........................................ 3

## PHASE II (Twelve Credits)

TED 356 - Pre-Student Teaching Field Experiences........................................... 3
ELE 350 - Teaching Science: Preprimary-9..................................................... 3

ELE 332 - Teaching Reading: Preprimary-9....................................................... 3

## PHASE III (Seven Credits)

TED 578 - Directed Teaching and Conference .................................................. 5
BBE 500 - Multi-Cultural Education in Urban America ....................................... 2

## PHASE IV (Ten-Eleven Credits)

TED 579 - Student Teaching \& Conference for Special Groups ............................. 8
SED 601 - Seminar in Multi-Handicapped........................................................-3
MAJOR AREAS OF STUDY: Students pursuing a bachelor's degree in education leading to an endorsement in special education must complete one of the following majors. The courses cited can be taken only after admission to the Special Education Program.
MENTALL Y IMPAIRED (Thirty-one Credits) ..... Credits
SED 406 - Developing Observation \& Assessment Skills - Lab/Seminar .....  3
SED 408 - Special Educational Services to Severely Handicapped ..... 3
SED 503 - Education of Exceptional Children ..... 3
SED 504 - Speech Improvernent in the Classroom. .....  .2
SED 511 - Mental Retardation and the Cognitive Process. ..... 3
SED 560 - Intro. to Educ. of Hearing- and Visually-Impaired Children .....  3
SED 513 - Curriculum Development: MR/POHI .....  3
SED 514 - Behavior Management: MR/POHI ..... 3
SED 526 - Home \& Hospital Education of Children with Physical Impairments .....  4
SED 570 - Computer \& Adaptive Technology in Special Education ..... 2
SED 600 - Problems in Special Education ..... 3
SED 601 - Seminar in Multi-Handicapped .....  2
VISUALLL Y IMPAIRED (Thirty-three Credits)
SED 406 - Developing Observation \& Assessment Skills - Lab/Seminar ..... 3
SED 408 - Special Education Services to Severely Handicapped .....  3
SED 503 - Education of Exceptional Children. .....  3
SED 504 - Speech Improvement in the Classroom.. .....  2
SED 511 - Mental Retardation and the Cognitive Process. .....  3
SED 560 - Intro. to Educ. of Hearing- and Visually-Impaired Children .....  3
SED 561 - Pathology of Organs of Vision ..... $\ldots$
SED 562 - Teaching Visually Impaired Children .....  3
SED 563 - Braille Methods. .....  2
SED 564 - Advanced Braille and Technical Aids for Blind ..... 2
SED 570 - Computer \& Adaptive Technology in Special Education .....
SED 601 - Seminar in Multi-Handicapped .....  2
SED 665 - Orientation \& Mobility: Visually Impaired Children .....  2

SPEECH IMPAIRED: See page 231 in the College of Liberal Arts section of this bulletin.

SPECIAL EDUCATION MINOR: Students pursuing a bachelor's degree in education leading to an endorsement in special education must complete the following minor requirment.

## SPECIAL EDUCATION PLANNED MINOR (Twenty Credits)

PSY 230 - Psychology of Adjustment ..... 4
SOC 200 - (SS) Understanding Human Society .....  3
ANT 210 - (SS) Introduction to Anthropology. ..... 3
P S 101 - (Al) American Government ..... 4
ELE 320 - Literature for Children .....  3
SED 600 - Problems in Special Education ..... 3
AED 512 - Art for Special Education ..... 4

## Bachelor's Degree Programs in Art Education Leading to Grades K-12 Endorsement

The program in art education is designed to provide undergraduates and post-degree students with learning experiences that will enable them to become successful artist-teachers. This curriculum leads to a bachelor's degree and a Michigan Provisional Teaching Certificate which enables the holder to teach art in all grades, kindergarten through grade twelve, and subjects for which the holder has minor certification, in grades seven through twelve.

Students are encouraged to enter the art education program as freshmen. Undergraduates, however, may be admitted at any time during the course of their baccalaureate studies. Those who have received a bachelor's degree with an art major can enter the program as post-degree students and generally complete the professional education and art education requirements for certification in one and one-half to two years (see below, page 92). The sequence begins in the fall semester.

Admission: see page 83. Applicants for admission to the art education program at the senior college level (junior and senior year) and post-degree level are required to submit a satisfactory portfolio of art work. Students should inquire for details at the Art Education Office, Room 163 Art Building. Art education faculty members will advise students concerning portfolio requirements.

The following requirements in various curricular areas supplement the degree requirements outlined above (see page 84 ).

PRE-PROFESSIONAL REQUIREMENTS: Students pursuing a bachelor's degree leading to grades K-12 certification in art education must complete the following courses:


PROFESSIONAL EDUCATION REQUIREMENTS: Students pursuing a bachelor's degree leading to grade K-12 certification in art education must complete the following courses:
 3
AED 411 - Theory and Practice in Art Education3
TED 578 - Directed Teaching and Conference .....  5
IED 579 - Student Teaching and Conference for Special Groups ..... 5
EHP 360 - Introduction to the Philosophy of Education .....  .3
MAJOR REQUIREMENTS: Students pursuing a bachelor's degree inart education must complete forty-eight credits in art/art educationmajor courses distributed as follows:
Required Courses:
Credits
ADR 105 - Drawing 1 .....  3
ADR 106 - Drawing II ..... 3
ADE 120 - Design I .....  3
ADE 121 - Design II .....  3
AED 117 - Methods and Materials of Sculptural Expression .....  3
AED 118 - Art Process, Perception, and Expression .....  3
AED 513 - Visual Communication .....  3
AED 517 - Methods and Materials: Fibers ..... 3
AED 519 - Light, Sound, Space, and Motion .....  3
AED 522 - Methods and Materials: Painting .....  3
AED 523 - Ceramics Education 1 .....  3
AED 526 - Methods and Materials: Wood, Metal, and Plastic .....  3
AED 528 - Methods and Materials: Printmaking .....  3
ADR 207 - Beginning Life Drawing .....  3
ASL 215 - Introduction to Sculpture .....

## Recommended Electives:

AED 520 - Computer Programmed Multi-Screen, Multi-Image Presentations. .....  3
AED 615 - Instructional Applications of Computer Graphics .....  3
AED 622 - Drawing and Watercolor: Field Studies .....  .3
AED 623 - Ceramics Education II .....  3

MINOR REQUIREMENTS: Students pursuing a bachelor's degree in art education must complete a sufficient number of credits to constitute a minor. Minor concentrations are of two kinds: a single subject minor consisting of twenty credits in one subject area; and a group minor consisting of twenty-four credits distributed among various, but related, subject areas. Students anticipating teaching at the secondary level are strongly advised to complete an academic minor rather than a fine arts minor for certification. For the selection of minor areas of study and their requirements, see pages 89-90.

## Post-Baccalaureate Program in Art Education

Admission: Applicants to the post-degree certification program in art education must have earned a Bachelor's Degree in Studio Art and must submit an acceptable portfolio prior to student teaching. This program can usually be completed within a year and one-half to two years if the applicant begins in the Fall semester. Art Teaching Laboratory and Student Teaching in Elementary and Secondary levels follow in sequence. Art Teaching Laboratory is offered only in the fall semester. Student Teaching can only be arranged during the regular school year. Conditional application for winter semester Student Teaching must be accomplished by mid-September.

PROGRAM REQUIREMENTS consist of a professional education sequence (twenty-two credits), a methods and materials sequence (twenty-four credits), and either a single subject minor (twenty credits) or a group minor (twenty-four credits). Students anticipating teaching at the secondary level are strongly advised to complete an academic minor rather than a fine arts minor for certification. For the selection of minor areas of study and their requirements, see pages 89-90.

## PROFESSIONAL EDUCATION(Twenty-five Credits)

EDP 331 - Educational Psychology .....  3
RDG 443 - Teaching Reading in Subject Matter Areas .....  3
TED 578 - Directed Teaching and Conference .....  5
TED 579 - Student Teaching and Conference for Special Groups .....  5
EHP 360 - Introduction to the Phiosophy of Education .....  3
METHODS AND MATERIALS COURSES (Twenty-four Credits)
AED 117 - Methods and Materials of Sculptural Expression .....  3
AED 118 - Art Process, Perception, and Expression. .....  3
AED 513 - Visual Communication .....  3
AED 517 - Methods and Materials: Fibers .....  3
AED 519 - Light, Sound, Space, and Motion. .....  3
AED 523 - Ceramics Education I .....  3
AED 528 - Methods and Materials: Printmaking .....  3
Electives: One of the following
AED 520 - Computer Programmed Multi-Screen, Multi-Image Presentations. .....  3
AED 522 - Methods and Materials: Painting. .....  3
AED 526 - Methods and Materiais: Wood, Metal, and Plastic .....  .3
AED 615 - Instructional Applications of Computer Graphics. .....  3
AED 622 - Drawing and Watercolor - Field Studies .....  3
AED 623 - Ceramics Education II .....  3

## Bachelor's Degree Programs Leading to Vocational Education Endorsement

Vocational education programs are offered in four curricular areas: business/distributive education, family life education, health occupations education, and industrial education. With the exception of the major in industrial arts (page 95), all of the majors offered under these generic headings lead to two kinds of certification: secondary school certification and vocational endorsement. The industrial arts major leads to secondary school certification only.

All students in the program must complete a vocationally-certifiable major, a teaching minor, and the baccalaureate degree, and have acquired two years or 4,000 clock hours of recent relevant work experience in the area of the major. Students majoring in consumer home economics or industrial arts are not required to have work experience.

## Business and Distributive Education

The business/distributive education curricula are based on competencies necessary for the preparation and certification of teachers of business or distributive education. Coterminous programs leading to the bachelor's degree, recommendation for a provisional teaching certificate, and recommendation for vocational endorsement are offered.

There are certain competencies common to both the business education major and the distributive education major. In each field it is necessary to have forty credits in pre-professional course work, an English/Speech minor of twenty-four credits, thirty-four credits in professional education, a sequence of courses in business/distributive education, and a teaching major of thirty-six credits in business and related fields. A Plan of Work must be completed and approved by an adviser before registering for the second term in the business/distributive education program.

Admission Requirements: In addition to the regular admission procedures (see page 83), each applicant must have a personal interview with a business/distributive education adviser and complete a Plan of Work.

DEGREE REQUIREMENTS: The following requirements in various curricular areas supplement the degree requirements outlined on page 84.

PRE-PROFESSIONAL REQUIREMENTS: Students seeking a bachelor's degree leading to either businesss education or distributive education certification must complete twenty-four credits in the following courses:


PROFESSIONAL EDUCATION REQUIREMENTS: The students majoring in business education have several career options available to them. These options include teaching office occupation courses at the secondary level, teaching at the community college level, teaching in business, or securing supervisory/management positions in business.

All students in the business/distributive education degree program must complete a professional education sequence; however, those students who do not require a teaching certificate are directed to elect the second option in the following curricula.

NOTE: Professional education courses can be taken only after admission to the College of Education and satisfactory completion of the University English Proficiency requirement (see pages 21-22).

## Option I: Secondary Teaching Certification

Credits
BDE 532 - Business/Distributive Education Methods: Typewriting......................... 3
TED 516 - Analysis of Secondary School Yeaching............................................. 3
V 5541 - Vocational Education Procticum in Instruction................................... 4
VE 693 - Special Problems in Vocational Education............................................ 3
RDG 443 - Teaching Reading in Subject Matter Areas....................................... 3
TED 578 - Directed Teaching and Conference .......................................................
EDP 548 - Addescent Psychology ................................................................... 3
EHP 360 - Introduction to the Philosopty of Education.......................................... 3

## Option II: Non-Certification

BDE 532 -- Business/Distributive Education Methods: Typewriting......................... 3
TED 516 - Analysis of Secondary Schood Teaching............................................. 3
V E 541 - Yocational Education Practicum in Instruction.................................... 4
V E 693 - Special Problems in Vocational Education................................................ 3
EDP 548 - Addolescent Psychology ................................................................ 3
Instructionar Technology electives .................................................................. 9
RDG 443 - Teaching Reading in Subject Matter Areas........................................ 3
TED 602 - Computer Applications in Teaching 1................................................ 3
MAIOR AREAS OF STUDY: All students seeking a bachelor's degree in business education or distributive education must complete one of the following majors.
Business EducationCredits
BDE 530 - B./D. Ed. Word Processing I: Typewriting .....  3
BDE 537 - B./D. Ed. Word Processing ill: Principies. .....  3
BOE $630-$ B./D. Ed. Cooperative Internship ..... $1-6$
ACC 301 - Elementary Financial Accounting Theory .....  3
MKT 530 - Marketing Management .....  3
ACC 351 - Business Law 1 .....  3
MGT 550 - Organization and Management Theory .....  3
MAT 150 - Finite Mathematics for the Social and Management Sciences .....  3
MGT 566 - Managing the Small Business ..... 3
CSC 100 - (CL) Introduction to Computer Science .....  3
ANT 315 - (FC) Anthropology of Business .....  3
Distributive Education
SDE 530-B./D. Ed. Word Processing : Typewiting ..... 3
BOE 630 - Business/Distributive Education Cooperative Internship ..... 3
MGT 550 - Organization and Management Theory .....  3
MGT 565 - Managing the Small Business. .....  3
ACC 301 - Elementary Financial Accounting Theory .....
ACC 351 - Business Law 1 .....  3
MKT 530 - Marketing Management .....  3
MKT 549 - Principles of Advertising .....  3
AFA 546 ~ Merchandising II .....  3
AFA 547 - Visual Merchandising: Display .....  3
CSC 100 - (CL) Introduction to Computer Science ..... 3
MAT 150 - Mathematics for the Social and Management Sciences. .....  3
ANT 315 - Anthropology of Business ..... 3

ENGLISH/SPEECH MINOR: All students seeking a bachelor's degree in business/distributive education must complete twenty-four credits in the following minor concentration:

## Required Courses



## Electives

ENG 501 - Advanced Expository Writing ..... 3
SPC 520 - Group Communication and Human Interaction .....  .3
SP 210 - News Reporting ..... 4
SPO 204 - Voice and Articulation .....  3

## Family Life Education

Family life education is an undergraduate program preparing students for teaching both consumer home economics and home economics related occupations in middle and high school. Course work in this program reflects current emphases of the Michigan Home Economics Curriculum Guides, Michigan's Home Economics Standards Review process, and conforms to guidelines of the Annual State Plan for Vocational Education in Michigan. Programs are offered with concentrations in child care services, clothing management, consumer home economics, food management, and home furnishings. Students who plan to take most or all of their first two years of course work (particularly work in the major) may find it advantageous to consult an adviser in the program upon beginning community college work.

Consumer Home Economics: This program requires thirty-seven credits, selected from each of the following areas: a) clothing and textiles, b) foods and nutrition, c) child and human development (with actual nursery school experience), d) personal and family relationships, e) parenting, f) consumer education and management problems, g)
housing, equipment, and interior design. Additionally, a twenty credit unit minor or a twenty-four credit group minor is required. Social science or natural science is usually recommended as a minor; however, students may choose any subject taught in the secondary school or one of the approved occupational programs: child care services, food management, clothing management, or home furnishings.

Home Economics Related Occupations: This program prepares students for teaching positions which emphasize the skills and competencies needed for entry-level jobs in food management, child care services, clothing management, and home furnishings. Majors will usually teach a single specialized subject to eleventh or twelfth grade students in a comprehensive high school or in an area vocational center. In many high schools the teacher of such courses also coordinates the cooperative work experience and assists with job placement for graduates. The program consists of either a thirty-credit unit concentration, or a thirty-six credit combined concentration; for the latter option, an adviser should be consulted. Minor requirements are as stated above for consumer home economics.

## Admission Requirements: see page 83.

DEGREE REQUIREMENTS: The following requirements in various curricular areas supplement the degree requirements outlined on page 84.

PRE-PROFESSIONAL REQUIREMENTS: Students seeking a bachelor's degree with certification in family life education must complete the following College pre-professional requirements:

TES Credits


ENG 102 - ( 8 C) Introductory College Writing .................................................. 4


PHY 102 - (PS) Conceptual Physics: The Basic Science...................................... 4
CHM 100 - (PS) Chemistry and Your World...............................................................

SOC 200 - (SS) Understanding Human Society ................................................ 3


PSY 101 - $\langle$ LS $\rangle$ Introductory Psychology ......................................................... 4
PSY 230 - Psychology of Adjustment .......................................................................
SOC 541 - Marriage and Family Problems ...................................................... 3
UGE 100 - 〈GE) The University and its Libraries ....................................................... 1
PROFESSIONAL EDUCATION REQUIREMENTS: All students pursuing a bachelor's degree with certification in family life education must complete the following sequence of professional education courses.

NOTE: Professional education courses can be taken only after admission to the College of Education and satisfactory completion of the University English Proficiency requirements (see pages 21-22).

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CONCENTRATION AREAS: Students pursuing a bachelor's degree with a major in family life education must complete one of the following concentrations:

## CHILD CARE SER VICES CONCENTRATION

Credits
PSY 240 - Developmental Psychology .....  .4
PSY 243 - Applied Human Development: Infancy. .....  .4
PSY 244 - Applied Human Development: Childhood. ..... 4
PSY 341 - Day Care Administration .....  3
PSY 342 - The Young Child in the Physical Environment. ..... 2
PSY 348 - Parent-Chidd Interaction Across the Life Span ..... 3
PSY 547 - Developmental Assessment of the Young Child .....
PSY 548 - Child Development Principles Applied to Preschool Programming. ..... 3
PSY 580 - Maturation and Deyelopment of the Individual ..... 3
SED 503 - Education of Exceptional Children ..... 3
CLOTHING MANAGEMENT CONCENTRATION
AFA 241 - Textiles ! .....
AFA 242 - Clothing Selection and Construction ..... 3
AFA 341 - Textiles II ..... 3
AFA 346 - Introduction to Merchandising ..... 4
AFA 347 - Merchandise Information .....  .4
AFA 542 - Fashion Design: Tailoring ..... 3
AFA 545 -- Fashion Design: Draping. ..... 3
AFA 642 - Advanced Problems in Apparel Design and Construction. .....  3
Elective. ..... 4.6
CONSUMER HOME ECONOMICS CONCENTRATION
Credits
NFS 203 - (LS) Introductory Nutrition .....  3
NFS 213- Introductory Food Science. ..... $\ldots .$.
NFS 214 - Introductory Food Science Laboratory .....  2
AFA 241 - Textiles 1 .....  3
AFA 242 - Clothing Selection and Construction .....  3
Ail 260 - Fatroduction to Interior Design and Housing. ..... 3
FLE 547 - Teaching Family Financial Management. .....  3
FLE 641 - Survey of Home Economics Related Occupational Courses. .....  3
PSY 244 - Applied Human Development: Childchood .....  .4
PSY 348 - Parent Child interaction Across the Life Span .....  3
HE 434 - Reproductive Health Education .....  3
Electives. ..... 3
FOOD MANAGEMENT CONCENTRATION
NFS 213 - Introductory Food Science. .....  2
NFS 214 - introductory Food Science Laboratory .....  2
NFS 221 - Human Nutrition. ..... 3
NFS 535 - Organization and Management of food Service Systems. .....  4
NFS 616 - Food Standards and Quality Control .....  .2
NFS 617 - Food Standards and Quality Control Laboratory .....  2
Electives ..... 12

Students who intend to fulfill requirements for the food management major by attending a community college program should consult with an adviser in Room 273 Education Building. Specific courses with transferable credit are available at some community colleges.

## HOME FURNISHINGS CONCENTRATION

The program in Home Furnishings consists of an individually arranged sequence of courses. For specific information see the departmental adviser in Room 273 Education Building.

MINOR AREAS OF STUDY: Students pursuing a bachelor's degree with certification in family life education must satisfy the requirements of a minor concentration. Available minor areas of study can be found on pages 89-90.

## Health Occupations Education

Health occupations education prepares teachers for those secondary school programs which prepare high school students for entry-level occupations in a variety of health fields. The program is designed for persons who are currently teaching in a secondary school health occupations program on an annual authorization, or persons who have a major in one of the health occupations taught in a secondary school and who wish to earn a secondary teaching certificate with vocational endorsement.

Admission Requirements: 1) completion of the teaching major; 2) possession of licensure or certification in the applicant's health field by the State of Michigan (if one is required); 3) completion of two years or 4,000 clock hours of recent and relevant work experience prior to admission. This work experience should have been in the last six years.

General Requirements: Students are expected to meet the same general requirements as majors in other educational areas. This includes a minimum of a teaching major, a unit or group minor, selected courses in a physical science (such as biology, chemistry, physiology, and anatomy), some social science, related electives selected by the student, and the professional education sequence. Majors should include work in current health care and gerontology.

DEGREE REQUIREMENTS: The following requirements in various curricular areas supplement the degree requirements outlined on page 84.

PRE-PROFESSIONAL REQUIREMENTS: Students seeking a bachelor's degree leading to certification in any of the health occupations majors must complete the following pre-professional requirements:


PROFESSIONAL EDUCATION REQUIREMENTS: Students seeking a bachelor's degree leading to certification in any of the health occupations majors must complete the following professional education sequence:

TED 516 - Analysis of Secondary School Teaching .............................................. 3
EDP 548 - Adolescent Psychology ................................................................. 2
V 541 - Vocational Education Practicum in Instruction.................................... 4
FLE 501 - Methods of Teaching Health Occupations Education ............................. 4
RDG 443 - Teaching Reading in Subject Matter Areas........................................ 3
TED 578 - Directed Teaching and Conference ............................................... 10
V 693 - Special Problems in Vocational Education......................................... 4
EHP 360 - Introduction to the Philosophy of Education ....................................... 3
TED 602 - Computer Applications in Teaching I ................................................. 3
MAJOR AREAS OF STUDY: Students seeking a bachelor's degree with a major in any of the health occupations must be certified as a practitioner in one of the following professions: registered nurse, medical technologist, dental hygienist, dental assistant, or medical
assistant. This certification is accepted in lieu of major course work done at Wayne State University and is entered in the student's record on a transfer credit basis.

MINOR AREAS OF STUDY: Students seeking a bachelor's degree leading to certification in any of the health occupations must satisfy the requirements of a minor concentration. Available minor areas of study can be found on pages 89-90.

Continuing or Five Year Professional Certificate requirements with full vocational authorization requires an eighteen credit planned program which includes a minimum of ten semester credits in vocational course work or completion of a master's degree. The program adviser can assist with either of these options. Persons who are currently teaching on an annual authorization may wish to consult the program adviser about full certification. An option exists which allows one to continue with employment while qualifying for certification. Information regarding such options will be mailed on request.

## Industrial Education

This program is offered with concentrations in industrial arts and industrial education. The program prepares students to teach industrial arts at the junior and senior high school levels, or to teach vocational education in secondary schools or community colleges. For the vocational option, students pursue one of the vocational industrial concentrations.

## Admission Requirements: see page 83.

Transfer Admission: Planned programs are available to transfer credit earned for certain technical courses from selected community colleges. These programs provide the student with a majority of the technical courses needed for a teaching major in industrial education. The industrial education staff must be consulted regarding these programs at cooperating community colleges prior to enrollment. Subsequently, all arrangements must be approved by the adviser.

DEGREE REQUIREMENTS: The following requirements in various curricular areas supplement the degree requirements outlined on page 84.

PRE-PROFESSIONAL REQUIREMENTS: All students seeking a bachelor's degree leading to certification in the vocational areas of industrial education must complete the following courses:

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PROFESSIONAL EDUCATION REQUIREMENTS: All students in the industrial education degree program must complete a professional education sequence, however, those students who do not require a teaching certificate are directed to elect the second option in the following curricula.

NOTE: Professional education courses can be taken only after admission to the College of Education and satisfactory completion of the University English Proficiency Requirements (see pages 21-22).
OPTION I: Secondary Teaching Certificate
Credits
TED 516 - Analysis of Secondary School Teaching .....  3
RDG 443 - Teaching Reading in Subject Matter Areas .....  3
EDP 548 - Adolescent Psychology ..... 2
VE 541 - Vocational Education Practicum in Instruction .....
IED 677 - Methods and Materials of Instruction II - Industrial Education .....
TED 578 - Directed Teaching and Conference ..... 10
VE 693 - Special Problems in Yocational Education .....  .4
OPTION II: Non-Certificate
TED 516 - Analysis of Secondary School Teaching .....  3
RDG 443 - Teaching Reading in Subject Matter Areas. ..... 3
EDP 548 - Adolescent Psychology .....  2
V E 541 - Vocational Education Practicum in Instruction ..... 4
IED 677 - Methods and Materials of Instruction II - Industrial Education .....  .4
EHP 360 - Introduction to the Philosophy of Education .....
IT 510 - Using Audiovisual Methods, Materials and Equipment .....  2
15512 - Instructional Materials Workshop .....  2
I 513 - Computer-Programmed Multi-Screen/Multi-Image Presentations .....
Electives. ..... 4.6

CONCENTRATION AREAS: Students seeking a bachelor's degree leading to certification in industrial education must complete one of the following concentrations.

## INDUSTRIAL ARTS CONCENTRATION(Thirty-six Credits)

## 1. Must take at least two courses from each of the following groups:

| a. Metal Machining | d. Woodshop |
| :--- | :--- |
| b. Drafting | e. Metals |
| c. Electricity/Electronics |  |

c. Electricity/Electronics
2. Must take one course from each of the following groups:
$\begin{array}{ll}\text { a. Auto Mechanics } & \text { d. Printing/Graphic Arts } \\ \text { b. Fluid Power } & \text { e. Welding }\end{array}$
b. Fluid Power

## INDUSTRIAL EDUCATION CONCENTRATIONS (Thirty Credits)

Vocational certification with this major requires two years of recent and relevant employment experience in the occupational area in which the candidate intends to teach; as well as thirty credits of technical courses in one of the following concentrations:
a. Architectural Drafting
g. Drafting
b. Auto Mechanics
h. Machine Jrades
c. Building Trades
i. Printing (Graphic Arts)
d. Criminal Justice
j. Welding
e. Cosmetology
k. Heating-Refrigeration
f. Electronics

Trade related technical course work in an approved community college apprenticeship program may be used in establishing the concentration in the industrial-vocational education. If the total number of credits or technical trade-related course work is short of the required total for a concentration, additional technical courses in the specified field may be taken from an appropriate technology program in a community college.

MINOR AREAS OF STUDY: Students seeking a bachelor's degree leading to certification in industrial arts education must complete either an academic minor (see minors in secondary education, pages 89-90) or one of the following options related to their specific majors.

## INDUSTRIAL ARTS <br> GROUP MINOR (Twenty-four Credits)

Students with an industrial-vocational concentration may satisfy their minor requirements by completing twenty-four credits in the following technical areas in which they have not accrued concentration credit:
a. Auto Mechanics: engine maintenance (minimum: one course)
b. Dratting (minimum: two courses)
c. Electricity/Electronics (minimum: two courses)
d. Metal Machining (minimum: two courses)
e. Printing
f. Welding
g. Woodshop or Woodworking

CREDIT BY EXAMINATION: Credit in some occupational areas may be earned through competency examinations which satisfy part or all of the above-mentioned concentration and minor requirements. Students should consult the coordinator in the individual curriculum areas for a list of available topics.

## TEACHING CERTIFICATES

One of the characteristics of present day education is the specialization of teaching, particularly at the secondary level, and, to some extent, at the elementary level. This specialization is related not only to the subject-matter fields but also to the age groups of school children. The Michigan Certification Code provides for specialization in either the elementary or the secondary school areas by authorizing state certification for teaching on those two levels. Thus, a person who has kindergarten through grade eight certification is not legally qualified to teach in the secondary schools above grade eight, and a person with grades seven through twelve certification is not legally qualified to teach below grade seven. In certain fields such as art, physical education, school library education and music education, the holder of a 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 a major and a minor teaching field. 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 or five year professional 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 and five year professional 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 certifcate 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 with the bachelor's degree upon the completion of the four-year program. (In exceptional circumstances, the degree may be granted without the teachers certificate if the student meets all degree requirements but is unable to meet all requirements for the certificate.) They are also granted to students who hold a bachelor's or master's degree upon completion of a specified professional sequence, and to holders of either of the provisional certificates listed below who wish to qualify for the other.

## Elementary Provisional <br> Certificate for Kindergarten through Grade Eight*

1. The candidate must have graduated with a bachelor's degree from an approved or accredited teacher-education institution.
2. The academic background must include a single subject major or a group major, and one minor. A single subject major is defined as a minimum of thirty credits and a group major as a minimum of thirty-six credits. A single subject minor is a minimum of twenty credits, and a group minor is a minimum of twenty-four credits. Majors and minors must correspond to disciplines listed on the State of Michigan Approved List of Majors and Minors.
3. Completion of a professional education sequence is required.

Secondary Provisional Certificate for Grades Seven through Twelve

1. The candidate must have graduated with a bachelor's degree from an approved or accredited teacher-education institution.
2. The academic background must include a single subject major or a group major, and one minor (may be a group minor) in subjects or subject fields in which the applicant expects to teach. 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.

## Additional Endorsements

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.

## Certification for Post-Baccalaureate Students

A college graduate holding the bachelor's or master's degree may qualify for a teaching certificate by completing a Master of Arts in Teaching degree program, or by completing a recognized post-degree program. See the Wayne State University Graduate Bulletin for general requirements for the Master of Arts in Teaching degree. The student may need to supplement previous degree work in order to satisfy major and minor provisions of the Michigan certification code.

## Continuing or Five Year <br> Professional 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.'

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 or five year professional certification with a vocational endorsement.

All candidates for an elementary continuing or five year professional certificate must have completed in their undergraduate or post-graduate preparation six credits in reading instruction, three of which must be reading in the content areas, in order to qualify for a continuing or five year professional certificate. Consult a counselor in Room 489, Education Building, for specific requirements.

All candidates for a secondary continuing or five year professional 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 this certification.

## Bilingual/Bicultural Endorsement

The Bilingual/Bilcultural 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 on requirements for this endorsement may be obtained in Room 213 Education Building.

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## STUDENT TEACHING

## Application

Each student must make application for student teaching in person during the appropriate application period. The date a completed application form is submitted to the Student Teaching Office will determine the semester during which student teaching will take place. Student teaching application periods are as follows:

Fall semester... $\qquad$ the preceding September, October, November, December, January Winter semester $\qquad$ the preceding April, May, June, July, August

## 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 which is to be submitted with application forms.
2. Complete application forms provided by the Student Teaching Office, 223 Ęducation Building, during appropriate application period.

## 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 269, 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 489, Education Building.

## COURSES OF INSTRUCTION ${ }^{1}$ <br> Teacher Education Division (TED)

## 209. Practicum for School Paraprofessionals II. Cr. 1-6(Max. 8)

 Prereq: sophomore standing. Offered for S and U grades only. For school paraprofessionals in a teacher education program. Supervision of school paraprofessionals in classroom settings. Occasional seminars continue exploration of topics studied in TED 109.225. Introduction to Education. Cr. 3

Exploration of teaching and schools in today's and tomorrow's society. Open to all students interested in discipline of professional education as a tool to understanding our multicultural society.
355. Teaching: Theory and Practice. Cr. 5

Prereq: admission to teacher certification program. Structure, function and purposes of schools in society and how they are affected by various philosophies of education. Organization and management of classrooms, development of instructional goals, use of tests and other measures, and utilization of professional resources in the community. Coursework includes laboratory experiences in schools.
356. Pre-Student Teaching Field Experiences. Cr. 3(Max. 6) Second phase of pre-student teaching field experience. Work in classrooms is assigned and evaluated by both an experienced public school teacher and a university faculty member.
430. (H E 330) Health of the School Child. Cr. 3

Prereq: HEA 231. Health status and problems of youth at various stages of growth and development; teacher's role in health protection and promotion.
(Y)
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.

## 527. Methods and Materials of Middle School Instruction. Cr. 3-9(Max. 9)

Prereq: teaching experience or consent of adviser. Physical and emotional status of middle school students; current trends of curricula; effective teaching strategies; evaluating curricula and pupil progress.
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.
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.

[^16]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.
575. (D E 575) Seminar in Driver Education and Traffic Safety. Cr. 3
Prereq: TED 574. Behavioral, administrative, and professional aspects of the teaching role in driver and traffic safety education.
(W,S)

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

Prereq: admission to student teaching. Offered for $S$ and $U$ grades only. Directed teaching in schools at level for which students are preparing for certification. Includes regular conference in which teaching methods in various fields are explored.
(F,W)
579. Student Teaching and Conference for Special Groups. Cr. 1-10
Prereq: admission to student teaching. Offered for S and U grades only. Directed teaching in schools at level for which advanced students are preparing for certification; discussion of educational issues. For students seeking endorsements in special areas; for example: special education, early childhood, art.
(F,W)
581. (DNC 581) Creative Dance for Children. 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.
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.
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.
( $\mathrm{F}, \mathrm{W}$ )
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 $\mathrm{K}-12$ curriculum.
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.

## Art Education (AED)

117. Methods and Materials of Sculptural Expression. Cr. 3 Required for certification in art education and prior to student teaching. Material fee as indicated in Schedule of Classes. Exploration of three-dimensional forms using various media; emphasis on sculptural concepts, materials, tools and techniques related to teaching sculpture on the elementary and secondary level.
118. Art Process, Perception and Expression. Cr. 3

Material fee as indicated in Schedule of Classes. Study and analysis of the two-dimensional art process related to individual development and response. Examination of observation and image formation, including the collection of visual information for two-dimensional production. Investigation of geometric perspective and visual illusion. Children's developmental use of symbols and related research in creativity, visual thinking and brain organization and function. Selected examples of drawings and paintings from various cultures examined in relation to learning and teaching.
212. Secondary Art Teaching Laboratory. Cr. 3

Prereq: AED 117 and 118 with sophomore standing or above. Material fee as indicated in Schedule of Classes. Alternate requirement to AED 211. Laboratory experience in teaching art to middle school or high school students to include planning, producing visual aids, evaluating adolescent work and self-assessment in teaching by using video tape recording equipment.
411. Theory and Practice in Art Education. Cr. 3

Prereq: AED 211 or 212 ; prereq. or coreq: student teaching. Required for certification in art education. Lectures, field trips, readings, research, and writing pertaining to the history, philosophies, purposes and practices of art education; philosophical influences on art education. Required teaching field experience in alternative setting.

## 501. Art Teaching Laboratory. Cr. 3 (Max. 6)

Prereq: consent of instructor. Material fee as indicated in Schedule of Classes. Laboratory experience in teaching art to upper elementary children, middle school and high school students. Includes planning, producing visual aids, evaluating children's work and peer- and self-assessment in teaching using video tape recording equipment. (F)
510. Art for Special Groups. Cr. 1-3(Max. 9)

Material fee as indicated in Schedule of Classes. Art experiences designed for the specific needs of special groups. Topics to be announced in Schedule of Classes .
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.
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.
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.
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.
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.
520. (I T 513) Computer-Programmed Multi-screen/Multi-image Presentations. Cr. 3(Max. 9)
Material fee as indicated in Schedule of Classes. Examination of methods and procedures for producing multi-screen/multi-image presentations including the use of micro-processing computers. Students plan and produce a multi-screen or multi-image presentation.
(W)
522. Methods and Materials: Painting. Cr. 3(Max. 9)

Material fee as indicated in Schedule of Classes. Methods, materials and processes suitable for teaching painting in the schools. Subject selection, composition, surface selection and preparation, mixing and application of paint, finishing, and presentation. Students develop basic skills in painting for personal artistic expression.

## 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 benfits and procedures for working with people of various ages and the management of materials for teaching.

## 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.

## 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 viual 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.

## 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.
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.
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.
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)

## 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.
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.
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.
656. Teachìng Methods ìn 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.
659. Culture and Language in Bilingual/Bicultural Education. Cr. 1-3
Prereq: BBE 656. Research and application of multiculture activities for designing processes to bring language and culture, and instruction in English, into the classroom.
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.
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.

## 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.

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

Prereq: TED 355, BDE 530 or consent of instructor; coreq: V E 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.

## 533. Business/Distributive Education Methods: General. Cr. 4

Prereq: TED 516, BDE 530; coreq: V E 541. Determination and development of needed minimum skills for beginning office occupations. Methods, materials and equipment for teaching selected office occupation subjects. Students demonstrate selected course objectives in a field setting.
(I)
537. Business/Distributive Education Word Processing III: Principles. Cr. 3
Prereq: BDE 535 or typewriting course. Principles and concepts in the design, utilization and evaluation of word processing systems in business, government, and education. Laboratory and field trips familiarize student with current equipment.
538. Business/Distributive Education Word Processitg IV. Cr. 3 Principles and procedures for designing, teaching and evaluating a competency-based word processing program in a business or educational setting.
553. Business/Distributive Education Methods: Marketing and Distributive Education. Cr. 4
Prereq: TED 516, BDE 530; coreq: V E 541. Determination and development of needed minimum skills for beginning distributive occupations. Methods, materials, and equipment for teaching selected distributive occupation subjects. Students demonstrate selected
course objectives in a field setting.
630. Business/Distributive Education Cooperative Itternship. Cr. 1-6
Prereq: consent of instructor. Supervised work experience designed to correlate classroom theory with current word processing, secretarial, or selected distributive occupations.
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.

## Counselor Education (CED)

110. Introduction to Guidance and Counseling Services. Cr. 3 An overview of counseling and guidance theories, methodologies, and practices in various service settings.

## 120. Social Issues and Counseling Services. Cr. 3

Prereq: CED 110, junior standing. Examination of social issues pertaining to counseling services; firsthand knowledge of counseling service agencies and resources; referral procedures.
150. Basic Helping Skills Development. Cr. 3

Prereq: CED 110 and 120. Attending, observing, listening and responding skills in counseling. Role-working as the vehicle by which students may practice the helping skills.
230. Helping Group Interaction. Cr. 2

Prereq: CED 110, 120. Offered for $S$ and $U$ grades only. Introductory course in small group participation. Students are exposed to the dynamics of small groups.
270. Career Development, Career Options, and the University Student. Cr. 2
Offered for $S$ and $U$ grades only. Identification of educationally and vocationally relevant self-characteristics; examination of fields of study and vocational opportunities; sources of further career development assistance.
290. Introduction to Guidance and Counseling: Philosophical Perspectives. Cr. 3
Various views of human nature studied and evaluated in light of their implications for the helping professions.
330. Group Procedures in Counseling Services. Cr. 3

Prereq: junior standing and CED $110,120,230$. An overview of group techniques and strategies to help facilitate self-understanding and enhance students' capability to work in counseling services. (W)
350. Advanced Helping Skill Development. Cr. 3

Prereq: junior standing and CED $110,120,150$. Introduction and development of advanced responding, personalizing, and initiating skills in counseling. Decision-making skills which foster behavior change applied by students in one-to-one situations; variety of intervention techniques used.
370. Introduction to Career Development. Cr, 3

Prereq: junior standing and CED 110, 120. An introduction to and overview of career development theories.
380. Ethical Issues of Counseling Services. Cr. 3

Prereq: junior standing and CED 110. Introduction to and overview of the importance and necessity of ethical standards and issues within the counseling services.
460. Field Work in Counseling Services. Cr. 3-6

Prereq: senior standing; completion of 16 credits. A field placement experience in counseling services. (F,W)
480. Special Project in Counseling Services. Cr. 3(Max. 9) Prereq: senior standing; completion of 16 credits. Senior project in counseling services.
(F,W)
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.
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.
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.
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.
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).
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.
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.

## 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.
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.
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.

## Education (ED )

390. Directed Study. Cr. 1-6(Max. 6)

Prereq: written consent of adviser.
598. Field Studies. Cr. 1-8(Max. 8)

Prereq: consent of adviser or instructor. Supervised professional study in field settings.

## Educational History and Philosophy (EHP)

## 360. Introduction to the Philosophy of Education. Cr. 3

Leading philosophies of education as they bear upon education as a profession and as a discipline.

## Educational Psychology (EDP)

## 331. Educational Psychology, Cr, 3

Introductory course in educational psychology. Topics include, but are not limited to: child and adolescent development, cognitive and behavioral learning theories, information processing, motivation and evaluation. Includes study of exceptional children and those with cultural differences.
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.
545. Child Psychology. Cr. 2-3

Basic concepts, research findings and problems regarding child, pre-adolescent and early adolescent developmental needs as they apply to school and home environments; includes study of exceptional children and those with cultural differences.
548. Adolescent Psychology. Cr. 2-3

Basic concepts, research findings and problems regarding early adolescent and adolescent developmental needs as they apply to school and home environments; includes study of exceptional children and those with cultural differences.
621. Foundations of Educational Psychology. Cr. 3

Introduction to current issues in educational psychology. Topics include, but are not limited to: child and adolescent development, learning, motivation, information processing and evaluation. Includes study of the exceptional child and those with cultural differences. (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.
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.
649. Mental Health and Sexuality. Cr. 2

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

## 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.
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.

## Elementary Education (ELE)

## 320. Literature for Children. Cr. 3

Literature appropriate for use with children from preprimary through middle school age.
330. Teaching Language Arts: Preprimary-9. Cr. 3

Prereq: admission to teacher certification program. Developing communication skills in the elementary and middle school classrooms: thinking, listening, speaking, and writing. Implications of multiculturalism and bilingualism. Teaching children with special needs. Reporting to and collaborating with parents.
(F,W)

## 332. Teaching Reading: Preprimary-9. Cr. 3

Prereq: admission to teacher certification program. Curriculum goals and content, teaching strategies and instructional materials. Evaluating reading skills and reporting to coworkers and parents. Organization and management of classroom reading programs. Collaborating with parents. Using professional resources in the community. Teaching children with special needs.
( $\mathrm{F}, \mathrm{W}$ )
340. Teaching Mathematics: Preprimary-9. Cr. 3

Prereq: admission to teacher certification program. Objectives, curriculum content, teaching strategies, evaluation of instruction materials. Teaching children with special needs. Reporting to and collaborating with coworkers and parents.
(F,W)

## 350. Teaching Science: Preprimary-9. Cr. 3

Prereq: TED 355; admission to teacher certification program. Goals and significant areas of study in the elementary school science curriculum. Introduction to teaching resources including science activities, field trips, print and non-print materials.
( $\mathrm{F}, \mathrm{W}$ )

## 360. Teaching Social Studies: Preprimary-9. Cr. 3

Prereq: TED 355; admission to teacher certification program.

Objectives, curriculum content and organization, teaching strategies, instructional materials. Evaluation of learning. Utilization of community resources.
( $\mathrm{F}, \mathrm{W}$ )
370. Teaching Creative Arts: Preprimary-8. Cr. 2

Objectives, teaching strategies, and the role of the creative arts in the elementary school curriculum.
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.
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, fieid experience, reference materials, audio-visual resources in the lives of young children. Topics to be announced in Schedule of Classes.
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.
607. Parent Intervention Programs in Home and School. Cr. 3 Program models, research, and relationship between school and parent intervention programs.
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.
629. Language Arts Instruction: Preprimary-9. Cr. 3

Prereq: admission to MAT degree program. Developing thinking, listening, speaking and writing skills in elementary and middle schools. Students plan, implement and evaluate learning experience with children under professional guidance.
(F,W)
630. Language Arts Curriculum: Preprimary-9. Cr. 3

Content of language arts programs. Objectives, procedures, materials, and organizational patterns.
631. Reading Instruction: Preprimary-9. Cr, 3

Prereq: admission to M.A.T. degree program. Developing reading skills in elementary and middle schools. Students plan, implement and evaluate learning experience with children under professional guidance.
(F,W)
632. Reading Curriculum: Preprimary-9. Cr. 3

The reading process; procedure, materials and organizational patterns used when teaching reading.
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.
639. Mathematics Instruction: Preprimary-9. Cr. 3

Prereq: admission to MAT degree program. Developing mathematics skills in elementary and middle schools. Students plan, implement
and evaluate learning experience with children under professional guidance.
640. Mathematics Curriculum: Preprimary-9. Cr. 3

Developing competence in school mathematics programs: objectives, procedures, materials, organizational patterns, evaluation.
650. Science Curriculum: Preprimary-9. 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.
660. Social Studies Curriculum: Preprimary-9. Cr. 3

Social studies program in elementary and middle schools emphasizing intellectual, social and affective development. Designing programs based on social priorities, modern socioeconomic, cultural, ethnic, political concepts.
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.

## English Education (EED)

## 520. Meethods of Teaching English: Grades 7-12. Cr. 3

Prereq: 18 credits in English beyond freshman composition; TED 516. Introduction to the purposes and meethods of teaching English composition and literature in grades seven through twelve.
601. Language and Reading Programs for Middle Schools. Cr. 3 Analysis and development of instructional methods and programs for improving reading and language competence of early adolescents in middle schools.
612. English Composition in Secondary Schools. Cr. 3

Prereq: EED 520 or teaching experience. Analysis of modes of writing; relationship of grammar and composition; integration with literature and reading; approaches to group and individualized instruction; relation of composition to perception, cognition, critical thinking, motivation, and self-awareness.
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.
631. Literature for Adolescents. (L S 653). Cr. 3

Prereq: directed or regular teaching. Standards for evaluating adolescent literature. Selection of literature for individual pupils in relation to interest and reading ability. Use of classroom collections. Techniques for helping pupils read poetry, drama and fiction. (W)
633. Teaching Literature in Secondary Schools. Cr. 3

Prereq: EED 520 or teaching experience. Structure of poetry, fiction and drama in relation to aesthetic, social, and psychological needs of secondary school pupils. Relationship of teaching methods to curriculum patterns.

## 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.

## 545. Teaching Consumer Home Economics and Family Living. Cr. 4

Prereq: TED 355; Coreq: VE 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.
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.

## 641. Survey of Home Economics Related Occupational Courses.

 Cr. 3Prereq: teaching experience. Experiences specifically related to teaching occupational training courses; exploration of various curricula patterns; identifying content and procedures; criterion referenced materials.

## 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.


## Instructional Technology (I T)

## 505. Technology Applications in Teaching. Cr. 3

Techniques for incorporating technology in teaching. Principles of instruction design, techniques of audio-visual aids and new technologies such as instructional video. Emphasis on the computer as a teaching tool.
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.
511. Educational Technology. (LS 636). Cr. 2

Technological applications to education, training, and instruction within educational, industrial, and human services settings. Students
examine, develop, and/or evaluate unique instructional programs. For educators and non-educators interested in exploring technological applications in education.
(Y)
512. Instructional Materials Workshop. (L S 637). Cr. 1-3(Max. 3)
Design and development of audiovisual materials for use in educational, industrial, and/or human services programs. Students produce an audiovisual presentation.

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

Material fee as indicated in Schedule of Classes. Examination of methods and procedures for producing multi-screen/multi-image presentations including the use of micro-processing computers. Students plan and produce a multi-screen or multi-image presentation.

## 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 8 mm , marking on 16 mm film, titling, recording and synchronizing sound tracks, marking on $2 \times 2$ slides, photographing 35 mm slides.
606. Scriptwriting for Instructional Video. Cr. 3

Techniques of writing scripts for instructional video productions for use in educational training or human services programs, from program concept to production-ready script.
611. Systems Techniques in Educational Planning and Management. Cr. 4
Principles of general systems theory; their applications in instructional design and project program management. Emphasis on alternative systems models of design and specific planning techniques. Topics include: systems analysis and synthesis, flow charting, data management, budgeting systems, PERT charting.
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.
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.

## Language Education (LED)

## 652. Teaching English as a Second Language/Foreign Language: Methods I. Cr. 3

Methods and techniques; fundamental theory and practice; English as an international/intranational language. Students micro-teach lessons and prepare teaching materials which emphasize the listening and speaking language skills.

[^17]language. Students micro-teach lessons and prepare teaching materials which emphasize the reading and writing language skills.
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.
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.

## 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.
( $\mathrm{F}, \mathrm{W}$ )
506. (MAT 517) Mathematics for Elementary School Teachers II. Cr. 3
No graduate credit; credit only in Coliege 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.
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.

## 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.

## 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 .

## Reading Education (RDG)

## 443. Teaching Reading in Subject Matter Areas. Cr. 3

Consideration of reading in relation to subject matter instruction. Strategies for teaching comprehension, study and application skills in the content areas. Informal diagnostic procedures. Techniques for
meeting individual needs.
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.
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.
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.

## 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.
( $\mathrm{F}, \mathrm{W}$ )
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.
506. Methods and Materials of Instruction in Secondary School Science 1. 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.
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.
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.
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.
608. Teaching Evironmental 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.

## Social Studies Education (SSE)

## 671. Methods and Materials of Instruction in Secondary Social Studies. Cr. 3

Foundations of social studies instruction and curriculum; methods of teaching in middle, junior, and senior high school.
(F,W)
673. New Perspectives in Social Education. Cr. 1-8(Max. 8)

Specialized aspects of social education: gaming and simulation, global education, law-related education, community projects, interdisciplinary approaches. Topics to be announced in Schedule of Classes .
(F,W)

## Special Education (SED)

406. Developing Observation and Assessment Skills Laboratory/Seminar. Cr. 3
Investigation and application of appropriate evaluation techniques for use with severe/profound learners in a practice setting.
407. Special Education Services to the Severely Handicapped. Cr. 3
Prereq: SED 406. Characteristics of profoundly/severely handicapped; emphasis on development of skills necessary for functioning as an adult.
408. The Exceptional Child in the Regular Classroom. Cr. 2

Offered for undergraduate credit only. Overview of characteristics of and interventions with exceptional children in regular classrooms. (Y)
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.
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.
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.
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.
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.
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.
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.
532. (SPD 508) Phonetics. Cr. 3

Multisensory study of sounds of the English language, emphasizing acoustic, physiologic, kinesiologic approaches.
533. (SPD 509) Anatomy and Physiology of the Speech Mechanism. Cr. 3
General science of normal speech; anatomy, physiology and mechanics of respiration, phonation, resonation, articulation.
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.
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.
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.
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.
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.
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.
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.
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.
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.
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.
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.
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 .
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.
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.
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.
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.
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.
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: Visualty 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.

## 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.
538. (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.

## 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.
542. 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.

## College of Engineering

DEAN: FRED W. BEAUFAIT

## Foreword

## College Organization

The academic programs of the College of Engineering are organized in two Divisions: Engineering and Engineering Technology. The Division of Engineering includes five academic Departments: Chemical and Metallurgical Engineering, Civil Engineering, Electrical and Computer Engineering, Industrial Engineering and Operations Research, and Mechanical Engineering. Programs leading to the Bachelor of Science, Master of Science, and Doctor of Philosophy degrees in engineering are offered by the five departments in the Division of engineering. Programs leading to a Bachelor of Science in Engineering Technology degree are offered in the Division of Engineering Technology.

## The Profession of Engineering

Engineering requires men and women of imagination who can plan and create. Their creations include the laser, the transistor, communication networks, automotive safety devices, systems of spacecraft telemetry and aids for the handicapped. Engineers design and simplify, refine and economize. They are pragmatists serving the needs of society through continual reconstruction and improvement of human surroundings. Engineers are responsible for the design and construction of energy generating and distribution systems, air and water pollution control projects, as well as transportation systems and the vehicles required by our mobile society. From the engineers must come anti-skid devices for hard-braked automobiles, synthetic materials, biochemicals, fire-resistant homes and 'eyes' for the blind. The engineer's resources include an intimate knowledge of scientific laws and their applications to engineering problems. An ability to use mathematics and computers and, above all, an imaginative and an inquiring mind are primary tools.

Engineers do not devote their attention solely to innovations in technology. They look beyond their inventions and conceptions to consider the societal effect of their work, including its economic, aesthetic, safety, and environmental aspects.

Engineers can start their careers in many functional roles-designer, test engineer, manufacturing engineer, sales engineer, researcher, or a combination of these and other roles. Engineering has become a profession which often leads to.executive management positions. As more and more of the decisions of management in government and business are based on technical considerations, engineers with the necessary background are called upon to make these decisions.

At present, the minimum education required for general competence in the practice of engineering is a four year collegiate program leading to a bachelor's degree in one of the fields of engineering. However, many engineering positions require an additional year of education at the graduate level leading to the master's degree. Whenever possible, students are urged to continue their education to this point. For engineering research or teaching, and in some areas of practice, the doctoral degree is recommended. For further information about graduate programs in engineering, consult the Wayne State University Graduate Bulletin.

For all engineers, continuing professional competence in the midst of our constantly changing technology requires educational renewal and a life-long dedication to continuing education. The College offers seminars, institutes and off-campus programs designed to meet this need. In addition, regular College courses are available on an elective post-degree basis.

## The Engineering Technologist

The evolution of our civilization has always been closely associated with technology and science. Now, and in the future, this association will become even more important. New knowledge has inspired advances in technology, resulting in new career opportunities: far-reaching developments have been made in communications and instrumentation technology; highly sophisticated machine tools and manufacturing processes have come into being; new energy sources and new man-made materials have been developed; and computer applications have revolutionized the techniques of industrial manufacturing and management.

This on-going expansion of scientific and engineering knowledge has changed the make-up of the engineering team with the inclusion of the engineering technologist. The engineering technologist, in cooperation with the engineer, organizes the men, materials and equipment to design, construct, operate, maintain and manage technical engineering projects. He/she should have a commitment to that technological progress which will create a better life for everyone. Because of the increasing challenges in this information age, it is no longer possible for one person to master all the knowledge and skills necessary to execute technical projects. Quite often a team effort is required, with each member of the team highly trained in a specific area. Today's engineering teams involve engineers and engineering technologists and may also include technicians, scientists, craftsmen, and other specialists.

Engineering technology supports engineering activities through a combination of scientific and professional knowledge with technological skills, and concentrates on the industrial applications of engineering. Because of the extensive variety of functional opportunities, and the wide variety of the industrial enterprises available to the engineering technologist, there has been a great deal of specialization. An engineering technologist can specialize in three related ways: discipline, function and industry. For example, the discipline could be mechanical, the function could be design and the industry could be automotive; or the discipline could be electrical, the function field installation and the industry electric power generation.

## College Facilities

In the 1986-87 academic year, the College of Engineering occupied the new, three-story addition to the Engineering Building. The College's existing facilities have been completely redesigned and extensively refurbished into a modern teaching and research facility containing instructional aids and research equipment. A new College of Engineering Computer Center, including a computer graphics and design laboratory and new computer equipment, is located in the recently renovated units. Curricula in all departments incorporate the use of computers at all levels of instruction, and students are provided easy access to necessary hardware and software. In addition to the library and general resources of the University, the College of Engineering itself has 215,500 square feet of classroom, office and laboratory space. Included in the renovated three-story engineering building are classrooms, undergraduate laboratories, departmental computer facilities, shops, and research laboratories.

The undergraduate laboratories provide facilities in such areas as computer graphics, fluid mechanics, thermal sciences, system dynamics, statistical computation and materials science. Some specific laboratories associated with departmental engineering specializations include: chemical measurements; chemical unit operations; metallurgical measurements; metallurgical processing; electron microscopy; optical metallography; soil mechanics; environmental and hydraulic engineering; roadway and building materials; structural modeling; communications; systems computers; control systems; analog circuits; digital systems; microcomputers and
microprocessor applications; power systems; fields, microwaves and optics; computer vision; high voltage research; networks, electronics, microwaves, holography and lasers; automotive engineering; human factors engineering; computer aided manufacturing; robotics; sand casting and testing; and stress analysis. These laboratories are used for instructional and research purposes along with such research facilities as a molecular beam laboratory; a clean room facility for device materials research; a biomechanics accelerator and impact laboratory; an acoustics and noise control laboratory; and a structural behavior laboratory. All of these are available for experimentation and research in connection with the undergraduate curricula on a college-wide basis.

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 are encouraged to use these facilities under the supervision of trained professionals.

Many undergraduate and graduate students pursue their studies in the College while working in local industry, either full-time or part-time, where unique research facilities unavailable on campus may be found. In such situations, students are encouraged to pursue their college-credit research at the employment site, where they work under the joint supervision of their faculty adviser and a company representative. Such research can take the form of undergraduate directed study courses, Master of Science theses, or Ph.D. dissertations.

## Accreditation

In addition to accreditation of Wayne State University by the North Central Association of Colleges and Secondary Schools, all the undergraduate curricula of the Division of Engineering leading to a Bachelor of Science degree are accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET). Curriculum accreditation is based upon careful periodic appraisal of the faculty, educational program, and facilities of the College. This approval provides assurance of an up-to-date, high quality education pertinent to the engineering profession. Such accreditation is recognized by other universities, prospective employers, and state professional licensing agencies.

## Location of the College

The College is located in the heart of Detroit, Michigan, renowned as a center of automotive engineering and production. This industrial center provides a wealth of examples of modern engineering practice and opportunities to explore the latest in vehicle design and production, automation design, steel production, transportation planning, hydraulic and pneumatic controls, electric power generation, and computer design and production. The many industries of southeastern Michigan provide engineering students with rich and varied work experiences through full or part-time employment or through the Cooperative Education Program described on page 114.

The College is affiliated with eleven other schools and colleges of Wayne State University. The University setting, with its 25,000 students, provides a broad selection of educational opportunities on an interdisciplinary basis.

## DEGREE PROGRAMS

Division of Engineering

## Bachelor of Science in

Chemical Engineering
Civil Engineering
Electrical Engineering
Industrial Engineering
Mechanical Engineering
Metallurgical Engineering
*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 Hazardous Waste Control
* Certificate in Polymer Engineering


## Division of Engineering Technology

## Bachelor of Science in Engineering Technology -with a major in

electrical/electronic engineering technology electromechanical engineering technology manufacturing/industrial engineering technology mechanical engineering technology

## DIIIIION OF ENGINEERING

## Bachelor of Science

## Recommended High School Preparation

In order to place sufficient emphasis on the English, mathematics, physics, and chemistry required for normal progress in engineering, restrictions are placed on the fifteen acceptable units of high school credit. The recommended high school preparation for admission to the College of Engineering is:

|  | number of units |
| :---: | :---: |
| English. | ............... 4 |
| Algebra... | -....... 2 |
| Plane and Solid Geometry. | 1.5 |
| Trigonometry ......................... | $\ldots . . . . . . . . . . .0 .5$ |
| Physics............ | $\ldots . . . . . . . . . . .1$ |
| Chemistry. | $\ldots . . . . . . . . . . . .1$ |
| Social Science or Foreign Language | ....... 2 |
|  |  |

An incoming freshman with this background enters the regular scheduled program if he/she earns satisfactory scores on the qualifying examinations in mathematics, chemistry and English (see below). Students having only two of the above units in mathematics and one unit of physics, chemistry, or biology may also be admitted to the College of Engineering. Proficiency in the areas of the missing units can be obtained by supplementary course work before entering the courses normally scheduled for freshman engineering students. Further, admission may be granted with fewer than four units of English provided evidence of competency in English can be shown.

## Admission

Admission to the undergraduate professional programs in the Division of Engineering, College of Engineering, is dependent upon high school honor point average (h.p.a.) and ACT or SAT scores for those students entering directly from high school, and upon honor point average and level of curriculum completion for transfer students from community colleges or other universities. The following admission criteria are used to place students in the professional or pre-professional programs. Students who do not meet the minimum requirements for admission to a professional program may be admitted to the pre-professional program. The purpose of the pre-professional program is to permit students who are not qualified for entry into a professional program the opportunity to enroll in a restricted set of courses which are included in professional programs. Permission to transfer to a professional program will be granted to students who successfully complete this set of courses in accordance with the rules governing such matriculation as described below.

Freshman Criteria: All freshmen with a 3.0 high school h.p.a. or above are admitted to a professional engineering program.
Freshmen with a high school h.p.a. of 2.75 or above but less than $\mathbf{3 . 0}$, with acceptable ACT (above 20) and SAT (above 850) scores, are admitted to the professional program.

Freshmen with an h.p.a. of 2.75 or above but less than 3.0, and with ACT or SAT scores lower that given above, are admitted to the pre-professional program.

Freshmen with an h.p.a. of 2.00 or above but less than 2.75 and acceptable ACT and SAT scores are admitted to the pre-professional program.

Transfer Student Criteria: Transfer students with an h.p.a. of 2.00 or above, who have successfully completed the first course in college calculus but have not completed the calculus sequence MAT 201-204 with a grade ' C ' or better, will be admitted to the pre-professional program. Transfer students with an h.p.a. of 2.00 or above who have completed the MAT 201-204 sequence with a grade ' $C$ ' or better will be admitted to a professional program, subject to departmental criteria.

## Matriculation

Entering Freshmen: Upon the receipt of notification of admission by the University Admissions Office, entering freshmen should contact the Office of the Assistant Dean for Student Affairs should questions arise regarding their obligations and activities prior to the beginning of classes for the semester in which they propose to enter the program.

An inspection of the various engineering curricula will reveal that the first two years in all of the programs are quite similar, thus affording students some opportunity to postpone commitment to a specific degree program without subsequent loss of credit, although variations do begin to appear in the sophomore year. In general, entering freshmen are encouraged to register in one of the degree granting departments. However, if undecided as to a particular curriculum, the student may register as an 'undecided student'. If the undecided status is elected, the student is monitored by the Assistant Dean and encouraged to pursue career counseling during the freshman year. When a decision is reached, the student is assigned to the appropriate department. Students are strongly encouraged to reach a decision prior to the completion of the freshman year. The planning of a program of studies is carried out in conference with a faculty adviser. Students are encouraged to meet with their adviser whenever there may be a need to do so. This contact must be sought at least once each term for registration purposes.

During the freshman and sophomore years, the student acquires a firm foundation in the basic sciences, mathematics, and the engineering sciences. Throughout the entire program, a continuing general education in the social science and humanities areas is included. Students must qualify in mathematics, chemistry and English to begin their programs of study as specified in the various curricula (see Qualifying examinations above).

On occasion, students may find it convenient or necessary to strengthen their background in English, chemistry, and mathematics through the election of courses which do not count toward the engineering degree. Students should consult their departmental adviser for guidance in this matter.

Transfer Students: For the student who has attended another institution and who has been found admissible to the Division of Engineering, the amount of advanced standing will be determined by the College and will depend upon the quantity and quality of the degree work completed prior to enrollment in this institution. Whether all, or only part, of such transferred credit may be applied toward a degree at Wayne State will depend on the requirements of the curriculum chosen. The student should consult the department chairperson or the Assistant Dean on this matter.

An engineering transfer program to be taken at a community college acceptable to each of the engineering colleges in Michigan has been prepared by the Engineering College-Community College Liaison

Committee. A brochure describing this transfer program is available from any community college or from the Office of the Dean of any of the engineering colleges. Further, course equivalency tables are available at most southeastern Michigan community colleges.

Any request for reconsideration of the evaluation of transfer credits accepted by the College of Engineering should be made in writing within one year of the date of the student's first enrollment in the College of Engineering, or within one year of the date of the evaluation if the latter is made subsequent to the student's enrollment in the College of Engineering.

Transfer of College within the University: A student in another college of Wayne State University who wishes to transfer to the College of Engineering makes application directly to the Division of Engineering. The transfer form is available in the Dean's office. This application for transfer should be made as soon as the student decides to work toward an engineering degree and as soon as all admission requirements are met, since delay may cause serious prerequisite problems and loss of credit.

Pre-Professional Program: Students admitted to the pre-professional program must complete the following set of courses prior to applying for transfer to a professional program: MAT 201-204, PHY 217 and $218, \mathrm{CHM} 107$ or 105 , ENG 102, and a minimum of sixteen credits from a list of 200 - and 300 -level engineering courses. Students who complete this set of courses with a minimum grade of ' $C$ ' in each course and who pass the English Proficiency Examination Requirement will be permitted to transfer to a professional program.

Students enrolled in the pre-professional program are not permitted to enroll in any engineering courses except those on the list of engineering courses cited above. However, such students may enroll in other non-engineering courses included in the professional program.

## Qualifying Examinations

All entering freshmen must take the qualifying examinations in mathematics, chemistry and English. Transfer students must take the English qualifying examination and if they do not have transfer credit to the College of Engineering in mathematics and chemistry, they are required to take qualifying examinations in mathematics and chemistry. Consult the Schedule of Classes for information regarding the schedule for the examinations or contact the Counseling Services Office, 343 Mackenzie Hall, 577-3400.

## - Chemistry

The sequence of chemistry courses for the engineering student normally begins with Chemistry 107. Qualification for Chemistry 107 requires a satisfactory score on the Chemistry Qualification Examination. If a student is not properiy prepared to consider placement in Chemistry 107, direct entry into Chemistry 105 is permissible. Four credits from Chemistry 105 will then replace 107 in the student's program.

## - English

All entering freshmen and transfer students shall determine their aptitude in English composition by taking the English Placement Examination. Students whose score on the English Placement Examination indicates need for additional instruction and practice in writing must elect and pass English 101 before they can enroll in English 102. This examination is not a replacement for the English Composition Proficiency Examination (see page 114).

## - Mathematics

The sequence of mathematics courses for the engineering student normally begins with Mathematics 201. For admission to Mathematics 201, a qualifying examination must be passed. Failure to qualify for Mathematics 201 may result in the student being placed in a lower level course such as 095 or 180 , depending upon the student's performance. Students may apply to take the Qualifying examination in either Mathematics 180 or 201 depending upon their preparation in mathematics. The Mathematics 180 Qualifying Examination is based upon one and one-balf units of high school algebra and one unit of high school geometry. The Mathematics 201 Qualifying Examination is based upon a total of three and one-half to four units of college preparatory mathematics covering algebra, plane and solid geometry and trigonometry,

## Degree Requirements

The normal program of study for each of the degrees awarded in the Division of Engineering requires between 136 and 139 credits, based on the curricular plans shown in the departmental sections. Of the total credits for the degree, at least the last thirty-four credits must be completed as resident credits in the College.

Completion of the degree requirements in four years requires the election of approximately seventeen credits each term during the academic year. A student who elects the Cooperative Education Program will require five years. Students may attend the University on either a full-time or part-time basis (twelve credits are considered by the University as a minimum full-time load). The maximum load that a student carries should be consistent with the student's ability and available time. However, since a credit hour (credit) is defined as one class hour requiring about two hours of preparation per week carried through a semester, the fifteen to nineteen credit programs shown in the curricular plans represent a full forty-hour academic work week. A three hour laboratory period is generally regarded as the equivalent of one credit. Specific requirements for these degrees may be found in the departmental sections of this bulletin (pages 119-149). These requirements are in effect as of the publication date of this bulletin, however, students should consult an academic adviser for verification of current requirements. The following general discussion concerns generic aspects common to all Bachelor of Science engineering programs.

GENERAL EDUCATION REQUIREMENTS: All students must satisfy the General Education Requirements of the University, as described on page 20. The following curricular requirements of the College duplicate some General Education entries, but students are cautioned to be familiar with and to complete both sets of requirements.

## - Mathematics Requirement

Engineering students use mathematics as a tool in all engineering and science courses in their college curricula, as well as later upon entry into the engineering profession. All prospective engineering students are encoaraged to complete the number of units of mathematics stipulated in the section entitled Recommended High School Preparation, page 112. Ideally, engineering students elect the first course in calculus in their first freshman term; however, many incoming students are not prepared to begin the mathematics program with calculus and additional remedial coursework is necessary to strengthen the student's background. All students entering the Division of Engineering with no transfer credit in calculus must take the Mathematics Qualifying Examination. For further details, see above.

## - Basic Science Requirement

All undergraduate engineering students are required to complete at least sixteen credits (four courses) of basic science courses, including Chemistry 107, Physics 217 and 218 . These three courses are required in all of the engineering curricula, and it should be noted that certain curricula require the completion of prescribed science laboratories and/or additional chemistry and physics courses. In addition, each student must elect a life science course which satisfies the University Requirement in General Education as well as departmental requirements. Students should consult with their advisers for a current list of acceptable courses.

## - Humanities and Social Science Requirement

Engineering today extends far beyond technical decisions. Far-reaching effects of man-made technology require the engineer to be aware of and sensitive to his/her social responsibilities. Studies involving the engineer in sociological, economic and aesthetic judgment are incorporated in the engineering program in order to insure an understanding beyond technical problems which will enable the complete engineer to make value judgments concerning the impact of this technology upon society.
The College has, therefore, included a program in the social sciences and the humanities as a part of all engineering curricula. This program is integrated with the non-science portion of the University's General Education Program, which requires a student to elect one course from each of the following categories: historical studies, American society and institutions, basic social science, foreign culture, visual and performing arts, and philosophy and letters. See page 20 for a complete description of the General Education Requirements. The Engineering Division imposes requirements in addition to the University-wide restrictions on courses which satisfy the General Education Requirements. These restrictions are shown in the degree requirements for each engineering program.

## - English and Mathematics Proficiency

See pages 2I-22 for a complete statement regarding University proficiency requirements.

English Proficiency Requirement: Students who have had their entire college experience at Wayne State University must take the English Proficiency Examination after they have completed forty-five credits and before they have completed sixty credits. Transfer students who have transferred sixty or more credits must complete the examination during their first semester at this university. In the event that the student does not pass this examination, immediately following failure in the examination, English 108 must be elected and completed with a satisfactory grade. Students planning to take the English Proficiency Examination in Composition will find the examination schedule in the Schedule of Classes under the section for the English Language and Literature Department of the College of Liberal Arts. Students taking the English Proficiency Examination must apply to Testing and Evaluation, University Counseling Services.

Communication Skills: In addition to the basic composition course ENG 102, six credits in communication skills are required of all students. The courses, English 305 and 306, entitled Technical Communication I and II, respectively, are to be elected. Note that successful completion of the English Proficiency Examination is a prerequisite to English 305.

Mathematics Proficiency: Engineering students will automatically satisfy this requirement by passing MAT 180 or a required course in calculus before reaching junior status.

## - Engineering Science Electives

Engineering science courses have their roots in mathematics and basic science and provide a bridge between mathematics, basic science and professional engineering courses. In certain curricula, the engineering science courses are completely prescribed; in other cases, they are partially identified through the designation 'Engineering Science Elective'. Specific departmental recommendations may appear at the end of the particular curriculum listing. Students should consult their academic adviser concerning these recommendations.

## - Technical Electives

Technical electives may be chosen from the course offerings of the College of Engineering and the advanced science and mathematics courses of the College of Liberal Arts. Other courses, such as advanced courses in the School of Business Administration, may be elected with the approval of the academic adviser. The purpose of the technical elective is to increase the depth or breadth of one's professional knowledge. Courses should be selected so as to meet this objective. Engineering courses elected as technical electives are normally selected at the ' 500 ' level. The courses are open to both undergraduate and graduate students.

## Cooperative Education Program

Students who wish to enrich their education with on-the-job engineering experience may enroll in the Co-operative Education Program. In this program, full-time study terms are alternated with full-time work assignments in co-operating industries. The program may be entered at the beginning of the junior year. Special co-operative programs are available on a limited basis providing special arrangements in the definition of the work-study period. For further information, consult the Co -op Coordinator at the University Placement Office.

Most of the work assignments are in the Metropolitan Detroit area on a commuting basis; however, job opportunities are available in other cities and states. The 'Co-op' program is available in all the undergraduate engineering curricula.

Each Co-op student may enroll for one academic course while on work assignment. This must be done with the approval of the student's adviser. Following each work assignment, the student may elect to enroll in Basic Engineering 250 or Chemical Engineering 351 for one credit. Election of the course requires the completion of a report on the work experience to the department adviser and to the Co-op Coordinator. This credit for work will not be counted toward graduation unless permission is specifically recommended by the department chairperson. Students are automatically enrolled for a zero credit course each term that they are on a co-op assignment to insure that the experience appears on their transcript.

A brief evaluation report covering each work assignment is to be submitted to the Co-op Coordinator, whether there has been enrollment in the above one credit courses or not. The student's performance on the job is rated by his/her industrial supervisor. Salaries and other benefits are paid for the time spent on each work assignment. For details and enrollment procedures, contact the Co-op Coordinator in the University Placement Office.

## 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 5. The following additions and amendments pertain to the Division of Engineering within the College of Engineering.

## Registration

All Division of Engineering undergraduate students must secure an Engineering adviser's signature approving the program request before pursuing registration for courses. See page 16 for information relating to late registration. Special attention should be paid to course preand corequisites, and departmental grade requirements in prerequisites; students may be removed from courses entered without satisfying these requirements.

Some courses may be offered only once a year; others may have multiple sections running every semester. The University Schedule of Classes, published prior to each semester, shows when and where the classes will meet and outlines registration procedures and times.

## Course Materials Fees

A course materials fee may be assessed for registration in certain courses, principally courses with associated laboratories, where University-supplied materials warrant such a fee. Course Material Fee Cards are to be turned into the course instructor by the end of the second week of classes. Students failing to comply with this will be withdrawn from the course.

## Attendance

Regularity in attendance is necessary to success in college work. Excessive unexcused absences may result in withdrawing a student from a class. The student should arrange with the course instructor in advance for all predictable absences. Absences due to illness or conditions beyond the student's control should be reported upon the student's return to class.

## Dean's List of Honor Students

A student who achieves a term honor point average of 3.5 or more, based on a program of twelve credits or more, is cited by the Dean for distinguished scholarship and is included on the Dean's List of Honor Students.

## 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.

## Probation

A student is considered to be on probation whenever his/her cumulative honor point average, or his/her honor point average in the department of specialization, falls below 2.0. A student may also be placed on probation whenever his/her academic performance is deemed unsatisfactory. When placed on probation, the student is required to meet with the Assistant Dean to remove the academic hold on his/her registration. While on probation, a student may not represent the College of Engineering in student activities.

A student on probation is expected to remove the honor point deficiency promptly. (Honor point deficiency is obtained by subtracting the total number of honor points from twice the total number of credits in the honor point base. It is the number of honor points by which the student fails to achieve a 2.0 honor point average.) If, at the end of the first semester on probation, the student's cumulative honor point average has not increased to at least 2.0 , he/she will be excluded from the College. For part-time students, a semester will be considered to consist of twelve consecutive credit hours. If the student's cumulative h.p.a. reaches at least 2.0 by the end of the first semester after being placed on probation, he/she will be returned to regular status. Multiple occurances of probation will result in the student's exclusion from the College.

A student may be refused the privilege of registering in the Division of Engineering if, at any time, his/her honor point deficiency exceeds sixteen points. A student may also be refused the privilege of registering in the Division for irresponsible attendance and performance in class, regardless of any probationary status.

Following exclusion from the Division the privilege of registering in the Division will ordinarily be withheld for at least one calendar year. Class work taken at any institution during the period of exclusion may not be considered for transfer toward an engineering degree of this Division.

A student who has been refused the privilege of registering in the Division may request a re-consideration of his/her status by the Academic Standards Committee (ASC). He/she should not make the request, however, unless he/she can provide evidence of extenuating circumstances. A formal written request for reconsideration must be presented to the Assistant Dean for Student Affairs.

## Substandard Performance

The grade of ' $D$ ' is considered by the Division of Engineering to represent sub-standard performance. The minimum acceptable grade in any engineering course is a ' C .' Thus, all courses in which a grade of ' $D$ ' or ' $E$ ' is earned must be repeated.

If a grade of ' D ' is received in any course which is prerequisite to another engineering course or in a required course in mathematics, physics or chemistry, the student will be required to repeat that course before the next course in the sequence is taken.

Any course which has been completed for audit may not be subsequently enrolled in for credit nor may credit be obtained by special examination.

A course in which a grade below ' $C$ ' has been earned may not be subsequently passed by Special Examination.

Repeating Courses: Courses in which a ' $D$ ' or ' $E$ ' grade is earned must be repeated no later than the next regular (i.e., fall or winter) semester in which the course is offered. Exceptions to this rule must be
approved by the Department and the Dean's Office. When a course is repeated the new grade will replace the previous grade unless a student exceeds the maximum number of repeats of one course for each thirty-four credits completed at Wayne State University. After this maximum number of repeats is exceeded, both grades will be included in computing the student's grade point average.

When repeating a course, failure for the third time to pass it with a ' C ' grade constitutes grounds for refusing a student further registration in the Division of Engineering.

An engineering student who repeats a required course in which he/she received a grade of ' $D$ 'or ' $E$ ' must repeat that course at Wayne State University unless prior written approval is secured for his/her department chairperson and the Dean to take the course at a designated institution.

Students are directed to pages $30-31$ of this bulletin for University policies related to repeating courses and credit by special examination.

## Withdrawal From Courses

General rules governing withdrawal from courses and changes of program can be found on page 30. Special note should be taken of the fact that the College of Engineering policy on withdrawal from a course or courses is not to grant permission to withdraw after Friday of the fifth week of classes, nor add a course after the fourth week.

## Graduation

At graduation the University requires a minimum 2.0 honor point average in the total residence credit. Additionally, the Division of Engineering requires a minimum 2.0 honor point average in the total work taken in the department of specialization.

Graduates with a minimum of sixty credits in residence at Wayne State University and an honor point average of at least 3.0 may qualify for a special diploma under the following conditions:

Summa Cum Laude: Student must have an honor point average in the top five per cent of the College of Engineering graduating class.

Magna Cum Laude: Student must have an honor point average in the five per cent of the graduating class subsequent to summa cum laude students.

Cum Laude: Student must have an honor point average in the ten per cent of the graduating class subsequent to magna cum laude students.

Each year, commencement exercises are held in December for summer and fall semester graduates and in May for winter semester graduates.

## Guests

A student attending another engineering college who wishes to take course work at Wayne State for the purpose of credit transfer to the home institution may be admitted as a guest student for one term. This is done by applying through the University Office of Admissions using either the Application for Undergraduate Admission or the Graduate Guest Application. These applications require certification by an official of the home institution. For information on graduate guest admission and visiting doctoral guests, see the Wayne State University Graduate Bulletin.

The Michigan Conference of Engineering Deans has entered into an agreement endorsing the exchange of guest privileges between ABET-accredited engineering curricula in Michigan. For further information call the Engineering Dean's Office; 577-3780.

## Second Degree

An engineering student, who after receiving one Bachelor of Science degree at Wayne State University, wishes to obtain a second bachelor's degree must complete at least thirty credits beyond those applied toward the first degree and must also satisfy all departmental and College course requirements.

## Professional Registration

An additional mark of engineering competence is the successful completion of examinations for professional registration. These examinations are given by each state. Upon being registered in a state, the engineer may legally provide engineering services to the public of that state. Many of the states have reciprocity agreements for transfer of registration. In Michigan, the State Board of Registration for Professional Engineers offers the registration examination in April and November of each year. Graduates at the bachelor's degree level are qualified and urged to take Part I, Fundamentals of Engineering, of the examination immediately upon graduation or at the examination just preceding graduation. Application forms are available in the Dean's office.

## COURSES OF INSTRUCTION ${ }^{1}$ (B E)

The following courses in basic engineering are of a general nature and are used by students in all of the Division of Engineering disciplines.
100. Introduction to Engineering Computation. (Lct: 1; Lab: 6). Cr. 3
Prereq. or coreq: MAT 180. An introduction to the profession of engineering, professional ethics, social responsibilities, the design process and the use of a variety of computational methods and computers. Use of word processing, spreadsheet, statistical and graphics software. Development of computer literacy.
250. Engineering Internship. (Ind: 1). Cr. 1(Max. 6)

Prereq: sophomore standing and consent of adviser. Offered for S and $U$ grades only. Engineering practice under supervision in cooperative education work-study program. Report required.
350. Engineering Internship Record. (Ind: ). Cr. 0

Prereq: sophomore standing and consent of coordinator. Offered for $S$ and $U$ grades only. Engineering practice under supervision in cooperative education program.

[^18]116 College of Engineering

## STUDENT ACTIVITIES AND ORGANIZATIONS

The Engineering Student-Faculty Board coordinates and is responsible for all organized student activities in the College. In addition, it sponsors certain college-wide programs including the College of Engineering Open House.

The Wayne Engineer, a student engineering magazine, is published four times yearly. It is a member of the Engineering College Magazines Association.

Chi Epsilon, a national civil engineering honor fraternity, was founded at the University of Illinois in 1922. The forty-eighth chapter of the fraternity was installed at Wayne State University on May 11, 1956. Election to membership is based on scholarship, character, practicality, and sociability for undergraduate and graduate students, and professional eminence for members of the profession.

Eta Kappa Nu, a national electrical engineering honorary society, was founded at the University of Illinois in 1904. Election to this society is based on demonstrated outstanding ability, as evidenced by scholarship and individual achievement. Delta Alpha Chapter was installed at Wayne State University on January 18, 1960.

Pi Tau Sigma is a national mechanical engineering honorary society founded in 1915 at the University of Illinois and at the University of Wisconsin to 'foster the high ideals of the engineering profession'. Students who have given promise of becoming outstanding leaders in the mechanical engineering field are elected to membership. The Tau Phi Chapter was installed at Wayne State University on May 20, 1960.

The Tau Beta Pi Association is a national honorary engineering society which was founded at Leheigh University in 1885. By election to membership the society recognizes that the member has conferred honor on his/her Alma Mater by distinguished scholarship and exemplary character as an undergraduate or by attainments in the field of engineering after graduation. The Michigan Epsilon Chapter of Tau Beta Pi was installed at Wayne State University on March 10 , 1951.

The Society of the Sigma $\mathbf{X i}$ is a national society devoted to the encouragement of research in science, pure and applied, and to the recognition of achievement in those fields. Undergraduates of high scholastic standing in two or more departments of pure or applied science who have shown promise of ability to conduct original investigations in those fields may be nominated by the faculty for election to associate membership in the Wayne State University Chapter. Graduate students may be nominated to membership on the basis of demonstrated research ability and high scholarship.

Theta Tau, a national professional engineering fraternity, was established at the University of Minnesota in 1904. Epsilon Beta, the twenty-seventh student chapter, was founded on May 19, 1951, at Wayne State University.

Association of Black Engineers and Applied Scientists, founded in 1969, was established to encourage the choice of engineering and science as career fields for black students.

The Society of Women Engineers student chapter is an educational service organization dedicated to making known the need for women engineers and encouraging young women to consider an engineering profession. The Wayne State University student chapter was founded in 1973.

Student Branches of Professional Societies add much to the education of their members. Many outstanding engineers from the community come to the campus each year to address meetings of the branches. Other activities include social meetings and trips to important engineering projects. Student branches of the following professional societies have been active on the campus for several years:

American Institute of Chemical Engineers
American Institute of Mining, Metallurgical, and Petroleum Engineers
American Society of Civil Engineers
American Society of Mechanical Engineers
American Society of Metallurgists
Engineering Society of Detroit, Student Chapter
Institute of Electrical and Electronics Engineers
Institute of Industrial Engineers
Society of Automotive Engineers


## FINANCIAL AIDS

## Scholarships

An increasing number of scholarships are granted each year to undergraduate students in the College of Engineering. The scholarships differ greatly in their specifications: some stress high scholarship, others place emphasis on financial need or campus citizenship. Engineering students are also eligible for some of the general University scholarships granted each year.

Numerous loans and grants as well as work study programs are available through the Office of Scholarships and Financial Aids. Grants in Aid as well as National Direct Student Loans are available through the Office of Scholarships and Financial Aids.

From time to time, scholarships and other opportunities are opened to undergraduate students on other than a continuing basis. Inquiries should be directed to the Assistant Dean of the College of Engineering.

The following scholarships are representative of those granted to engineering students in recent years:

Murray and Helen Altman Scholarship
American Metal Climax Foundation Scholarship-Climax Molybdenum
American Natural Resources Scholarship Program
American Society for Metals Foundation Scholarship in
Metallurgical Engineering
American Society of Tool and Manufacturing Engineers
Scholarship in Engineering
Ansul Corporation Scholarship
BASF Wyandotte Corporation Scholarship Program
Board of Governors Grant
Board of Governors Scholarship
Burroughs Corporation Scholarship
The Arthur Raymond Carr Memorial Scholarship in Engineering
Chrysler Central Engineering Co-op Scholarship
Chrysler Corporation Fund Scholarship
Chrysler Forge Scholarship
College of Engineering Scholarship
College Work Study
The L. David Cook Award in Chemical and
Metallurgical Engineering
Detroit Edison Co-op Scholarship
The Detroit Edison Scholarships in Éngineering
Dow Chemical Corporation Co-op Scholarship

## Dow Corning Scholarship

Ex-Cell-0 Corporation Co-op Scholarship
The Ford Motor Company Scholarship Program
The General Motors Scholarship Program
Giffels Associates, Inc., Scholarship
The Graduate Professional Scholarship
The William R. Kales Scholarship in Engineering
Charles Lewitt Memorial Scholarship
Michigan Bell Co-op Scholarship
Michigan Consolidated Gas Company Co-op Scholarship
Michigan Road Builders Association Scholarship
Michigan Society of Professional Engineers Scholarship
The Monsanto Scholarship in Engineering
National Action Council for Minorities in Engineering, Inc., Scholarship
National Direct Student Loan
National Science Foundation Fellowships
Ohio Edison Co-op Scholarship
The James E. and Christine L. Orr Scholarship in Engineering
Proctor and Gamble Co-op Scholarship
William T. Rettenmeier Memorial Scholarship
Rockwell International Coop Freshman Scholarship

Shell Assist Scholarship
The Society of Engineers' Wives Scholarship in Engineering
University Unrestricted Fund Scholarship
The Fredrick G. Weed Graduate Scholarship in Chemical Engineering
The Robert G. Wingerter Awards for Scholastic Excellence in Engineering

## College of Engineering Directory

## Dean

Room 1100, Engineering Building; 577-3775
Assistant Dean-Student Affairs and Minority Programs
Room 1100, Engineering Building; 577-3780
Associate Dean-Graduate Programs and Research
Room 1100, Engineering Building; 577-3861
Associate Dean-Academic Affairs
Room 1100, Engineering Building; 577-3040
Associate Dean-Alumni and Corporate Relations
Room 1100, Engineering Building; 577-4707
Director of Alumni and Corporate Relations
Room 1100, Engineering Building; 577-4707

## Business Manager

Room 1100, Engineering Building; 577-3817
Director, Engineering Technology
4855 Fourth Avenue; 577-0800
Director, Minority Programs
Room 1100, Engineering Building; 577-3812
Coordinator, Cooperative Education
University Placement Office, Mackenzie Hall
Chemical and Metallurgical Engineering
Room 1100, Engineering Building; 577-3800
Civil Engineering
Room 2100, Engineering Building; 577-3789
Electrical and Computer Engineering
Room 3100, Engineering Building; 577-3920
Industrial Engineering and Operations Research
Room 3100, Engineering Building; 577-3821
Mechanical Engineering
Room 2100, Engineering Building; 577-3845
Bio-Engineering Center
818 West Hancock; 577-1344
Health Systems Productivity Center
Room 3166, Engineering Building; 577-3821
Center for Automotive Research
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: R. H. Kummler<br>Associate Chairperson: J. H. McMicking

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

## Associate Professors

D.A. Crowl, C.B. Leffert (Emeritus), J.H. McMicking, R.W. Mickelson, S.O. Salley

## Assistant Professor

S. Ng

## Adjunct Professors

J. Jorne, M. Klein, J. Louvar, R. Powitz, B. Shorthouse, P. Warner

## Degree Programs

## Bachelor of Science in Chemical Engineering

* Certificate in Hazardous Waste Control
* Certificate in Polymer Engineering
* 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.

The chemical engineer may enter the fields of petroleum processing, pharmaceuticals, food processing, natural and synthetic rubbers and plastics, electronic materials, surface coatings, atomic energy processing, environmental control and biotechnology.

The undergraduate program in chemical engineering includes a thorough study of chemistry, mathematics, and physics, as well as an understanding of physical and chemical operations and processes. Engineering courses cover material and energy balances, transport phenomena, reaction kinetics, and process and equipment design. In addition, ten credits in electives may be chosen from topics such as polymers, biochemical engineering, nuclear engineering, pollution control, material science, and other special topics.

The breadth of this program permits graduates to enter the chemical industries with confidence that their abilities will find almost immediate use. Chemical engineers may enter the division of production and advance toward plant or production management positions, or they may find their training useful in design, development, or research departments. In the latter cases additional formal education at the graduate level may be desirable. Chemical engineers with master's or doctor's degrees constitute a large percentage of those employed in research and development work.

## Bachelor of Science in Chemical Engineering

## Admission Requirements: see pages 112-223.

DEGREE REQUIREMENTS: Candidates for the Bachelor of Science degree must complete 138 credits in course work, including satisfaction of the University General Education Requirements (see page 20), as outlined in the following curriculum. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages $5-35$ and $112-116$, respectively. Non-engineering entries, cited below by subject rather than individual course number, indicate courses to be selected in fulfillment of the University General Education Requirements. Degree requirements shown in the curricula below are in effect as of the publication date of this Bulletin. Students should consult their advisers for verification of current requirements.

## Freshman Year

## First Semester

|  | Credits |
| :---: | :---: |
| UGE 100-(GE) Introduction to the University \& its Libraries.. | $\ldots . . . . .1$ |
| MAT 201 - Calculus I.. | . 4 |
| CHM 107 - Principles of Chemistry I. |  |
| ENG 102 - (BC) Introductory Coilege Writing ............... | ....... 4 |
| P S 103 - (AI) The American Governmental System ........... | $\cdots$ |
|  | Total: 16 |
| Second Semester |  |
| MAT 202 - Calculus 11. | . 4 |
| CHM 108 - Principles of Chemistry II................ | -..... 5 |
| ECO 101 or ECO 102 |  |
| -(SS) Principles of Macroeconomics ..... | ......... 3 |
| - (SS) Principles of Microeconomics... | ......... 3 |
| HIS 195 - (HS) Society and the Economic Transition .......... | . 3 |
|  | Total: 15 |

## Sophomore Year

First Semester


## Second Semester

MAT 235 - Elementary Differential Equations .................................................. 3


CHE 304 - Computational Methods in Engineering............................................ 3
I E 322 - Probability and Statistics in Engineering............................................. 3
CHM 236 - Organic Chemistry II: for Chemical Engineers....................................... 2
Total: 17

## Junior Year

First Semester

|  | Credits |
| :---: | :---: |
| CHE 322 - Measurements Laboratory |  |
| CHE 330 - Thermodynamics II: Chemical Equilibria ...... | $\ldots$ |
| CHE 320 - Chemical Process Engineering I ................... | . 4 |
| CHM 544 - Physical Chemistry II ... | 4 |
| ENG 305 - (IC) Technical Communication I: Report Writing. | 3 |
| CHE Technical Electives. |  |

Second Semester
CHE 340 - Kinetics and Reactor Design .....  3
CHE 382 - Chemical Engineering Laboratory .....  2
CHE 380 - Chemical Process Engineering II: Mass Transfer .....
CHE 386 - Chemical Engineering Seminar I .....  0
PHY 218 - General Physics .....  .4
BIO 220 - Introductory Microbiology. .....  4
CHE Technical Electives. .....  3
Total: 20
Senior Year
First Semester
Credits
Visual \& Performing Arts (VP) elective. .....  3
CHE 420 - Chemical Process Engineering III .....  3
CHE 426 - Chemical Engineering Seminar II .....  0
CHE 460 - Process Dynamics and Simulation .....  3
Chemistry Technical Elective .....  2
ENG 306 - (OC) Technical Communication II: Writing \& Speaking .....  3
ANT 315 - (FC) Anthropology of Business .....  3
Total: 17
Second Semester
CHE 486 - Chemical Engineering Seminar III .....  1
Chemical Engineering Technical Elective .....  .4
CHE 480 - Chemical Process Integration .....  3
Chemical Engineering Design Elective .....  4
Philosophy \& Letters ( PL ) elective ( 300 -level). .....  3
Materials etective. .....  4Total: 19
TOTAL CREDITS ..... 138-139

## COURSES OF INSTRUCTION ${ }^{1}$ (CHE)

## 200. Introduction to Chemical Engineering. Cr. 4

Prereq: MAT 201, CHM 108. No credit for chemical engineering majors. The field of chemical engineering, including stoichiometry, industrial equipment, fluid flow, heat transfer, evaporation, distillation, absorption and extraction and other unit operations; brief overview of economics and plant design.

## 280. Material and Energy Balances. Cr. 4

Prereq: PHY 217 and CHM 108. Material fee as indicated in Schedule of Classes. Material balances, stoichometry and simultaneous mass energy balances.
(F,W)

## 304. Computational Methods in Engineering, $\mathbf{C r} 3$

Prereq: CSC 105; coreq: MAT 204. Student computer account required. An introductory course in the application of digital computers and numerical techniques to the solution of engineering problems. Methods for solving linear and non-linear algebraic equations, estimating the accuracy of results, and numerical integration in more than one variable. Finite difference techniques for the solution of ordinary differential equations and extended to the mesh methods for solution of partial differential equations.

## 320. Chemical Process Engineering I: Fluid Flow and Heat Transfer. Cr. 4

Prereq: MAT 202, PHY 217, CHE 230. Material fee as indicated in Schedule of Classes. Transient and steady state transport of momentum in engineering systems. Analytical and empirical methods. Practical aspects of transport of materials and heat. Piping and pumping systems, metering, heat exchange theory, equipment costs.
( $\mathrm{F}, \mathrm{W}$ )

[^19]322. Measurements Laboratory. Cr. 2

Coreq: CHE 320, ENG 305. Student computer account required. Laboratory course in the principles and practice of measuring chemical, physical and thermodynamic properties of importance to chemical engineering problems. Technical reports.
(F,W)
330. Thermodynamics II: Chemical Equilibria. Cr. 4

Prereq: CHE 230, 280, MAT 204. Qualitatative and quantitive treatment of homogeneous and heterogeneous phase and chemical equilibria. Use of chemical activities and activity coefficients relating ideal to actual systems. Use of reference states and excess properties of the prediction of equilibrium diagrams and the determination of feasibility of chemical reactions.
(F,W)
340. Kinetics and Reactor Design. Cr. 3

Prereq: CHE 330, CHM 544, MAT 204. Material fee as indicated in Schedule of Classes. Quantitative treatment of complex homogeneous and heterogeneous chemical reactions and the design of batch, stirred and flow reactor systems.
(W,S)
351. Co-op Experience. Cr. 1 (Max. 4)

Offered for S and U grades only. Presentation of oral and written report to peer group describing Co-op experience. Attendance required at CHE and MET seminar series for the semester. Classified as CHE Design elective.
380. Chemical Process Engineering II: Mass Transfer. Cr. 4

Prereq: CHE 320, 330. Material fee as indicated in Schedule of Classes. Quantitative treatment of separation processes in which there is simultaneous heat and mass transfer.
( $\mathrm{W}, \mathrm{S}$ )
382. Chemical Engineering Laboratory. Cr. 2

Prereq: CHE 322, ENG 305; coreq: CHE 380, 340. Student computer account required. Material fee as indicated in Schedule of Classes. Experimental study of chemical equilibria, reaction kinetics and rate processes. Laboratory case studies.
(W,S)
386. Chemical Engineering Seminar I. Cr. 0

Coreq: CHE 340, 380. Required for graduation. Offered for $S$ and U grades only.
(T)
420. Chemical Process Engineering III: Economics and Design. Cr. 3
Prereq: CHE 380 and 340. Student computer account required. The overall chemical process. Economic analysis of the process and the optimum-economic design of process.
426. Chemical Engineering Seminar II. Cr. 0

Prereq: CHE 386. Required for graduation. Offered for $S$ and $U$ grades only. Material fee as indicated in Schedule of Classes.
435. Polymer Structure and Properties. (MET 435). Cr. 3

Prereq: MAT 204, CHM 224, MET 130. Introductory study of fundamental relations between chemical structures and physical properties of polymers. The special properties of polymers that make their application both desirable and undesirable. Classified as a chemistry elective.
437. Polymer Process Engineering. (MET 437). Cr. 3

Prereq: CHE 435. Detailed analysis of polymer processing. Rheology of polymers, flow in tubes, calendaring, extrusion, injection molding, surface phenomena, and polymer crystallization. Classified as a design elective.
456. Chemical Engineering Senier Research. Cr. 4-6

Prereq: CHE 386; coreq: 426. Student computer account required. Research project. Classified as CHE Design elective.
460. Process Dynamics and Simulation. Cr. 3

Prereq: CHE 304, 340, 380. Material fee as indicated in Schedule of Classes. Application of system dynamics and mathematical modeling
to design and analysis of chemical processing systems.
480. Chemical Process Integration. Cr. 3

Prereq: CHE 420. Student computer account required. Application of engineering and science background to the design of chemical processes. Comprehensive problems deal with sources of data, design principles and optimization techniques.
(W)

## 486. Chemical Engineering Seminar III. Cr. 1

Prereq: CHE 426. Required for graduation. Offered for $S$ and $U$ grades only.
490. Directed Study. Cr. 1-9(Max. 9)

Prereq: consent of adviser. Students select a field of chemical engineering for advanced study and instruction. Classified as Design or Chemistry elective depending on selected topic.
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. Chemical Engineering elective.
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, thermai, optical, magnetic and electrical properties. Phase equilibria and transformations, interactions in liquid-solid systems, surface properties and diffusional phenomena. Classified as a Chemistry elective.

## 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. Chemical Engineering elective.
524. (M E 524) Industrial Combustion Systems. Cr. 3

Prereq: ME 420 or CHE 320. Introduction to operating principles and design features of modern boilers, furnaces, gas turbine combustors and advanced continuous combustion systems. Application of basic thermodynamic and heat transfer calculations to testing and design. Classified as a CHE Design elective.
(B)
532. (OEH 765) Chemistry of Industrial Processes. Cr. 3

The mechanical and theoretical similarities of various kinds of process equipment are studied with respect to the OSHA and EPA standards of measurement of worker exposure. Emphasis is placed on the operation of actual processes components with respect to the likelihood of mechanical failure. Classified as a Chemistry elective.
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.

## 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.
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.
552. (OEH 651) Air Sampling and Analysis. Cr. 3

Classical methods of obtaining samples of the air, recent developments in the field of portable direct reading devices. Theory underlying the use of impingers, impactors, electrostatic and thermal precipitators, filtration media and other sampling devices. Classified as a Chemistry elective.

## 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.

## 554. Law and Administration in Industrial Waste Management.

 Cr. 2Prereq: senior standing. 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.

## 555. (OEH 642) Environmental Science I: Introduction to Air

 Pollution. Cr. 3Prereq: 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.
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.

## 558. Land and Ocean Disposal of Hazardous Waste. (C E 558).

 Cr. 2Prereq: CHE 551. Industrial landfill, biological methods of disposal, land disposal techniques, ocean disposal techniques, disposal of flue gas cleaning wastes.
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.

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

Prereq: senior standing. 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. Classified as a CHE Design elective.
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.
563. Tribology. (MET 555). Cr. 2

Prereq: CHM 544, CHE 330 or MET 330. The laws of friction, the nature of polymeric and solid surfaces and their frictional interaction and the process of lubrication. Chemical Engineering Chemistry elective.

## 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.

## 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.

## 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. Classífied as a CHE Design elective.
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.
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.

## 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 11. 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.
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.
625. Advanced Process Dynamies 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.
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, calendering, extrusion, injection molding, surface
phenomena and polymercrystallization. Classified as a CHE Design elective.
638. Polymer Kinetics. Cr. 3

Prereq: CHE 340; CHM 544. Polymerization kinetics of various types of reactions, including emulsion polymerization and co-polymerization; polymer reactor design; batch and continuous stirred tank reactors; classical methods for determining reaction rates; developing techniques and spectroscopic methods. Classified as a CHE design elective.
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, Fraunhoffer diffraction analysis, Raman spectroscopy and Fourier transform infrared spectroscopy. Classified as a Chemistry elective.

## 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.
647. Fermentation Technology. Cr. 2

Prereq: CHE 645. Design and operation of fermentors; extends subject matter introduced in CHE 645. Chemical Engineering design elective.
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. Chemical Engineering Chemistry elective.
651. Public Issues of Hazardous Waste, Cr. 2

Prereq: senior standing. 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.

## 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. Chemical Engineering Design elective.
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.
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.
685. (MET 685) Corrosion. Cr. 3

Prereq: senior standing in engineering. Advanced study of the theories of corrosion of materials and applications of these theories in the engineering field. Analysis of industrial problems. Comprehensive engineering reports. Classisfed as a CHE Design elective.
687. Elevated Temperature Corrosion. (MET 687). Cr. 3

Prereq: senior standing in engineering. Advanced study in the theories of high temperature corrosion and applications. Analysis of industrial problems and case histories. Classified as CHE design elective.
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.


# CIVIL ENGINEERING 

Acting Chairperson: T.M. Heidtke

## 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 Professors

R. A. Dusseau, C. J. Miller

## Adjunct Professors.

K. Atasi, A. Davanzo

## Degree Programs

## Bachelor of Science in Civil Engineering

* Master of Science in Civil Engineering
* Doctor of Philosophy-with a major in Civil Engineering
.Civil engineers apply the principles and techniques of engineering to the design and implementation of complex systems. They have traditionally been leaders in many aspects of urban development and 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 and control of structural systems, including tall buildings, bridges and transportation systems necessary for urban development, commerce and industry; water resources planning and management; containment and treatment of hazardous wastes; design of collection and treatment systems for sanitary and storm sewage; water treatment and distribution systems; construction 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 Civil Engineering Department maintains laboratories for teaching and research in the areas of: structures/materials, expert systems, microcomputing, hydraulics, geotechnical and environmental engineering. Laboratories include facilities for testing structural components under static and dynamic loads; strain measurement; and fluid flow. The Department and the University maintain excellent computer facilities for data acquisition and analysis, including several advanced software packages specific to civil engineering. Additionally, the Department is equipped with microcomputers, including IBM PCs, used for artificial intelligence, instruction and research, as well as systems developed by Texas Instruments and Hewlett-Packard for data management and instrument control.

## Bachelor of Science in Civil Engineering

The civil engineering curriculum has been designed to provide a broad education in the basic sciences, mathematics, and engineering sciences, civil engineering analysis and design, and their application to civil engineering practice. The courses in civil engineering may be considered as an array of groups, each representing an area of concern to contemporary society and industry. Technical electives may be selected from one of these major areas according to the student's particular interest or may be chosen from several areas in order to broaden one's knowledge. A student who contemplates continuing study at the graduate level should seek the advice of his/her faculty counselor in the selection of elective courses. Realizing the social implications of the practice of civil engineering, the program provides for the development of a background in economics, the social sciences, humanities, communication skills and related non-technical areas.

## Admission Requirements: see pages 112-113.

DEGREE REQUIREMENTS: Candidates for the Bacheior of Science degree must complete 136 credits in course work, including satisfaction of the University General Education Requirements (see page 20), as outlined in the following curriculum. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 112-116, respectively. Non-engineering entries, cited below by subject rather than individual course number, indicate courses to be selected in fulfillment of the University General Education Requirements. The degree requirements shown in the curriculum below are in effect as of the publication date of this bulletin. Students should consult an academic adviser for verification of current requirements.

| Freshman Year |  |
| :---: | :---: |
| First Semester |  |
|  | Credits |
| MAT 201 - Caculus I. |  |
| CHM 107 - Principles of Chemistry I.. |  |
| CSC 105 - Fortran Laboratory for Engineers.. |  |
| C E 101 - Introduction to Civil Engineering. |  |
| UGE 100-(GE) The University and its Libraries. |  |
| ENG 102 - (BC) Introduction to College Writing. | 4 |
| ECO 101 or ECO 102 |  |
| -(SS) Principles of Macroeconomics ............................................... 3 |  |
| -(SS) Principies of Microeconomics ............................................. 3 |  |
|  | Total: 18 |
| Second Semester |  |
| MAT 202 - Calculus 11 $\qquad$ .4 <br> PHY 217 - (PS) General Physics |  |
|  |  |
| MET 130 - Science of Engineering Materials............................................... 4 |  |
| PS 101 or PS 103 |  |
| - (AI) American Government ......................................................... 4 |  |
| - (Al) The American Governmental System..... |  |
| HIS 195 - (HS) Society and the Economic Transition ..................................... 3 |  |
|  | 18.19 |

## Sophomore Year

## First Semester

|  | Credits |
| :---: | :---: |
| MAT 203 - Calculus III................................. |  |
| PHY 218 - General Physics ................................... |  |
| CE 240 - Statics................................................ |  |
| Life Sciences (LS) elective |  |
| IE 322 - Probability and Statistics in Engineering. |  |
|  | dotal: 17 |

## Second Semester

MAT 235 - Elementary Differential Equations .....  3
C E 360 - Elementary Mechanics of Materials .....  3
CHE 304 - Computational Methods in Engineering .....  3
ENG 305 - (IC) Technical Communication I: Report Writing .....  3
Visual and Performing Arts (VP) elective. .....  3
Total: 15
First Semester

## Junior Year

C E 401 - Civil Engineering Analysis Credits
Philosophy and Letters (PL) elective .....  3
C E 430 - Structures ..... 2
C E 445 - Civil Engineering Materials .....  3
CE 325 - Applied Fluid Mechanics ..... 3
M E 340 - Dynamics .....  3
Total: 17
Second Semester
C E 421 - Water Resources .....  .3
C E 460 - Transportation Engineering. .....  4
CE 431 - Structures II. .....  3
CE 435 - Structural Steel Design I .....  3
CE 451 - Introduction to Geotechnical Engineering. .....  4

Total: 17

## Senior Year

## First Semester

CE 422 - Environmental Engineering
Credits .....  3
C E 436 - Reinforced Concrete I .....  3
C E 464 - Transportation Design
Civil Engineering elective. .....
ENG $306-(0 C)$ Technical Communication II: Writing \& Speaking .....  3
Tota: 16
Second Semester
Civil Engineering Design Elective .....  3
C E 485 - Engineering Economy \& Decision Theory in C E Systems .....  3
Technical Electives .....  9
ANT 315 - (FC) Anthropology of Business. .....  3Total: 18
TOTAL CREDITS ..... 136-137
Humanities and Social Science Electives: See page 114 for socio-humanistic requirements.

Life Science Electives: Civil Engineering students are required to complete three credits of life science electives. Faculty advisers should be consulted for specific recommendations.

Technical Electives: Civil Engineering students are required to complete at least nine credits in technical electives.

Design Electives: Students are required to complete two courses from: C E 551, CE 528, C E 637, C E 638, and C E 641, one of which must be either CE 528 or CE 551.

## COURSES OF INSTRUCTION ${ }^{1}$ (C E)

## 101. Introduction to Civil Engineering. Cr. 1

Offered for $S$ and $U$ grades only. Material fee as indicated in Schedule of Classes. History of civil engineering; major areas of specialization within civil engineering introduced. Required readings and term paper; guest speakers
240. Statics. Cr. 3

Prereq: MAT 202 and PHY 217. Basic concepts and principles of statics with application of Newton's Laws of Motion to engineering problems. Forces, moments, equilibrium, couples, free-body diagrams, trusses, frames, fluid statics, centroids, friction and area and mass moments of inertia.
307. Surveying I. (Let: 2; Lab: 3). Cr. 3

Prereq: PHY 218 or consent of instructor. Material fee as indicated in Schedule of Classes. Principles of plane surveying; measurement of horizontal and vertical distance, directions and angles, traverses, areas.
325. Applied Fluid Mechanics. Cr. 3

Prereq: MAT 203. Material fee as indicated in Schedule of Classes. Experimental verification of theories of fluid mechanics as encountered in civil engineering problems. Specific problems include hydraulics of pipe flow, open channel flow, pumps and pumping stations, flow under a sheet pile and one-dimensional consolidation. Demonstration labs for flow measurements.

## 360. ELementary Mechanics of Materials. Cr. 3

Prereq: C E 240 or M E 240. Elastic and inelastic relationships between external forces acting on deformable bodies and the associated stresses and deformations; structural members subjected to axial load, torsion, and bending; column buckling; combined stresses; repeated loads; unsymmetrical bending.
(T)
401. Civil Engineering Analysis. Cr. 3

Prereq: MAT 204; prereq. or coreq: CHE 304. Student computer account required. Numerical methods applied to linear systems; matrix techniques, linear programming, linear regression; finite difference techniques applied to partial differential equations.
421. Water Resources. Cr. 3

Prereq: C E 325. Material fee as indicated in Schedule of Classes. Water supply, surface and ground water sources, treatment and distribution; water quality, chemical, bacteriological and microscopic; financing and economics of utilities.
422. Environmental Engineering. Cr. 3

Prereq: C E 421. Material fee as indicated in Schedule of Classes. Waste water, collection, treatment and disposal; waste water characteristics; stream sanitation.
430. Structures I. Cr. 2

Prereq: M E 240 or C E 240. Student computer account required. Mechanics of engineering structures. Equilibrium analysis and deformations of trusses and beams. Computer applications.
431. Structures II. Cr. 3

Prereq: C E 430 and 360 or M E 360. Student computer account required. Analysis of structural systems. Force and displacement methods, deflections, reciprocal relations and influence lines. Introduction to plastic analysis. Computer applications.

[^20]435. Structural Steel Design I. Cr. 3

Prereq: C E 430 and 360 or M E 360. Student computer account required. Behavior and design of structural steel elements. Tension, compression and flexural members, connections.
436. Reinforced Concrete I. Cr. 3

Prereq: C E 431. Student computer account required. Structural properties of reinforced concrete; ultimate strength design methods; transformed area; design of reinforced rectangular and tee beams, columns and slabs; continuity in concrete buildings.
445. Civil Engineering Materials. (Let: 2; Lab: 3). Cr. 3

Prereq, or coreq: MET 130, M E 240 or C E 240, ENG 305. Material fee as indicated in Schedule of Classes. Structure; composition; physical, mechanical and rheological properties of steel, concrete, asphalt, wood, plastic and soil. Manufacturing and quality control of concrete and asphalt.
451. Introduction to Geotechnical Engineering. (Let: 3; Lab: 3). Cr. 4
Prereq, or coreq: C E 445 and 325. Student computer account required. Composition, engineering properties and behavior of soils. Principles of soil mechanics. Experimental determination of engineering classification, strength and deformation characteristics of natural and artificially placed soils.

## 460. Transportation Engineering. Cr. 4

Prereq: C E 401. Material fee as indicated in Schedule of Classes. Transportation functions; transportation systems including highways, railways and airways. Techniques of transportation systems analysis including optimization, network flows and queueing theory.
464. Transportation Design. Cr. 4

Prereq: C E 460. Student computer account required. A description of design elements of various system components of transportation; including the driver, vehicle and roadway. Traffic flow design elements including volume, density and speed; intersection design elements including delay, capacity and accident countermeasures and terminal design elements including inflow, outflow and circulation.
(F)
485. Engineering Economy and Decision Theory in Civil Engineering Systems. Cr. 3
Prereq: I E 322. Material fee as indicated in Schedule of Classes. Analysis and evaluation of economic alternatives: interest factors, risks and uncertainties in decision problems; value of perfect and imperfect information in decision making, portfolio investments, utility theory in risk analysis and inventory control under certain and uncertain demand.
490. Directed Study. Cr. 1-4(Max. 6)

Prereq: consent of chairperson. Supervised study and instruction in civil engineering. Written report required.
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 processs encountered in the treatment of water and waste water.
525. Sanitary Engineering Laboratory. (Let: 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.
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.
535. Introduction to Structural Dynamics. Cr. 3

Prereq: ME 340, C E 431. Dynamic properties of structures, nature of dynamic loads, response of structures to dynamic loading, design codes for dynamic loads.

## 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.
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.
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.
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.
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.
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 .
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 i organization management, operation and control of engineering systems, case studies,
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 E613. 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.
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.
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.

## 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.
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.
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, Iateral torsional buckling, steel design project.
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.


# ELECTRICAL AND COMPUTER ENGINEERING 

Chairperson: Michael P. Polis<br>Associate Chairpersons: Andrzej W. Olbrot, Harpreet Singh

## Professors

R. Arrathoon, R. D. Barnard, F. E. Brammer (Emeritus), J. Meisel, M.P. Polis, M. B. Scherba (Emeritus), M. P. Shaw, H. Singh, Y. Wallach, F. Westervelt

## Associate Professors

J. S. Bedi, R. F. Erlandson, A.W. Olbrot, P. Siy, J. R. Woodyard

Assistant Professors
R.D. Brandt, M.H. Hassoun, M. Fu, F. Lin, S.M. Mahmud

## Senior Lecturer

R. R. Johnston

## Adjunct Professors

M. A. Rahimi, A.K. Sood

## Adjunct Associate Professors

T.E. Anderson, D.R. Schneider

## Adjunct Assistant Professors

P. M. Nefcy, R.A. Spitzer

## Degree Programs

## Bachelor of Science in Electrical Engineering

* 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, cheaper, and more powerful computers, microprocessors, and other data processors, and their utilization in a growing range of system applications; the growing use of data communications and sophisticated satellite communication networks; the discovery of lasers, and the development of fiber optic and integrated optical devices for various applications ranging from optical data processing to communication; development of sophisticated control techniques, remote sensors, and transducers for advanced automation and electric power systems; the application of electronics to health care and diagnostics (such as noninvasive measurements and ultrasound imaging); and energy conversion devices.

The areas of study available in the Department include: solid-state devices, microwaves, lasers, integrated optics, optical computers, information sciences, digital circuits, computer engineering, integrated and active circuits, electric power systems, bioengineering, image processing, neural networks, and modern control theory. Programs of both experimental and theoretical study are available in all these areas, as well as other interdisciplinary programs through the Electrical and Computer Engineering Department.

A more detailed exposition of the research activities of the Department is provided in a descriptive brochure available from the Departmental office. Senior students are encouraged to participate in research activities by means of independent study projects and student assistantships. Graduate students normally participate in the research program as graduate teaching assistants and research assistants.

The recently renovated College of Engineering laboratory building contains seven instructional laboratories for experimental work in control systems, analog circuits, digital systems, microcomputers, power systems, fields-microwaves-and-optics, and communication systems; these laboratories are an integral part of the Department's instructional program. In addition, the Departmental faculty have eight research laboratories dealing with computer systems, computer vision, semiconductor device materials including a clean-room facility, opto-electronics, and bioengineering. Microprocessor system development forms a core for all Departmental activity. Personal computer facilities are available for student use; the College Computer Center as well as the University Computing Services Center are available to all students through individual student accounts.

## Bachelor of Science in Electrical Engineering

Admission Requirements: see pages 112-113.
DEGREE REQUIREMENTS: Candidates for the Bachelor of Science degree must complete 138 credits in course work, including satisfaction of the University General Education Requirements (see page 20), as outlined in the following curriculum. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 112-116, respectively. The degree requirements shown in the curriculum below are in effect as of the publication date of this bulletin. However, students should consult an academic adviser for verification of current requirements.

In the freshman and sophomore years, the student acquires a foundation in the principles of science and mathematics required for the study of engineering. In addition, newly-revised general education studies are provided to ensure a well-rounded education. Basic concepts of electrical circuits, electronics, computers and electromagnetic fields are studied after prerequisite mathematics and science backgrounds are mastered. In the senior year, a choice of electrical and computer engineering electives permits the student to specialize in one or more areas. These electives are chosen under the guidance of a faculty adviser. Alternately, the student may elect the computer option, in which a planned program of computer engineering courses replaces the electives and a few of the required courses in the regular program.

## Freshman Year

## First Semester



## Second Semester

MAT 202 - Calculus II. ..... 4
PHY 217 - (PS) General Physics (with lab). .....  5
ECE 262 - Introduction to Microcomputers. .....  4
HIS 195 - (HS) Society and the Economic Iransition .....  3
Total: 16

## Sophomore Year

## First Semester

MAT 203 - Calculus III.
Credits .....  .4
PHY 218 - General Physics (with lab) ..... 5
Visual and Performing Ats elective.
MET 130 - Science of Engineering Materials .....  .4
ECO 101 or ECO 102

- (SS) Principles of Macroeconomics .....  3
-(SS) Principles of Microeconomics. .....  3
Total: 19
Second Semester
ECE 330 - Introduction to Electrical Circuits .....  3
ECE 331 - Electrical Circuits: Laboratory .....
ECE 361 - Digital Logic I. .....  4
ECE 363 - Digital Circuits Laboratory .....  2
ENG 305 - (IC) Technical Communication I: Report Writing .....
MAT 235 - Elementary Differential Equations. .....  3
Total: 16
Junior Year
First Semester
Credits
ECE 333 - Electrical Circuits II .....  4
ECE 357 - Electronics .....  4
ECE 358 - Electronics Laboratory .....  2
IE 322 - Probability and Statistics in Engineering. .....
CHE 304 - Computational Methods in Engineering. .....  3
ENG 306 - (0C) Technical Communication I:W Writing and Speaking ..... 3
Total: 19
Second Semester
ECE 433 - Linear Network and System Analysis .....  .4
ECE 434 - Microcomputer Based Instrumentation: Laboratory .....  .2
ECE 457 - Electronics II. .....  .4
ECE 460 - Microcomputer Interfacing Design .....  .4
ECE 470 - Introduction to Communication Theory .....  4


## Senior Year

## First Semester

|  | Credits |
| :---: | :---: |
| ECE 447 - Control Systems I ........ |  |
| ECE 480 - Electromagnetic Fields and Waves |  |
| Life Science course |  |

ANT 315 - (FC) Anthropology of Business. .....  3
PS 101 or PS 103

- (AI) American Government .....  .4
- (Al) The American Governmental System. .....  3
Total: 17-18
Second Semester
Electrical and Computer Engineering Electives ..... 12
ECE Design Laboratory Elective .....  2
Philosophy and Letters 300 -level elective .....  3
Total: 17TOTAL CREDITSLife Science RequirSubstitution of a course not on this list requires approval of thedepartment chairperson or delegated faculty adviser.

Laboratory Requirements: At least fourteen credits in laboratory courses are required. These credits include three credits in chemistry and physics laboratories, one credit in ECE 262, seven credits in other ECE laboratory courses, plus two credits in ECE Design Laboratory courses (including, but not limited to, ECE 448,563, 573), and at least one credit in another approved laboratory course.

Design Requirement: Portions of the credit of specific ECE courses are designated as Design Component credits. At least sixteen such credits are required: two credits in ECE Design Laboratory courses (including, but not limited to, ECE 448, 563,573), and at least fourteen credits accumulated from the Departmental list of approved design component options. A description of the current design component content of ECE courses is available from Departmental advisors. Students should review their progress toward fulfillment of the design requirement each time they receive academic program counseling.

Withdrawal Policy: No course may be dropped after the fourth week of classes without a written medical excuse.

Course Material Fee: A course material fee is charged for laboratory courses using expendable materials.

## COMPUTER OPTION

Admission Requirements: see pages 112-113.
DEGREE REQUIREMENTS: The undergraduate curriculum for the Computer Option is the same as the Bachelor of Science in Electrical Engineering curriculum given above, with the following exceptions:

## Junior Year

## Second Semester

Substitute the following for ECE 470: Credits
ECE 461 - Introduction to Logical Design of Computers ............................................ 4

## Senior Year

First Semester
Substitute the following for ECE 447: Credits
ECE 468 - Computer 0rganization................................................................. 4

The following course may be taken as an alternate to ECE 480:
ECE 470 - Introduction to Communication Theory. .4

## COURSES OF INSTRUCTION ${ }^{1}$ (ECE)

## 262. Introduction to Microcomputers. (Let: 3; Lab: 3). Cr. 4

 Prereq: CSC 105 or CSC 206, or equivalent programming course. Material fee as indicated in Schedule of Classes. Basics of digital systems, number systems, functional blocks of microcomputers, assembly language and machine code, applications of microcomputers and experimental demonstrations. Introduction to digital logic. (T)330. Introduction ta Electrical Circuits. (Let: 3), Cr. 3

Prereq: PHY 218; prereq. or coreq: MAT 204. Student computer account required. Electrical quantities and waveforms; resistance and Ohm's law; networks and Kirchhoff's laws; network equivalents; nodal and mesh analysis; Thevenin's theorem and other network theorems. Sinusoidal steady-state response. First-and second-order systems. Introduction to sinusoidal steady-state response.
(T)
331. Electrical Círcuits: Laboratory. (Lab; 4). Cr. 1 Prereq, or coreq: ECE 330. Material fee as indicated in Schedule of Classes. Introduction to DC/AC circuits and electronic instrumentation with applications to measurements in simple electrical networks.
333. Electrical Circuits II. (Lct: 4). Cr. 4

Prereq: ECE 330 and 331, MAT 204. Continuation of sinusoidal steady-state concepts from ECE 330. Three-phase systems. Complex frequency concepts. Frequency response and S-plane. Resonant and coupled circuits. Two-port networks.
357. Electronics 1. (Let: 4). Cr. 4

Prereq. or coreq: ECE 333. Graphical and small signal analysis of semiconductor devices; equivalent circuits; gain and bandwidth; multi-state and feedback amplifiers; special-purpose circuits.
358. Electronics Laboratory. (Let: 1; Lab: 3). Cr. 2

Prereq. or coreq: ECE 357. Material fee as indicated in Schedule of Classes. Experimental investigation of semiconductor devices and their behavior in single-stage amplifier, pulse, and power circuits. Design of simple single-state circuits.
361. Digital Logic I. (Let: 4). Cr. 4

Prereq: PHY 218, ECE 262; prereq. or coreq: MAT 204. Introduction to Boolean algebra; switches, gates. Minimization of switching circuits, ROMs, PROMs, and PLAs. Flip-flops. Reduction and minimization of sequential machines. The state-assignment problem. Asynchronous sequential circuits. (T)
363. Digital Circuits Laboratory. (Lct: 1; Lab: 3). Cr. 2

Prereq: MAT 204; prereq, or coreq: ECE 361. Student computer account required. Material fee as indicated in Schedule of Classes. Design of decoders and other combinatorial logic circuits, design of flip-flops, counters, shift registers, and other sequential logic circuits. Choice of logic families, interfacing different logic families.
400. Electrical and Computer Engineering Laboratory. (Lab: 3). Cr. 1
Prereq: senior standing; approval of project outline by faculty member prior to registration. Material fee as indicated in Schedule of Classes. Experimental project under supervision of faculty member.
433. Linear Networle and System Analysis. (Let: 4). Cr, 4 Prereq: ECE 333. Student computer account required. Laplace transform for complete solution of linear network or system response. Homogeneity, superposition, and time invariance properties. Convolution; Fourier analysis of periodic signals; discrete-time signals,

[^21]difference equations, and $z$-transform methods. Formulation of equilibrium equations for electromechanical systems. Linear incremental concepts.
434. Microcomputer-Based Instrumentation Laboratory. (Let: 1; Lab: 3). Cr. 2
Prereq: ECE 357, 358, 363; prereq. or coreq: 433. Material fee as indicated in Schedule of Classes. Multipurpose personal-computer-based approach to real time instrumentation. Current interfacing and software used for data acquisition, transmission, analysis and report writing.
447. Control Systems I. (Let: 4). Cr. 4

Prereq: ECE 433. Student computer account required. System representations; feedback characteristics; time-domain characteristics; Routh-Hurwitz; Root Locus Plots; Nyquist criteria, Bode plots and Nichols charts; series compensation.
448. Systems and Control Laboratory. (Let: 1; Lab: 3). Cr. 2 Prereq: ECE 447. Material fee as indicated in Schedule of Classes. Response of electromechanical devices and mechanisms in open- and closed-loop systems. D.c., a.c., and digital systems with cascade and feedback compensation techniques.
457. Electronics II. (Let: 4). Cr. 4

Prereq: ECE 357; prereq. or coreq: 358. Aspects of electrical properties of semiconductors, the physical electronics of P-N junction, bipolar, field effect transistors, and device fabrication technology essential to understanding semiconductor active devices and integrated circuits. Introduction to the behavior of semiconductor and electronics devices.
458. Electronics II: Laboratory. (Let: 1; Lab: 3). Cr. 2

Prereq: ECE 434; prereq. or coreq: 457. Material fee as indicated in Schedule of Classes. Laboratory investigations and design of multistage amplifiers, active filters, modulators, and other special-purpose circuits.
460. Microcomputer Interface Design. (Lct: 4). Cr. 4

Prereq: ECE 361. Introduction to digital logic families, microcomputer buses, and interfacing devices: optoisolator, SCR, TRIAC, A/D, D/A, PIA, ACIA, and the like. Designing and interfacing microcomputer with real-world devices.

## 461. Introduction to Logical Design of Computers. (Lct: 4).

 Cr. 4Prereq: ECE 361, 357. Design of arithmetic units, counters, and registers. Design of core memories and semiconductor memories. Direct memory access circuits. Design of hardwired and microprogrammed control units. Design of a small computer. Introduction to VSLI design.
468. Computer Organization. (Let: 4). Cr. 4

Prereq: ECE 333, 361. Introduction to basic concepts of digital computers including representation of information, storage mechanisms, logical circuits, I/O devices and interfaces, elementary machine, special features in computers.

470. Iutroduction to Communication Theory, (Lct: 4). Cr. 4 Prereq: I E 322 and ECE 433. Basic information transmission concepts. Spectral analysis. Transmission through linear networks. Sampling principles. Digital and analog communication signals and systems. The effect of noise in communication systems. Elementary decision theory.
480. Electromagnetic Fields and Waves I. (Let: 4). Cr. 4

Prereq: ECE 333. Fundamentals of electromagnetic engineering, static electric and magnetic fields using vector analysis and fields of steady currents, Maxwell's equations and boundary value problems. Basic principles of plane waves, transmission lines and radiation. (T)
485. Introduction to Engineering Optics. (Let: 4). Cr. 4

Prereq: ECE 433. Introduction to contemporary optical engineering. The fundamental principles of geometrical optics, wave properties of light, Fourier optics and interaction of light and matter.
490. Directed Study. (Ind: 1). Cr. 1-4(Max. 4)

Prereq: senior standing; approval of outline of proposed study by adviser and chairperson prior to registration. Supervised study and instruction in a field selected by the student.

## 502. (CSC 662) Matrix Computation I. (Lct: 4). Cr, 4

Prereq: CHE 304. Student computer account required. Background matrix algebra; linear system sensitivity; basic transformations; Gaussian elimination; symmetric systems; positive definite systems; Householder method for least squares problems; unsymmetric eigenvalue problems; the QR algorithm.
504. Numerical Methods for Engineers. (CHE 504). (Let: 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.
510. (M E 510) Engineering Physiology. (Let: 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.
516. (M E 516) Biomechanics I. (Let: 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.
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.
532. Network Synthesis. (Let: 4). Cr. 4

Prereq: ECE 433. Introduction to realizability theory. Review of positive real functions. Contemporary techniques for synthesis of prescribed transfer functions. Scattering matrices, reciprocal and nonreciprocal n-ports.

## 536. Computer-Aided System Analysis and Design. (Let: 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. (Let: 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.
541. Power Electronics and Control. (Let: 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.
542. Electromechanical Energy Conversion. (Let: 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.
543. Electric Energy Systems Enginering. (Let: 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.
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.
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.

## 557. Electronic Digital Circuit Analysis and Design. (Let: 4). Cr. 4

Prereq: ECE 361 and 457. Introduction to electronic digital devices and circuits including analysis of various logic gates using several techniques of implementation such as transistor-transistor logic (TTL), emitter-coupled logic (ECL), encoding/decoding circuits, diode matrices, counters, clocks, pulse distributors. Logic and storage circuits, switching speeds and other considerations involved in the design of digital circuits.
560. Design of Computer Languages. (Let: 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.
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.
563. Microcomputer Laboratory. (Lct: 1; Lab: 3). Cr. 2

Prereq: ECE 434, 460. Material fee as indicated in Schedule of Classes. Study of interrupt structures, interfacing with teletypes, floppy disks, cassettes, keyboards and displays, testing and evaluation of microprocessors. Design and development of complete digital systems using a microprocessor development system.
564. (CSC 442) Computer Operating Systems. (Let: 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.
565. (CSC 638) Microprogrammed Computer Design. (Let: 4). Cr. 4
Prereq: CSC 451 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.
568. Switching Circuits. (Let: 4). Cr. 4

Prereq: ECE 468. Threshold, symmetric functions, and iterative networks. Multivalued and fuzzy logic. Complex sequential machine realization. State equivalence and minimization. Automata and linear machines. State identification and fault detection.
570. Analog and Digital Communication Circuits. (Let: 4). Cr. 4 Prereq: ECE 457 and 470. Student computer account required. Amplitude, frequency, pulse modulation and digital modulation. Detection, operational amplifiers; introduction to linear integrated circuits. Digital modulation.
573. Communications Laboratory. (Lab: 2). Cr. 2

Prereq: ECE 470; coreq: 570 . Material fee as indicated in Schedule of Classes. Analog and digital modulation techniques, pulse code modulation, delta modulation, FSK, PSK and ASK, data communication, signal processing.
(Y)
577. Digital Signal Processing. (Lct: 4). Cr. 4

Prereq: ECE 470. Student computer account required. Analysis of discrete signals and systems. Applications to digital filtering, active filters, digital communication and encoding.
587. Introduction to Lasers. (Let: 4). Cr. 4

Prereq: ECE 457, 480. Fundamental principles of laser operation. Detailed description of various laser systems. An introduction to fiber and integrated optics; particular emphasis on modern communication systems.
(Y)
590. Directed Study. (Ind: 1). Cr. 1-4 (Max. 4)

Prereq: admission to MSEE program, approval of outline for proposed study by adviser and chairperson prior to registration. Supervised study and instruction in the field selected by the student.
595. Special Topics in Electrical and Computer Engineering I. (Let: 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 .
618. Bioinstrumentation. (ME618) (I E618). (Lct: 4). Cr. 4 Prereq: ECE 510. Engineering principles of physiological measurements, signal conditioning equipment, amplifiers, recorders and transducers. Recent advances in instrumentation.
(I)
644. Linear Dynamic Systems. (Let: 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.
655. Solid State Electronics II. (Let: 4). Cr. 4

Prereq: ECE 555. Advanced concepts on the electronic properties and fabrication of solid state devices. Semiconductor surface devices and their technology. Charge-coupled devices and integrated circuit configurations. Solid state devices in the microwave region. Avalanche diodes. Magnetism and magnetic bubbles. Solar cells and optoelectronic devices.
660. Engineering Software Design. (Let: 4). Cr. 4

Prereq: CSC 370 or ECE 562. Software engineering principles developed and integrated to identify, modify, extend, and apply computational and information-processing methods in a variety of systems applications. Structural analysis, design and programming is assumed and integrated into an engineering systems design context.
664. Database Machines. (Let: 4). Cr. 4

Prereq: ECE 562. Theory, design, and applications of database machines. Hardware implementation of database functions; search, sort, relation operations, and the like. Example of early and current machines: RAP, CASSM, DBC, DIRECT, RDBM, SABRE, VERSO.
665. Fault-Tolerant Computer Architecture. (CSC 632). (Lct: 4). Cr. 4
Prereq: ECE 568 or CSC 451. 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. (Let: 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.


# INDUSTRIAL ENGINEERING AND OPERATIONS RESEARCH 

Office: 640 Putnam
Chairperson: Leonard R. Lamberson

## Professors

Kailash C. Kapur, H. Allan Knappenberger, Leonard R. Lamberson, Vinod K. Sahney

## Associate Professor

Kenneth R. Chelst

## Assistant Professors

Heng Chang, Olugbenga Mejabi, Hyun-Myung Shin, Gary Wasserman

## Degree Programs

## Bachelor of Science in Industrial Engineering

* 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

 ResearchIndustrial engineers are involved in the design of systems related to producing a product or providing a service. Relevant to this work, industrial is interpreted to include manufacturing, financial, retail, health, governmental and other service industries.

In manufacturing organizations, the industrial engineer is involved in 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.

There are many similarities in the academic preparation for various careers in engineering. All engineers are required to take courses in mathematics, physics, chemistry, mechanics, materials, and electricity. There are also important differences in the academic preparation for each of the engineering disciplines. Since many of the systems of concern to the industrial engineer involve a human component, an understanding of the physiological and psychological capabilities of humans is important. Thus, the industrial engineering curriculum includes courses in human performance and workplace design. In
order to model and study complex systems a special set of mathematical tools and a methodology have emerged in recent years, a body of knowledge labeled operations research, the importance of which to the discipline of industrial engineering, is reflected in the name of this department. The computer has also become a powerful tool in the design, management and control of these complex systems. Consequently, the use of the computer and the design of computer based systems is an important component of many undergraduate courses.

## Bachelor of Science

 in Industrial EngineeringAdmission Requirements: see pages 112-113.
DEGREE REQUIREMENTS: Candidates for the Bachelor of Science degree must complete 136 credits in course work, including satisfaction of the University General Education Requirements (see page 20), as outlined in the following curriculum. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages $5-35$ and $112-116$, respectively. Non-engineering courses, cited below by subject rather than by individual course numbers, indicate courses to be selected in fulfillment of University General Education Requirements. The degree requirements shown in the curriculum below are in effect as of the publication date of this bulletin. However, students should consult an academic adviser for verification of current requirements.

## Freshman Year

## First Semester

Credits
MAT 201 - Calculus I .....  .4CHM 107 -(PS) Principles of Chemistry I.
ENG 102 - (BC) Introductory College Writing.4
UGE 100 - (GE) Introduction to the University \& its Libraries. ..... 1
HIS 195 - (HS) Society and the Economic Transition .....  3
Total: 16
Second Semester
MAT 202 - Calculus II ..... 4
PHY 217 - (PS) General Physics ..... 4
MEI 130 - Science of Engineering Materials .....  .4
CSC 105 - Fortran Laboratory for Engineers. .....  1
PS 101 or PS 103

- (Al) American Government ..... 4
- (Al) The American Governmental System. .....  3


## Sophomore Year

## First Semester

MAT 203 - Calculus III .....  4
PHY 218 - General Physics .....  .4
M E 240 - Statics .....  3
I E 322 - Probability and Statistics in Engineering. .....
CSC 102 - Computer Science I. .....  4
Second Semester
MAT 235 - Elementary Differential Equations .....  3
ENG 305 - (IC) Technical Communication I: Report Writing. .....
CHE 230 - Thermodynamics I .....  3
M E 340 - Dynamics .....  3
ECE 262 - Introduction to Microcomputers .....  4

## Junior Year

## First Semester



## COURSES OF INSTRUCTION ${ }^{1}$ (I E)

## 311. Human Factors in Design. Cr. 4

Prereq: I E 322. Student computer account required. Anthropometric, physiologic, psychologic and biomechanical characteristics of people which affect the performance of man-machine systems. Sensory, information processing and motor abilities of peopie. Systematic consideration of human factors in engineering. A design project is required.

## 312. Work Design and Measurement. Cr. 4

Prereq: 1 E 322. Control, operation and design of manned industrial and service systems. Analysis and evaluation of processes and operations. Methods and techniques to measure work performance and strain of the human operator. Principles and procedures to design and operate systems that involve people for maximal safety, job satisfaction and efficiency.

## 322. Probability and Statistics in Engineering. Cr. 3

Prereq: MAT 202, CSC 105. An introduction to probability theory and statistics with emphasis on engineering data analysis and design methods which recognize the concept of variability. Applications to product reliability, process control and queueing systems.
335. (M E 345) Manufacturing Processes I. Cr. 4 Prereq: M E 360, MET 130. A study of the field of manufacturing

[^22]processes from a mechanical engineering design standpoint. Topics include optimum mechanical design for cost, weight, stresses, energy, tolerances in such processes as forging, casting, welding and metal cutting. Metrology, automation, cutting forces and cutting speeds. Lab phase includes industrial plant visits, hands-on experience in the machine shop with projects such as metal removal rates, cutting forces, machine-tool demonstrations and films of manufacturing operations.
( $\mathrm{F}, \mathrm{W}$ )

## 341. Systems Simulation. Cr. 4

Prereq: I E 322 and 556, CSC 102. Student computer account required. Design and analysis of production and service systems using computer simulation. Computer assignments and a project are required.

## 431. Production Control. Cr. 4

Prereq: I E 341, 556, ENG 305. Student computer account required. The design of production planning and control systems. Materials management, forecasting, planning, scheduling of production systems, the planning and scheduling for large scale projects and introduction to the design of computerized materials management systems. Applications of operations research models to production control problems.

## 433. Facilities Design. Cr. 4

Prereq: I E 311, 312, 431, 487. Design of manufacturing, warehouse and material handling facilities. Use of analytic and computer-aided methods in the facilities design process.
441. Computer Aided Manufacturing I. Cr. 4

Prereq: CSC 105, ECE 330, senior standing. Student computer account required. Material fee as indicated in Schedule of Classes. The use of microprocessors in the design of computer-aided manufacturing systems. A design project involving software development and the construction of a physical simulation is required. (Y)
487. Engineering Economy. Cr. 3

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)

## 490. Directed Study. Cr. 1-6

Prereq: senior standing; consent of chairperson; outline of proposed study approved by instructor and chairperson prior to election of course. Supervised study and instruction in a field selected by the student.
510. (M E 510) Engineering Physiology. Cr. 4

Prereq: ECE 430 or M E 340 . The basic principies 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 aut omotive 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.
556. Operations Research 1. Cr. 4

Prereq: IE 322, MAT 204. Student computer account required. An introduction to the philosophy of operations research. Formulation of linear programming models and their solution. Duality and sensitivity analysis. The transportation model. Introduction to probabilistic modeling and applications of queueing models.
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.
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.
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.
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.
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.

## 631. Production Systems 1. Cr. 4

Prereq: I E 621. No credit after I E 431 or I E 433. Fundamental theories and concepts in the design and operation of production systems for manufacturing and service organization.
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.

## 643. Compater 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 are required.

# MECHANICAL ENGINEERING 

Chairperson: K. A. Kline

Associate Chairperson: T. Singh

## Professors

A. Akay, C. N. DeSilva, N. A. Heneỉn, R. A. Ibrahim, R. M. Jamison (Emeritus), A. I. King, K. A. Kline, D. P. Lalas, L. M. Patrick (Emeritus), R. A. Piccirelli, G. E. Rivers (Emeritus), E. Rivin, T. Singh, A. B. Whitman

## Associate Professors

D. D. Ardayfio, H.P. Hale (Emeritus), P.B. Karlic, M. G. Koenig, G. P. Loweke (Emeritus), E. C. Zobel (Emeritus)

## Assistant Professors

J. C. Ku, M. C. Lai, S. A. Lantz, H. M. Uras, K.H. Yang, A. A. Zeid

## Adjunct Professors

R. S. Levine, K.N. Morman, P.R. Perumalswami, E. M. Petrick, E. A. Saibel

## Adjunct Associate Professors

D. Bowen, W. Bryzik, G.L. Casey, T. Khalil, D.M. Lawson, J.W. Melvin, D.G. Penney, J.A. Sedensky, J. Tustaniwskyj, D. Viano

## Adjunct Assistant Professor

## D.P. Fyhrie

## Degree Programs

## Bachelor of Science in Mechanical Engineering

* 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. To prepare undergraduate students for these opportunities, the Wayne State University Mechanical Engineering curriculum is designed to give a basic core education in the humanities, mathematics, natural sciences, basic applied sciences, engineering fundamentals, and to provide advanced electives in many applied fields.

Fields of departmental expertise include such important areas as biomechanics, energy conversion, combustion engines, emissions controls, solar energy, computer graphics, structural analysis, automatic controls, vehicle dynamics, robotics, thermodynamics, continuum mechanics, fluid dynamics, vibrations, heat transfer, mechanisms, acoustics and noise control, and design. Faculty members in the Department are currently engaged in state-of-the-art research and teaching in all of these areas.

[^23]
## Bachelor of Science <br> in Mechanical Engineering

The Bachelor of Science in Mechanical Engineering is accredited by the Engineering Council for Professional Development.

Admission Requirements: see pages 112-113. All entering freshmen are initailly advised by the Associate Chairperson of the Department. Subsequently, at the end of the sophomore year the student may be assigned a different Department faculty member as an adviser for the last two years. The student and adviser together plan a complete program of study, including electives, which meets departmental requirements and the interests of the individual student. Two of the technical electives must be chosen from among the 500 level courses offered by the Mechanical Engineering Department. These may include advanced (second) courses in strength of materials, fluid mechanics, approximate methods of analysis, automatic controls, or vibrations; or they may build on prior sequences such as thermodynamics and heat transfer or mechanical design and mechanisms; or they may be in new directions such as acoustics, computer graphics, biomechanics, engine combustion, vehicle design, atmospheric fluid dynamics or directed study and research in an area of mutual interest to the student and a faculty member.

DEGREE REQUIREMENTS: Candidates for the Bachelor of Science degree must complete 138 credits in course work, including the University General Education Requirements (see page 20), as outlined in the following curriculum. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages $5-35$ and 112-116, respectively.

Part-time study (with most courses offered in the evening) and cooperative programs allow professionals working in local industry to pursue an undergraduate degree while continuing employment. The degree requirements shown in the curriculum below are in effect as of the publication date of this bulletin, however, students should consult an academic adviser for verification of current requirements.

A special option in manufacturing engineering is under development. Contact the Department office for details.

## MECHANICAL ENGINEERING CURRICULUM

## Freshman Year

| First Semester |  |
| :---: | :---: |
|  | Credits |
| MAT 201 - Calculus 1. | 4 |
| CHM 107 - Principles of Chemistry. |  |
| ENG $102-(\mathrm{BC})$ Introductory College Writing. |  |
| UGE 100-(GE) The University and its Libraries |  |
| CSC 105 - FORTRAN Laboratory for Engineers. |  |
| M E 114 Engineering Graphics I |  |
|  | Total: 16 |
| Second Semester |  |
| HIS 195 - (HS) Society and the Economic Transition .......................................... 3 |  |
| MAT 202 - Calculus II............................................................................... 4 |  |
| PHY 217 - (PS) General Physics................................................................. 4 |  |
| MET 130 - Science of Engineering Materials.................................................. 4 |  |
| M E 347 - Intro. to Computer-Aided Mechanical Drafti | ..... 3 |

## Sophomore Year

## First Semester

MAT 203 - Calculus III. .....  .4
PHY 218 - General Physics .....  .4
ME 240 - Statics. .....  3
M E 220 - Thermodynamics 1 .....  3
ECO 101 or ECO 102
-(SS) Principles of Macroeconomics .....  3

- (SS) Principles of Microeconomics .....  3
Total: 17
Second Semester
M E 360 - Elementary Mechanics of Materials .....  3
M E 340 - Dynamics .....  3
I E 322 - Probability and Statistics in Engineering .....  3
MAT 235 - Elementary Differential Equations .....  3
ECE 330 - Introduction to Electrical Circuits. .....  3Total: 15


## Junior Year

## First Semester

ECE 331 - Electrical Circuits: Laboratory .....  .1
M E 345 - Manufacturing Processes .....  .4
M E 330 - Fluid Mechanics .....  4
ME 320 - Thermodynamics II ..... 3
M E 341 - Vibrations I .....  4
ENG 305 - (IC) Technical Communication I: Report Writing .....  3
Total: 19
Second Semester
ME 348 - Design of Machine Elements .....  4
M E 440 - Analysis and Control of Dynamic Systems .....  4
ME 491 - Measurements, Instrumentation \& Data Analysis Lab .....  .2
CHE 304 - Computational Methods in Engineering .....  3
PS 101 or PS 102

- (Al) American Government .....  .4
- (AI) The American Governmental System ..... 3
ENG $306-(0 C)$ Technical Communication II: Writing \& Speaking .....  3
Total: 19
Senior Year
First Semester
M E 445 - Mechanical Engineering Design I. ..... 4
M E 493 - Mechanical Systems and Test Planning Laboratory .....  2
ME 420 - Heat Transter ..... 3
Visual and Performing Arts (VP) elective (HUM 101 or A H 100) .....  3
Technical Elective .....  4
Total: 16
Second Semester
ME 450 - Mechanical Engineering Design II .....  4
Philosophy and Letters (PL) elective ( 300 -level) .....  3
B10 101 - (LS) Basic Biology I .....  4
Technical Elective .....  4
ANT 315 - ( FC ) Anthropology of Business. .....  3
Total: 18
TOTAL CREDITS ..... 138
Technical Electives must be selected from the Mechanical Engineering Department at the 500 level.

COURSES OF INSTRUCTION ${ }^{1}$ (M E)

## 114. (E T 114) Engineering Graphics I. Cr. 2

Material fee as indicated in Schedule of Classes. Theory and application of projection drawing; multiview drawing and sketching; pictorial drawing and sketching; sectional views; the basic techniques of dimensioning; charts and graphs.

## 115. (E T 115) Engineering Graphics II. Cr. 2

Prereq: M E 114. Material fee as indicated in Schedule of Classes. Multiview and pictorial drawing of complex objects; advanced dimensioning techniques; standard drafting room practices; drafting standards; interpretation of industrial drawings; major topics in descriptive geometry: primary and successive auxiliary views, lines and line measurements, planes and plane measurements, intersection of two- and three-dimensional objects and revolution of lines and surfaces.
220. Thermodynamics I. Cr. 3

Prereq: MAT 202. A study of the transformation of heat energy to other energy forms. Introduction to the basic concepts and laws of thermodynamics. Description of thermodynamic properties and processes for simple substances. Applications to energy conversion systems.

## 240. Statics. Cr. 3

Prereq: MAT 202 and PHY 217. Basic concepts and principles of statics with application of Newton's Laws of Motion to engineering problems. Forces, moments, equilibrium, couples, freebody diagrams, trusses, frames, fluid statics, centroids, friction and area and mass moments of inertia.
320. Thermodynamics II. Cr. 3

Prereq: M E 220. Applications of thermodynamics to flow and non-flow situations. Maxwell's relations. Composite properties of state. Irreversibility and availability in the analysis of systems. Combustion calculations. Chemical and phase equilibrium. Properties of mixtures. Energy transfer modes in real systems. Thermodynamic criteria for efficiency.
330. Fluid Mechanics. Cr. 4

Prereq: ME 220, 240, MAT 204. Student computer account required. Introduction to the nature and physical properties of fluids, fluid statics, equation of motion, incompressible inviscid flow, dimensional analysis, incompressible viscous flows, one-dimensional compressible channel flow.
340. Dynamics. Cr. 3

Prereq: M E 240. Basic concepts and principles of dynamics with application of Newton's Laws of Motion to engineering problems. Kinematics and kinetics of particles and rigid and variable-mass bodies. Equations of motion, impulse-momentum principles, impact and work-energy principles.
341. Vibrations I. Cr. 4

Prereq: M E 340. Fundamentals of dynamic principles, energy relation and Rayleigh's principle. Undamped and damped free vibration of one degree-of-freedom systems. Forced vibrations with harmonic excitation: vibration isolation, critical speeds of shafting, systems with two degrees of freedom. Introduction to vibrations of continuous media.
(F,W)
345. Manufacturing Processes I. (I E 335). Cr. 4

Prereq: M E 360, MET 130. A study of the field of manufacturing
processes from a mechanical engineering design standpoint. Topics include optimum mechanical design for cost, weight, stresses, energy, tolerances in such processes as forging, casting, welding and metal cutting. Metrology, automation, cutting forces and cutting speeds. Lab phase includes industrial plant visits, hands-on experience in the machine shop with projects such as metal removal rates, cutting forces, machine-tool demonstrations and films of manufacturing operations.
( $\mathrm{F}, \mathrm{W}$ )

## 347. Introduction to Computer-Aided Mechanical Drafting and Design. Cr. 3

Prereq: E T 114. Introduction to CAD systems, hardware and software configurations, and available software systems at the Computer Graphics and Design Laboratory, including MEDUSA, PDGS, DOGS, (TEMPLATE), (ANSYS), and ENPORT.
348. Design of Machine Elements. Cr. 4

Prereq: M E 360. Analysis and design of common mechanical elements such as gears, springs, clutches, brakes, shafts, belts, bearings, etc. Problem laboratory for more complex design problems and for introduction to computer-aided design. Limitations on design imposed by safety, manufacturability, cost and material properties.
(F,W)
360. Elementary Mechanics of Materials. Cr. 3

Prereq: M E 240 or C E 240. Elastic relationships between external forces acting on deformable bodies and the associated stresses and deformations; structural members subjected to axial load, torsion and bending; column buckling; combined stresses, repeated loads; unsymmetrical bending.
420. Heat Transfer. Cr. 3

Prereq: M E 220 and 330. Student computer account required. Fundamental concepts and the basic modes of heat transfer. The general equation of heat conduction. Steady state heat conduction on one and more dimensions. Transient heat conduction. Heat transfer by radiation, Kirchoff's Law and the black body. Radiation between diffuse surfaces. Radiation from gases, vapors and flames. Introduction to heat convection; the concept of the heat transfer coefficient and Nusselt number.
(F,W)
440. Analysis and Control of Dynamic Systems. Cr. 4

Prereq: MAT 204 and M E 340. Material fee as indicated in Schedule of Classes. Mathematical modeling of linear, lumped, time-invariant systems. Open and closed loop systems. Single-input-single-output system design using frequency domain methods. Introduction to state-space concepts.
(F,W)

## 445. Mechanical Engineering Design I. Cr. 4

Prereq: M E 330, 341, 345, 348, ECE 330; coreq: M E 440. Material fee as indicated in Schedule of Classes. Engineering analysis of design case histories through the application of familiar engineering principles and methods. Critical evaluation of previously designed systems, and recommendations for possible improvement, in written and oral student reports.
(F,W)
450. Mechanical Engineering Design II. Cr. 4

Prereq: ME 445, 420. Student computer account required. Students work in teams on a semester-long open-ended design project in which elements and subsystems are synthesized into larger systems. Formal written report required at the end of the project. Where applicable, hardware will be fabricated and tested.
(F,W)
490. Directed Study. Cr. 1-6(Max. 6)

Prereq: senior standing; consent of chairperson; outline of proposed study approved by instructor and chairperson prior to election of course. Supervised study and instruction in the field selected by the student.

[^24]491. Measurements, Instrumentation and Data Analysis Laboratory. Cr. 2
Prereq: ENG 305, ECE 330, ECE 331, M E 320, ME 330, ME 340, M E 360, and consent of instructor. Student computer account required. A laboratory experience in measuring the physical phenomena frequently encountered in the mechanical engineering field using modern instrumentation, transducers, recording methods and information signal processing data. Data analysis techniques and statistical data treatment applied to a variety of tests selected to illustrate mechanical engineering theory and practice.
( $\mathrm{F}, \mathrm{W}$ )
493. Mechanical Systems and Test Planning Laboratory. Cr. 2

Prereq: M E 491, ENG 306, M E 341, 440 and consent of instructor. Student computer account required. A laboratory experience in planning and conducting tests on a complete mechanical engineering system. Separate system experiments conducted by the students in the fields of fluids, thermodynamics, dynamics and controls. Classic, analog and parametric test plans used to collect and analyze data and report test results.
( $\mathrm{F}, \mathrm{W}$ )
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.
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.
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.
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.
510. Engiueering Physiology. (ECE 510) (IE 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.
516. Biomechanics I. (ECE 516) (IE 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.
524. Industrial Combustion Systems. (CHE 524). Cr. 3

Prereq: M E 420 or CHE 320. Introduction to operating principles and design features of modern boilers, furnaces, gas turbine combustors, and advanced continuous combustion systems. Application of basic thermodynamics and heat transfer calculations to testing and design.
(B:F)
530. Intermediate Fluid Mechanics. Cr. 4

Prereq: ME 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.
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, turbomachiners, airfoil theory and fluidics.
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.
541. Vibrations 11. 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.
542. Computer Applications in Mechanical Design. Cr. 4

Prereq: ME 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.
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.
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. Fundementals 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.
550. Microprocessors for Measurement and Control. Cr. 4

Prereq: M E 440, 491, and CHE 304. Introduction to principles of microprossors and high level languages for programming
microprossors for measurement and control. Typical systems include: DC motor speed, stepping motors, temperature control of mixing process, automatic weigning, etc.
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)
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: ME 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.

## 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 comtrol 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.
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 systerns. 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.

## 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.
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.
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, polynominal 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.
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.
582. Thermal Environmental Engineering. Cr. 4

Prereq: ME 320 an 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)

## 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 .
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)

# METALLURGICAL ENGINEERING 

Chairperson: R. H. Kummler<br>Professors<br>L. Himmel, P. K. Rol, M. Semchyshen<br>Associate Professors<br>C. Manke, S. Putatunda<br>\section*{Degree Programs}<br>\section*{Bachelor of Science in Metallurgical Engineering<br><br>* Master of Science in Metallurgical Engineering<br><br>* 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 ancient 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.

The metallurgical engineering curriculum combines the study of this relationship between the structure and properties of materials with the engineering aspect of metal production, fabrication and use. Elective courses offered during the senior year enable students to follow their particular interests in detail, and a senior research and seminar sequence provides the opportunity for independent work with appropriate faculty guidance.

## Bachelor of Science in Metallurgical Engineering

Admission Requirements: see pages 112-113. The degree requirements shown in following curriculum are in effect as of the publication date of this bulletin, however, students should consult an academic adviser for verification of current requirements.

DEGREE REQUIREMENTS: Candidates for the Bachelor of Science degree must complete 138 credits in course work, including satisfaction of the University General Education Requirements (see page 20), as outlined in the following curriculum. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 112-116, respectively. Non-engineering
entries cited below by subject, rather than by individual course numbers, indicate courses to be selected in fulfillment of the University General Education Requirements.

## METALLURGICAL ENGINEERING CURRICULUM

## Freshman Year

## First Semester

Credits
UGE 100 - (GE) The University and its Libraries ..... 1
MAT 201 - Calculus I .....  4
CHM 107 - Principles of Chemistry .....  4
ENG $102-(B C)$ Introductory College Writing. .....  4
PS 103 - (Al) The American Governmental System .....  3
Total: 15
Second Semester
MAT 202 - Calculus 11 .....  4
CHM 108 - Principles of Chemistry 11. ..... 5
HIS 195 - (HS) Society and the Economic Transition .....  3
ECO 101 or ECO 102

- (SS) Principles of Macroeconomics .....  3
-(SS) Principles of Microeconomics .....  3
Total: 15


## Sophomore Year

## First Semester

MAT 203 - Calculus III. .....  4
PHY 217 -(PS) General Physics .....  .5
MET 130 - Science of Engineering Materials. .....  .4
I E 322 - Probability and Statistics in Engineering. .....  3
Total: 16
Second Semester
MAT 235 - Elementary Differential Equations .....  3
CHE 230 - Thermodynamics I. .....  3
CHE 280 - Material and Energy Balance. .....  3
MET 260 - Introduction to Metallurgical Engineering. .....  3
PHY 218 - General Physics .....  5
Total: 17

## Junior Year

## First Semester

MET 330 - Metallurgical Thermodynamics .....  3
MET 340 - Physical Metallurgy 1 .....  4
MET 342 - Physical Metallurgy Laboratory I .....  1
CHE 304 - Computational Methods in Engineering .....  3
ENG 305 - (IC) Technical Communication I: Report Writing. .....  3
MET Advanced Science Elective. .....  3Second Semester

* Life Science elective. .....  3
MET 360 - Physical Metallurgy II .....  4
MET 362 - Physical Metallurgy Laboratory II .....  .1
MET 370 - Mechanical Behavior of Metals. .....  3
CHE 320 - Chemical Process Engineering 1: Fluid Flow and Heat Transfer .....
Total: 18


## Senior Year

## First Semester

MET 400 - Modern Methods of Structural Analysis. .....  3
MET 430 - Processing and Fabrication of Metals. .....  3
MET 426 - Senior Project $\mid$ ..... 2
ANT 315 - (FC) Anthropology of Business. .....  3
ENG 306 - ( $0 C$ ) Technical Communication II: Writing and Speaking .....  3
Visual and Performing Arts (VP) elective. .....  3
MET Technical Elective .....  3
Total: 20

[^25][^26]
## Second Semester

MET 450 - Materials Selection and Design .....  3
MET 460 - Principles of Extractive Metallurgy ..... 3
MET 486 - Senior Project II .....  .2
MET Technical Electives .....  7
Philosophy and Letters (PL) elective ( 300 level) .....  3
MET Technical Design Elective .....  2
Total: 20
TOTAL CREDITS: ..... 138

Technical Electives: Consult with the departmental adviser; at least half of the technical elective credits must be in Metallurgical Engineering courses.

## COURSES OF INSTRUCTION ${ }^{1}$ (MET)

## 130. Science of Engineering Materials. Cr. 4

Prereq: CHM 107; coreq: PHY 217. Material fee as indicated in Schedule of Classes. Introduction to the behavior and properties of metallic, ceramic, polymeric and composite materials. The relationship between the internal arrangement of atoms in materials and their observed mechanical, thermal, electrical and chemical behavior. Discussion sections include laboratory experiments, demonstrations, problem solving and review.
260. Introduction to Metallurgical Engineering. Cr. 3

Prereq: MET 130; PHY 218. An overview of metallurgical engineering with emphasis on physical metallurgy: structure and properties of metallic materials, phase diagrams, microstructure, deformation, recrystallization, transformations and surface treatment.
330. Metallurgical Thermodynamics. Cr. 4

Prereq: CHE 230, MET 260. The applications of thermodynamics to metallurgical systems; emphasis on phase equilibria in one-component systems, the thermodynamics of solutions, and the relationships between free energy-composition diagrams and phase diagrams in binary and multi-component systems.
340. Physical Metallurgy I. Cr. 4

Prereq: MET 260; coreq: 330. Detailed understanding of relationships between structure and properties of metals and alloys, and of the principles of microstructural control. Crystallography, methods of structural analysis, crystal defects and interfaces, diffusion, and nucleation. Course is continued in MET 360.
342. Physical Metallurgy Laboratory I. Cr. 1

Prereq. or coreq: MET 340 and ENG 305. Material fee as indicated in Schedule of Classes. Laboratory investigations of topics covered in MET 340 and related areas.
360. Physical Metallurgy II. Cr. 4

Prereq: MET 340. Continuation of MET 340, with applications to phase transformations and related phenomena in physical metallurgy. Solidification, recovery and recrystallization, precipitation from solid solutions, diffusion-controlled and martensitic phase transformations.
(W)

## 362. Physical Metallurgy Laboratory II. Cr. 1

Prereq: ENG 305; prereq. or coreq: MET 360 and MET 370. Material fee as indicated in Schedule of Classes. Laboratory investigations of topics covered in MET 360 and MET 370 and related areas.

[^27]370. Mechanical Behavior of Metals. Cr. 3

Prereq: MET 260. Strength, plastic deformation and failure of crystalline materials from the metallurgical point of view. Dislocation behavior and the mechanisms of yielding, strengthening, fracture, fatigue and creep of engineering materials.
(W)
400. Modern Methods of Structural Analysis. Cr. 3

Prereq: MET 360. Material fee as indicated in Schedule of Classes. Introduction to x-ray crystallography, diffraction theory and its applications, the stereographic projection, pole figures, twinning, crystal orientation and line broadening. Introduction to reciprocal lattice in solution of crystallographic problems.

## 409. Physical Ceramics. Cr. 3

Prereq: MET 130; senior standing. Relationships between the structure and properties of ceramic materials including ceramic for electronic, opical or photonic, biological and structural applications.
411. Ceramic Processing and Fabrication. Cr. 3

Prereq: MET 409. Principles and practices of the processing and fabrication of ceramic materials as well as the characterization of the properties of such materials.
426. Senior Project I. Cr. 2

Prereq: MET 360, 370. Organization of a research project: literature survey; equipment specification; presentation of a written proposal; and initiation of the the laboratory investigation.
(F,W)
430. Processing and Fabrication of Metals. Cr. 3

Prereq: MET 360 and 370. Analysis of forming and joining from the metallurgical point of view. Deformation processing, powder metallurgy, brazing and welding. Materials properties and behavior during and after processing.
435. (CHE 435) Polymer Structure and Properties. Cr. 3

Prereq: MAT 204, CHM 224, MET 130. Introductory study of fundamental relations between chemical structures and physical properties of polymers. The special properties of polymers that make their application both desirable and undesirable. Classified as a chemistry elective.
437. (CHE 437) Polymer Process Engineering. Cr. 3

Prereq: CHE 435. Detailed analysis of polymer processing. Rheology of polymers, flow in tubes, calendaring, extrusion, injection molding, surface phenomena, and polymer crystallization. Classified as a design elective.
450. Materials Selection and Design. Cr. 3

Prereq: MET 360, 370, and ENG 305. Application of engineering and science background to the design of equipment and processes. Comprehensive problems dealing with data sources, design principles and economics.
460. Principles of Extractive Metallurgy. Cr. 3

Prereq: MET 330. Basic scientific and engineering principles involved in the extraction of metals from their ores, with particular emphasis on pyrometallurgical methods used in the manufacture of iron and steel.
(W)
486. Senior Project II. Cr. 2

Prereq: MET 426. Completion of the laboratory investigation begun in MET 426. Preparation of a comprehensive written report on the research project. Final oral report to the department staff. (F,W)
490. Directed Study. Cr. 1-6

Prereq: consent of adviser. Student selects some field of metallurgical engineering for advanced study and instruction.
(T)
494. Engineering Experience Report. Cr. 1-3(Max. 3)

Prereq: consent of adviser and minimum of 8 weeks of approved metallurgical engineering or allied professional work in industry.

Offered for $S$ and $U$ grades only. Preparation of an engineering report covering its nature, scope and professional responsibilities. Oral report to peer group.
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.

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.
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.
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.
553. Fatigue of Engineering Materials. Cr. 3

Prereq: MET 130, C E 240 or MET 370. Fatigue, cyclic stress and strain, fatigue craçk initiation, dislocation behavior in cyclic loading, stress controlled fatigue, Goodman, Soderberg, Gerber diagram fatigue crack propagation in metals, polymers, ceramics and composite materials.
555. (CHE 563) Tribology. Cr. 2

Prereq: CHM 544, CHE 330 or MET 330. The laws of friction, the nature of polymeric and solid surfaces and their frictional interaction and the process of lubrication.
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.
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.
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.
563. Cast Ferrous Alloys. Cr. 3

Prereq: MET 360. Advanced study of the properties of ferrous castings and solidification mechanisms.
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.
580. Powder Metallargy. 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 ( $\mathrm{P} / \mathrm{M}$ ) 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.
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 .

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 polymercrystallization.
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.

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.
685. Corrosion. (CHE 685). Cr. 3

Prereq: senior standing in engineering. Advanced study of the theories of corrosion of materials; application of these theories in the engineering field. Analysis of industrial problems. Comprehensive engineering reports.
(B)
687. (CHE 687) Elevated Temperature Corrosion. Cr. 3

Prereq: senior standing in engineering. Advanced study in the theories of high temperature corrosion and applications. Analysis of industrial problems and case histories. Classified as CHE design elective.

# DIVISION OF ENGINEERING TECHNOLOGY 

Office: 4855 Fourth Avenue<br>Telephone: (313) 577-0800<br>Director: Mulchand S. Rathod

## Professors

Howard M. Hess (Emeritus), Mulchand S. Rathod

## Associate Professors

Karl O. Anderson, Seymour Cuker, Harry P. Hale (Emeritus), Vladimir Sheyman, Donald V. Stocker

## Assistant Professors

Gopi R. Jindal, Victor Korolov

## Part-Time Faculty

Alan Bitterman, Semyon Brayman, Phillip Charns, Kenneth Christensen, Hadi Ershadi, Mohamed Fahs, Leopold Gendleman, Ramatollah Golshan, Alexander Gopp, Tulin Hidayetoglu, Masood Kazemi, Charles Loeher, Bankimchandra Mehta, Charles Neff, Sandra Overway, J. Jeffrey Pasquinelli, Anthony Slominis, Edward Sturgeon, Mark Zachos

## Degree Program

> Bachelor of Science in Engineering Technology—with majors in electrical/electronic engineering technology, electromechanical engineering technology, manufacturing/industrial engineering technology, and mechanical engineering technology

The Division of Engineering Technology was founded in 1973 and offers an upper-divisional (junior and senior level) program. It stresses the applications of current technology to typical industrial problems. Entering students are assumed to have a background equivalent to an associate degree in engineering technology or in a related discipline. The program complements a community college education by providing more application-oriented analytical techniques. In the curriculum a close relationship is maintained between the theoretical principles taught in the classroom and their applications in corresponding laboratories.

Engineering technology is a profession closely related to engineering and deals with the application of knowledge and skill to industrial processes, production, and management. Technologists are organizers of people, materials, and equipment for the effective planning, construction and maintenance of technical facilities and operations. They are responsible for work requiring technical and practical knowledge. They can apply their abilities in using technical equipment, selling technical products, serving as manufacturers' technical representatives, or supervising varied construction projects and manufacturing processes. They work with engineers in many aspects of project development, production planning, and final testing of industrial, military, or consumer products. Their talents are used in virtually every activity where technical expertise is required. They may be involved with electronic and mechanical instruments, experimental equipment, computing devices, tool design, manufacturing, or drafting. Technical skills in the use of electronic equipment, machinery, tools, and drafting instruments are characteristic of this
type of work. Thus, engineering technology students can find challenging employment in business and industry. Graduates of Wayne State's Engineering Technology program have been employed in areas such as manufacturing engineering, engineering production, marketing, maintenance, quality control, product testing, field engineering, consulting engineering, design, and technical supervision. Baccalaureate Engineering Technology graduates are often called Technologists to distinguish them from baccalaureate graduates of engineering programs. However, the National Bureau of Labor Statistics does not have a category called 'technologist,' and consequently, many industrial job titles show little distinction between technologists and engineers. Graduates of Engineering Technology and Engineering programs complement each other in their skills and interests, and together with technicians and scientists, they form a technological team which has been able to produce an ever-increasing rate of technological advancement.

## BACHELOR OF SCIENCE IN ENGINEERING TECHNOLOGY

Admission Requirements: The program is designed for students with an associate degree in an appropriate engineering technology discipline, an associate degree in engineering science, or college-level course work equivalent to an associate degree in an engineering/technology-related area. A minimum honor point average (h.p.a.) of 2.50 is required for admission to the program. Students with an h.p.a. of 2.0 to 2.5 may be admitted as pre-engineering technology students, and may be placed in the engineering technology program upon successful completion of MAT 180 and PHY 213.

Mathematics Qualifying Examination: Students entering the Division are required to take a mathematics placement examination unless they have earned advanced credit in pre-calculus. This examination should be taken prior to the first registration at Wayne State University. Students should contact the Mathematics Department (577-2479) for examination schedules.

Application for Undergraduate Admissions form is required and may be requested from: Office of Admissions, Wayne State University, Detroit, Michigan 48202.

## Degree Requirements

Candidates for a baccalaureate degree in engineering technology must earn a minimum of 129 credits, including the University General Education requirements (see pages 20-27). No more than sixty-four semester credits may be transferred to apply toward the baccalaureate degree from a community college. At least thirty credits must be earned at Wayne State, at least twenty-four of which must be in Division of Engineering Technology courses. All coursework must be completed in accordance with the academic procedures of the University and the College (see pages $5-35$ and $112-116$, respectively) and must conform to Division academic standards.

At graduation, the University requires a minimum 2.0 honor point average in total residence credit. Additionally, the Division of Engineering Technology requires a minimum 2.0 h.p.a. in total work in the area of specialization. Satisfactory achievement on the English Proficiency Examination, administered by the Testing and Evaluation Office, is required of each student.

Plan of Study: Due to the variation in educational backgrounds of associate degree graduates and the different rates of progress of full-time and part-time students, individual plans of study are developed for students in conjunction with faculty advisers.

NOTE: A student who, after receiving one undergraduate degree at Wayne State University, wishes to obtain a second bachelor's degree must complete at least thirty credits beyond those applied toward the first degree.

## - With a Major in Electrical/Electronic Engineering Technology

With the continued expansion in the use of electrical power, automatic control systems, solid state and micro electronics, communications systems, and computer technology, electrical/electronic engineering technology is the fastest growing specialty area of all the engineering technologies.

Because the movement of electrons in a circuit is not a totally visible physical phenomena, the electrical/electronic engineering technologist does some work in the abstract. For example, mathematical calculations and formulae are used to determine the proper equipment or the proper components in an electronic circuit needed to amplify an electrical signal radiating from a star system millions of light years away.

Most electrical/electronic engineering technologists work in development, design, application, sales and in the manufacture of products.

The major divisions in the field are power and digital/analog electronics. The power specialist works primarily with power generation and distribution systems of electrical equipment, motors, generators, appliances, and controls. Electronic specialists develop and design electronic circuitry. This specialty also includes areas involving computers, communication systems, and electronic controls and devices. The impact of the microprocessor is being felt, not only throughout the entire electrical/electronic field but in most design, analysis, control, testing, and data processing applications.

Admission Requirements: see page 142. Students with an associate degree in electrical or electronic technology from a community college or equivalent college-level coursework may be admitted to the bachelor's degree program in electrical/electronic engineering technology.

This program is designed to extend the practical and applied base of the associate degree program by means of more theoretical electrical and broad engineering technology courses together with further background courses in mathematics, science, and socio-humanities.

Required Background: Any student deficient in any courses listed under Lower Division Technical Transfer will be required to remove the deficiencies before electing any EET courses.

PROGRAM REQUIREMENTS: The program in electrical/electronic engineering technology, leading to the Bachelor of Science in Engineering Technology degree, requires 129 credits as outlined in the following curriculum.


## EET TECHNICAL CORE

ET 303 - Statics. ..... 3
E T 385 - Reliability and Engineering Statistics. ..... 2
E $\mathbb{T} 387$ - Engineering Economic Analysis. .....  3
EET 310 - Digital Design .....  3
EET 315 - Network Analysis .....  .4
EET 318 - Analog Electronics I .....  3
EET 372 - Microprocessor Programming .....  2
EET 415 - Advanced Network Analysis. .....  2
EET 418 - Analog Electronics II. .....  3
EET 420 - Control Systems .....  .4
ET 499 - Senior Project .....  3
Total: 32
EET TECHNICAL SPECIALTY ELECTIVES
(W.S.U. resident credit). .....  9
LOWER DIVISION TECHNICAL TRANSFER
ET 114 - Engineering Graphics 1 .....  2
EET 210 - Principles of Digital Design .....  3
EET 215 - Introduction to Network Analysis ..... 3
EET 272 - Microprocessor Fundamentals .....  3
Electronic Circuits. .....  .2
Other. ..... 17
Total: 30
GENERAL EDUCATION
UGE 100 - (GE) The University and its Libraries .....  1
ENG 102 - (BC) Introductory College Writing .....  .4
ENG 301 or ENG 305

- (IC) Intermediate Writing .....  3
-(IC) Technical Communication I: Report Writing .....  3
SPB 101 - ( $0 C$ ) Oral Communication: Basic Speech .....  .2
Historical Studies (HS) elective .....  3
American Society and Institutions (Al) elective .....  3
Social Sciences (SS) elective .....  3
Foreign Culture (FC) elective. .....  3
Visual and Performing Arts (VP) elective. .....  3
Philosophy and Letters (PL) elective .....  3
Total: 28
Total minimum semester credits for the EET program ..... 129


## - With a Major in Electromechanical Engineering Technology

The electromechanical engineering technology major offers an opportunity in interdisciplinary education, resulting from the implementation of electronics and computers in engineering systems. This major offers an individual plan of study with coursework in electronics, electrical, manufacturing, and mechanical areas, with appropriate prerequisite courses. The program is designed to extend the practical and applied base of the associate degree program by means of more theoretical and more comprehensive engineering technology courses, combined with background courses in mathematics, science, and socio-humanities.

Admission Requirements: Students with an associate degree in electrical, electronics, industrial, manufacturing, mechanical, or related technology from a community college or equivalent college-level coursework may be admitted to the bachelor's degree program in electromechanical engineering technology.

Required Background: Any student deficient in any courses listed under Lower Division Technical Transfer will be required to remove deficiencies before completing fifteen credits in basic science/mathematics and technical core courses.

PROGRAM REQUIREMENTS: The program in electromechanical engineering technology leading to the Bachelor of Science in Engineering Technology degree requires 129 credits as outlined in the following curriculum.

## BASIC SCIENCE AND MATHEMATICS

## credits

CSC 206 - (CL) Introduction to FORTRAN ....................................................... 3
MAT 180 - Elementary Functions ............................................................................
MAT 343 - (ET 343) Applied Calculus I.......................................................... 4
MAT 345 - (E T 345) Applied Calculus II ......................................................... 4
PHY 213 - (PS) General Physics ..................................................................................

CHM 102 -(PS) General Chemistry I ............................................................... 4

Total: 30

## EMT TECHNICAL CORE

E T 214 - Computer Graphics .....  .2
ET 303 - Statics. .....  3
E T 385 - Reliability and Engineering Statistics. .....  2
ET 387 - Engineering Economic Analysis .....  3
EET 301 - Electrical Instrumentation .....  2
EET 372 - Microprocessor Programming .....  2
MCT 310 - Mechanics of Materials. .....  4
MIT 351 - Manufacturing Analysis. .....  3
ET 499 - Senior Project. .....  3
Total: 24
EMT TECHNICAL SPECIALTY ELECTIVES
(W.S.U. resident credit). ..... 17
LOWER DIVISION TECHNICAL TRANSFER
E T 114 - Engineering Graphics 1 . .....
ET 220 - Engineering Materials. .....
EET 200 - Introduction to Electrical Principles. .....  3
EET 272 - Microprocessor Fundamentals .....  3
Other. ..... 20

## GENERAL EDUCATION

UGE 100 - (GE) The University and its Libraries. .....  .1
ENG 102 - (BC) Introductory College Writing. .....  .4
ENG 301 or ENG 305
-(IC) Intermediate Writing ..... 3

- (IC) Technical Communication I: Report Writing. ..... 3
SPB 101 - (OC) Oral Communication: Basic Speech .....
Historical Studies (HS) elective. .....  3
American Society and Institutions (A) elective .....  3
Social Sciences (SS) elective ..... 3
Foreign Culture ( FC ) elective .....  3
Visual and Performing Arts (VP) elective. .....  3
Philosophy and Letters (PL) elective .....  3
Total: 28
Total minimum semester credits for the EMT program ..... 129


## - With a Major in Manufacturing/Industrial Engineering Technology

The manufacturing/industrial engineering technologist is involved in the design, planning, supervision, construction and management of the methods and equipment for the production of industrial and consumer goods.

The magnitude of the manufacturing/industrial engineering technologist's responsiblity can be best illustrated by examining a modern manufacturing plant. Within a typical facility, there are many machines performing hundreds of operations on thousands of parts. These processes include highly automated equipment which produce quality products built to exact specifications. Whether it be a single gear or a complete automobile engine, the logical set of events that result in a finished product is planned in advance. The location of every machine, every movement of a tool or part, the order of operations, even the machines themselves, are planned in detail as part of a total production system by the manufacturing/industrial engineering technologist.

A manufacturing/industrial engineering technologist may choose to specialize in such areas as quality control, plant engineering, manufacturing engineering, production planning and control, or supervision and management.

Admission Requirements: see page 142. Students entering this program would normally have an associate degree from a community college or equivalent college-level course work in one of the following technical areas:
Drafting
Industrial Management
Industrial Technology
Manufacturing
Machine Tools

## Metallurgy

Metals Machining
Metrology and Calibration
Numerical Control Welding

The program is designed to extend the practical and applied base of the associate degree by providing the graduate with depth and breadth in technical science and technical specialty courses as well as in non-technical related areas.

Required Background: Any student deficient in any courses listed under Lower Division Technical Transfer will be required to remove the deficiency before completing fifteen credits in basic science/mathematics and technical core courses.

PROGRAM REQUIREMENTS: The program in manufacturing/industrial technology leading to the Bachelor of Science in Engineering Technology degree requires 129 credits as outlined in the following curriculum.

## BASIC SCIENCE AND MATHEMATICS



## MIT TECHNICAL CORE



E T 305 - Dynamics................................................................................... 3
ET 385 - Reliability and Engineering Statistics............................................... 2

ET 387 - Engineering Economic Analysis....................................................... 3
EET 301 - Electrical Instrumentation.............................................................. 2

MCT 341 - Applied Kinematics .................................................................... 3
MCT 318 or MCT 421

- Fluid Mechanics .......................................................................... 4

MIT 360 - Process Engineering.................................................................. 3
MIT 470 - Computer-Aided Design and Manufacturing........................................... 3.
E T 499 - Senior Project....................................................................................... 3
Total: 35


## MIT TECHNICAL SPECIALTY ELECTIVES

$\qquad$
LOWER DIVISION TECHNICAL TRANSFER
E T 114 - Engineering Graphics I..................................................................... 2
E T 220 - Engineering Materials....................................................................... 2
EET 200 - introduction to Electrical Principles................................................. 3
Machining Laboratory................................................................................ 2
Welding Laboratory....................................................................................................... 2

Total: 30

## GENERAL EDUCATION

UGE 100 - (GE) The University and its Libraries............................................... 1
ENG 102 - (BC) Introductory College Writing................................................... 4
ENG 301 or ENG 305
-(IC) Intermediate Writing .............................................................. 3
-(IC) Technical Communication I: Report Writing.................................... 3
SPB 101 - (OC) Oral Communication: Basic Speech ......................................... 2

American Society and Institutions (Al) elective ................................................. 3
Social Sciences (SS) elective......................................................................... 3
Foreign Culture (FC) elective ........................................................................ 3
Visual and Performing Arts (VP) elective........................................................... 3
Philosophy and Letters (PL) elective ............................................................... 3
Total: 28
Total minimum semester credits for the MIT program ......................................... 129

## - With a Major in Mechanical Engineering Technology

The upper division program in Mechanical Engineering Technology is intended primarily to provide the graduate with depth and breadth in technical science and technical specialities as well as in non-technical related areas. Graduates of this curriculum will receive the degree of Bachelor of Science in Engineering Technology and enter a field of challenging work in which they are broadly concerned with energy, its transformation from one form to another, its transmission, and its utilization. This includes the conversion of chemical, nuclear, or solar energy into mechanical work; the transmission of energy via heat exchangers, pipe lines and mechanical systems; and the harnessing of energy to perform useful tasks. Mechanical engineering technologists are employed by every kind of industry to seek new knowledge through creative design and development, and to build and control the modern devices and systems needed by society. Sequential elective courses to enhance a candidate's job opportunities can be selected in the areas of design, emissions, experimental and thermal power.

## Admission Requirements: see page 142.

Students having an associate degree or equivalent college-level course work in one of the following or related technical areas may be admitted to the program:

| Aerospace Technology | Fluid Power |
| :--- | :--- |
| Automotive Technology | Mechanical Design |
| Climate Control | Mechanical Technology |
| Drafting | Powerplant |

Required Background: Any student deficient in any course listed under Lower Division Technical Transfer will be required to remove the deficiency before completing fifteen credits in basic science/mathematics and technical core courses.

PROGRAM REQUIREMENTS: The program in mechanical engineering technology leading to the Bachelor of Science in Engineering Technology degree requires 129 credits as outlined in the following curriculum.

## BASIC SCIENCE AND MATHEMATICS

credits
CSC 206 - (CL) Introduction to FORTRAN .....
MAI 180 - Elementary Functions ..... 4
MAT 343 - (E T 343) Applied Calculus I ..... 4
MAT 345 - (E T 345) Applied Calculus II .....  .4
PHY 213 - (PS) General Physics. .....  4
PHY 214 - General Physics .....  4
CHM 102 -(PS) General Chemistry I .....  .4
Life Sciences (LS) elective. .....  3
Total: 30
MCT TECHNICAL CORE
E T 214 - Computer Graphics. .....  2
E T 303 - Statics .....  3
ET 305 - Dynamics. ..... 3
E T 385 - Reliability and Engineering Statistics .....  2
E T 387 - Engineering Economic Analysis .....  3
EET 301 - Electrical Instrumentation .....  .2
MIT 351 - Manufacturing Analysis .....  3
MCT 310 - Mechanics of Materials .....  4
MCT 315 - Applied Thermodynamics. .....
MCT 341 - Applied Kinematics .....  3
E T 499 - Senior Project. .....  .3
Total: 32
MCT TECHNICAL SPECIALTY ELECTIVES
(W.S.U. resident credit) ..... 6
LOWER DIVISION TECHNICAL TRANSFER
E T 114 - Engineering Graphics I ..... 2
E T 220 - Engineering Materials. .....  2
EET 200 - introduction to Electrical Principles .....  3
Other. ..... 23
Total: 30
GENERAL EDUCATION
UGE 100 - (GE) The University and its Libraries .....  1
ENG 102 - (BC) Introductory College Writing ..... 4
ENG 301 or ENG 305
-(IC) Intermediate Writing ..... 3

- (IC) Technical Communication I: Report Writing .....
SPE 101 - (OC) Oral Communication: Basic Speech .....
Historical Studies (HS) elective ..... 3
American Society and Institutions (AI) elective. .....  3
Social Sciences (SS) elective. .....  3
Foreign Culture ( FC ) elective .....
Visual and Performing Arts (VP) elective .....  3
Philosophy and Letters (PL) elective .....  3
Total: 28
Total minimum semester credits for the MCT program ..... 129


## ACADEMIC PROCEDURES

For complete information regarding acádemic rules and regulations of the University, students should consult the General Information section, pages 5-35. The following additions and amendments pertain to the Division of Engineering Technology.

## Dean's List of Honor Students

A student who achieves a semester honor point average of 3.5 or more, based on a program of at least twelve credits, is notified by the Dean of citation for distinquished scholarship and his/her name is included on the Dean's List of Honor Students.

## Substandard Performance

The grade ' D ' is considered by the Division of Engineering Technology to represent substandard performance. The implications of this are particularly significant in the science, mathematics and technology sequences.

If a grade ' $D$ ' is received in any course which is prerequisite to another course in the student's program, or in a course in his/her area of specialization, or in a required course in mathematics, physics, or chemistry, the student may be required, by his/her adviser, to repeat that course.

A student not required to repeat a course in which a ' $D$ ' grade has been received may elect to audit such a course to better his/her knowledge. However, he/she then may not later enroll in the course for credit or obtain credit for the course by Special Examination.

A course in which a grade below ' $C$ ' has been earned may not be subsequently passed by Special Examination.

When repeating a course, failure for the third time to pass it with a grade satisfactory to the Division constitutes grounds for denying a student further registration in the Division of Engineering Technology.

## Probation Policy

A student is considered to be on probation whenever his/her cumulative honor point average (h.p.a.) falls below 2.0. A student may also be placed on probation whenever his/her academic performance is deemed unsatisfactory. When placed on probation, the student is required to meet with the Director or the Academic Standards Committee of the Division of Engineering Technology, before being allowed to register for further classes. The Academic Standards Committee formulates the regulations for probationary students, and hears requests for exceptions.

A student on probation is expected to remove his/her honor point deficiency promptly. (Honor point deficiency is obtained by subtracting the total number of honor points from twice the total number of credits in the honor point base. It is the number of honor points by which the student fails to achieve a 2.0 honor point average.) If, at the end of the first semester on probation, the student's cumulative honor point average has not increased to at least 2.0 , he/she will be excluded from the Division of Engineering Technology for at least one calendar year. Course work taken at any institution during the period of exclusion may not be considered for transfer toward an engineering technology degree.

For part-time students, a semester will be considered to consist of twelve consecutive credits. If a student's cumulative h.p.a. reaches at
least 2.0 . by the end of the first semester after being placed on probation, he/she will be returned to regular status. Multiple occurrence of probation will result in the student's exclusion from the Division of Engineering Techology. While on probation, a student may not represent the Division in student activities.

A student may be refused the privilege of registering in the Division if, at any time, his/her honor point deficiency exceeds sixteen points. A student may also be refused the privilege of registering in the Division for irresponsible attendance and performance in class, regardless of any probationary status.

A student who has been refused registration may request that the Director or Academic Standards Committee reconsider his/her status. Such request should only be made when evidence of extenuating circumstances can be provided.

## Changes of Election and Withdrawal

University policy regarding changes of program and withdrawal from courses may be found on page 30 . The following additions and amendments apply to the Division of Engineering Technology:

Through the last day of the fourth week of fifteen-week classes, any student may withdraw from any course by notifying the Registration Office using a Drop/Add form. If a student wishes to withdraw from class after the fourth week and through the twelfth week, he/she must seek written approval of the instructor and the Division Director. Division of Engineering Technology policy precludes withdrawal from classes after the end of the twelfth week of classes except in cases of extreme emergency. Students not granted official withdrawal are expected to complete all course requirements. Failure to satisfactorily complete requirements will result in a grade of ' $E$.'

## COURSES OF INSTRUCTION ${ }^{1}$ <br> Engineering Technology (E T)

## 114. Engineering Graphics I. (M E 114). (Lct: 1; Lab: 3). Cr. 2

 Material fee as indicated in Schedule of Classes. Theory and application of projection drawing; multiview drawing and sketching; pictorial drawing and sketching; sectional views; basic techniques of dimensioning; charts and graphs.214. Computer Graphics. (Lct: 1; Lab: 2). Cr. 2

Prereq: E T 114, CSC 206. Material fee as indicated in Schedule of Classes. Solution of drafting problems and development of graphic presentations using computer-assisted drafting techniques. Use of programming techniques for direct solution of drafting/graphic problems and available software routines. Introduction to the use of computer plotters, CRTs, digitizers.
220. Engineering Materials. (Let: 2). Cr. 2

Application and characteristics, both physical and chemical, of metallic and nonmetallic materials, polymers, and composites used in industry. The primary process involved in producing these materials.
303. Statics. (Lct: 3). Cr. 3

Prereq: MAT 180 and PHY 213. The analytical and graphic techniques for determining the forces acting upon and within a body or structural component under static load. Centroids and center of gravity. Moments of inertia.
(F,W)
305. Dynamics. (Let: 3). Cr. 3

Prereq: E T 303 and MAT 343. Kinematics; kinetics of particles; kinetics of translation and rotation of a rigid body; relative motion; use of equations of plane motion. Aplication of impulse and momentum principles; work and efficiency.
( $\mathrm{F}, \mathrm{W}$ )
343. (MAT 343) Applied Calculus I. (Lct: 4). Cr. 4

Prereq: MAT 180. No degree credit in College of Liberal Arts. Limits, derivatives, applications of derivatives, definite integrals and their applications, and trigonometric functions.
(F,W)
345. (MAT 345) Applied Calculus II. (Let: 4). Cr. 4

Prereq: E T 343. No degree credit in College of Liberal Arts. A continuation of E T 343, including logarithmic and exponential functions, first and second order ordinary differential equations, vectors, polar coordinates, Laplace transforms, Taylor series, and Fourier series.
(F,W)
346. Applied Engineering Analysis. Cr. 3

Prereq: E T 344. Application of constant coefficient linear differential equations, including nonhomogeneous equations, and Laplace transforms to the analysis of dynamic systems. Fourier series analysis of periodic waveforms.
(F,W)
385. Reliability and Engineering Statistics. (Let: 2). Cr. 2

Prereq: MAT 180. Material fee as indicated in Schedule of Classes. Probability, hypergeometric, binomial, Poisson, and normal probability distribution; confidence intervals; inferences concerning means; linear regression; introduction to statistical quality control and reliability; use of computers.
(F,W)

## 387. Engineering Economic Analysis. (Let: 3). Cr. 3

Prereq: MAT 180. Material fee as indicated in Schedule of Classes. Techniques to economically evaluate major technical projects; rate of return and present worth; interest formulae; federal taxes, risk, inflation, non-economic constraints; use of computer.
490. Guided Study. (Ind: 1). Cr. 1-6(Max. 6)

Prereq: consent of instructor. Supervised study and instruction in field selected by student.
499. Senior Project. (Lab: 3; Dsc: 2). Cr. 3

Prereq: passing of English Proficiency Examination and senior standing. Student designs, builds, and tests product; philosophy of design. Project proposal to be submitted by second week, final outcome to be comp leted by thirteenth week; progress reports, and oral presentation required.

## Electrical/Electronic Engineering Technology (EET)

200. Introduction to Electrical Principles. (Let: 2; Dsc: 1). Cr. 3 Prereq: MAT 180; prereq. or coreq: PHY 214. For non-electrical majors. Kirchhoff's laws, D.C. and A.C. circuit analysis, impedance, phasors, power and power factor correction, mutual coupling. Power transformers, D.C. and A.C. generators and motors, motor controls.
(Y)
201. Principles of Digital Design. (Let: 2; Lab: 2). Cr. 3 Applied Boolean algebra and number systems. Logic families, K-mapping; combinational logic, multiplexers and demultiplexers, readouts and displays, flip flops.
202. Introduction to Network Analysis. (Let: 3). Cr. 3

Prereq. or coreq: MAT 342, PHY 214. Kirchhoff's laws, mesh and
nodal analysis, network reduction, voltage and current division, superposition. Thevenin's, Norton's, and Millman's theorems, dependent sources, electric power transmission and efficiency. (F,W)
272. Microprocessor Fundamentals. (Let: 2; Lab: 2). Cr. 3

Prereq: CSC 206. No credit after EET 372. Material fee as indicated in Schedule of Classes. Use of microprocessors as interface devices, including software, interfaces, memory, registers, and microcomputer system architecture. Computer programming design projects.
301. Electrical Instrumentation. (Let: 1; Lab: 3). Cr. 2

Prereq: EET 200 and PHY 214. Material fee as indicated in Schedule of Classes. Theory and use of electrical instruments, power supplies, bridges, potentiometers, oscilloscopes, electronic instruments and transducers.
(F,W)
310. Digital Design. (Let: 3). Cr. 3

Prereq: EET 210. Material fee as indicated in Schedule of Classes. Continuation of combinational logic, multiplexers and demultiplexers, flip flops, counters, shift registers, arithmetic circuits, memory systems, introduction to sequential logic systems, analog to digital and digital to analog converters. Hardware design project.
315. Network Analysis. (Lct: 3; Lab: 2). Cr. 4

Prereq: EET 215, PHY 214; prereq. or coreq: E T 345. Voltage-current relationships for inductors and capacitors, independent and dependent sinusoidal sources, phasors, impedance, power, reactive power, power factor, power-factor correction, complex power, frequency response and resonance, three-phase systems, two-port networks, hybrid parameters, magnetically-coupled circuits.
(F,W)
318. Analog Electronics I. Cr. 3

Prereq. or coreq: EET 315, CHM 102. Characteristics and applications of diodes, bipolar and field effect transistors, solid state devices. Design of power supply circuits for transistors, bipassing; high and low frequency equivalent circuits, tuned amplifiers. Component tolerances temperature considerations. Multi-stage amplifiers, input and output impedance.
372. Microprocessor Programming. (Let: 1; Lab: 2). Cr. 2 Prereq: EET 272. No credit after EET 370. Material fee as indicated in Schedule of Classes. Continuation of EET 272: hardware and software aspects of microprocessor systems; assembly language programming and hardware skills in interfacing and debugging; current applications programs.
380. Programmable Controllers. (Let: 2; Lab: 2). Cr. 3

Prereq: EET 270 or background in robotics. Material fee as indicated in Schedule of Classes. Ladder diagrams, relays, programming and interfacing the Modicom, Allen-Bradley controllers for robotics. Intercommunications systems between networks of controllers and machines and/or processes.
415. Advanced Network Analysis. (Let: 2). Cr. 2

Prereq: EET 315. Student computer account required. Material fee as indicated in Schedule of Classes. Transient response of electric circuits to periodics and nonperiodic forcing functions, impulses, waveform and spectral analysis, complex frequency, Bode plots, frequency response, computer solutions.
(F,W)
418. Analog Electronics II. (Let: 2; Lab: 2). Cr. 3

Prereq or coreq: EET 318. Material fee as indicated in Schedule of Classes. Coupled multistage RF amplifiers and stability considerations, feedback and operational amplifiers, DC translators, differential amplifiers in discrete and IC format. Oscillators, modulators, and demodulators. Design of Class B and C amplifiers, power handling, efficiency, and distortion.
(F,W)
420. Control Systems. (Let: 3; Lab: 2). Cr. 4

Prereq: E T 303, EET 200 or EET 315, E T 345. Material fee as
indicated in Schedule of Classes. Feedback control systems with topics in time response, stability criteria, system representation, frequency response, compensation. Simulation of electrical and mechanical systems.
(F,W)
430. Electromagnetic Fundamentals and Design. (Lct: 3). Cr. 3 Prereq. or coreq: EET 315. Forces in static electric and magnetic fields. Gauss and Coulomb laws, charge systems, potential energy. Electromagnetic induction, interference and shielding. Design of resistors, capacitors, inductors, transformers, solenoids, relays, tractive magnets. Earth conductivity and method of images as related to transmission lines and short antennas.
440. Transmission and Propagation of Energy and Signals. (Lct: 3; Lab: 2). Cr. 4
Prereq: MAT 345; prereq. or coreq: EET 415. Free space wave propagation. Transmission line parameters, transmission equations, terminations, discontinuities, reflections, and loading. Smith chart. Waveguides. Antennas. Metallic reflectors and horns. Power, telegraphy, telephony, video, digital data, and high frequency transmission.
450. Energy and Electrical Machines. (Lct: 3; Lab: 2). Cr. 4 Prereq: EET 315. Energy fundamentals. Physical and operating characteristics of D.C. and A.C. generators and motors, transformers. Electric power network. Transmission line stability. Power factor correction. Load sharing by transformers and generators. Per unit notation. Environmental impact of electric power generation.
460. Power System Performance. (Lct: 3). Cr. 3

Prereq: EET 415. Electric power plants, three-phase systems, generation, transmission and distribution of electric power, power system apparatus, efficiency and economics of power system operation, per-unit notation, power network analysis and reduction, load-flow studies.
472. Microprocessor Interfacing. (Lct: 2; Lab: 2). Cr. 3 Prereq: EET 372. Material fee as indicated in Schedule of Classes. A continuation of EET 372 with emphasis on interfacing. Introduction to 16 -bit microprocessors. Laboratory and computer programming design projects.
490. Guided Study. (Ind: 1). Cr. 1-6(Max. 6)

Prereq: consent of instructor. Supervised study and instruction in field selected by student.

## Manufacturing/Industrial Engineering Technology (MIT)

## 322. Methods Analysis and Time Study. (Let: 3). Cr. 3

Development of the fundamental concepts and approaches of time and motion study; application of the principles of motion economy.
332. Production and Inventory Management. (Let: 3). Cr. 3

Prereq: E T 385. Material fee as indicated in Schedule of Classes. Basic production scheduling and inventory management. Production planning, project management, inventory functions, and inventory costs.
335. Applied Human Factors. (Let: 3). Cr. 3

Prereq: PSY 101. Introduction to the physiological and psychological capabilities of man; sensory information processing and motor abilities of man as these factors affect job design.
351. Manufacturing Analysis. (Lct: 3). Cr. 3

No credit for MIT students. Material fee as indicated in Schedule of Classes. Comprehensive study of manufacturing processes including casting, forming, machining, welding and fabrication of common materials.
360. Process Engineering. (Lct: 3). Cr. 3

Prereq: CHM 102, E T 220, and machining lab experience. Material fee as indicated in Schedule of Classes. Processing functions. Methods of manufacturing analysis. Manufacturing sequence, mechanization. Selection of tooling and equipment. Planning the process of manufacture.
370. Numerical Control. (Let: 2; Lab: 2). Cr. 3

Prereq: MIT 351 or equiv. Material fee as indicated in Schedule of Classes. Fundamental concept of numerical control as it relates to the machine, the control, the part program. Positioning systems; contouring systems; NC machine design; servo-mechanisms; axis and motion nomenclature; set-up procedures; tape coding and formatting; coordinate coding; feedrate and spindle speed coding; ancillary control system features.
372. Manual Numerical Control Programming. (Lct: 2; Lab: 2). Cr. 3
Prereq: MIT 370 or equiv. Material fee as indicated in Schedule of Classes. Theory and practice in manual part programming for point-to-point and continuous path numerically controlled manufacturing equipment. Includes 2-, 3-, and 4-axis programming.
380. Quality Control 1. (Let: 4). Cr. 4

Prereq: MAT 340. Introduction to total quality systems design and to basic analytical techniques for quality control.
401. Product Design and Liability. (Lct: 1; Lab: 2). Cr. 2 Design philosophy. Analysis and design of elements to perform specified functions. Limitations imposed by manufacturing processes, cost, material properties, and liability factors.
(F,W)
470. Computer-Aided Design and Manu facturing.
(Let: 2; Lab: 2). Cr. 3
Prereq: CSC 206, MIT 351, E T 214. Student computer account required. Material fee as indicated in Schedule of Classes. Fundamentals of computer-aided manufacturing using computer software. Two- and three-dimensional applications programming, numerical control and programming.
490. Guided Study. (Ind: 1). Cr. 1-6(Max. 6)

Prereq: consent of instructor. Supervised study and instruction in the field selected by the student.

## Mechanical Engineering Technology (MCT)

## 310. Mechanics of Materials. (Let: 3; Lab: 3). Cr. 4

Prereq: E T 303. The elastic behavior of load bearing materials. Tension, compression, shear, combined stress, bending, tension and columns. Failure analysis.
( $\mathrm{F}, \mathrm{W}$ )
315. Applied Thermodynamics. (Let: 3; Lab: 2). Cr. 4

Prereq: E T 343, PHY 213, CHM 102. First and second laws of thermodynamics; power and refrigeration cycles; gas and vapor mixtures, nozzle and blade passage flow and combustion. Introduction to compressible flow. Direct energy conversion.
318. Fluid Mechanics. (Lct: 3; Lab: 2). Cr. 4

Prereq: E T 305. Properties of fluids, fundamentals of fluid flow, dimensional analysis and similitude, and flow measurement techniques. Analysis of hydrostatic equipment, hydrokinetic equipment and systems. Introduction to network analysis and calculation. (Y)
341. Applied Kinematics. (Let: 2; Lab: 2). Cr. 3

Prereq: E T 305. Material fee as indicated in Schedule of Classes. Velocity and acceleration determination of moving parts in machine elements and mechanisms using graphical and analytical techniques. Cam, gear and gear train design and analysis.
421. Heat Transfer. (Let: 3; Lab: 2). Cr. 4

Prereq: MAT 345 and PHY 213. Basic modes of heat transfer and their applications. Steady state conduction in one and two dimensions and transient conduction. Numerical and graphical methods. Heat exchanges. Condensation and boiling heat transfer. Introduction to mass transfer.
423. Heating, Ventilation, and Air Conditioning. (Let: 3). Cr. 3 Prereq: MCT 315. Material fee as indicated in Schedule of Classes. Psychrometry: air and humidity calculations; heat transfer and transmission coefficients; heating and cooling loads; physiological considerations; air distribution systems; building energy use optimization and ASHRAE standard.
440. Design of Machine Elements. (Let: 2; Lab: 2). Cr. 3

Prereq: E T 305, MCT 310 and MCT 341. Fundamental concepts in the design of the separate elements which compose the machine; application of properties and mechanics of materials modified by practical considerations.
441. Dynamics of Machinery. (Let: 3). Cr. 3

Prereq: E T 305, MCT 341. Static forces in machines; equations of motion; inertia forces and torques; dynamically equivalent systems; flywheels; balancing of rotating and reciprocating machinery; gyroscopic effects; critical speeds.
490. Guided Study. (Ind: 1). Cr. 1-6(Max. 6)

Prereq: consent of instructor. Supervised study and instruction in the field selected by the student.
(I)


## School of Fine and Performing Arts

DEAN: KATHRYN A. MARTIN

## Foreword

The School of Fine and Performing Arts conducts instruction, research performances and presentations in the arts and in the field of communications. It serves the creative and academic interests of a wide range of disciplines and a diverse population of students. Courses and degree programs are offered in studio arts, design and merchandising, and art history; music performance, theory, and music education; dance performance and dance education; technical theatre and theatre performance; and in speech communication and speech education, radio-tv-film, and journalism.

Traditional courses of study are augmented by a variety of performance and presentation resources considered integral to many of the creative programs. Included in these are the Hilberry Repertory Theatre, the Wayne State University Dance Company, the Symphonic Band and University Orchestra, the Intercollegiate Debate Team, plus community arts gallery exhibitions which often feature work created by students and studio faculty. These are only a few of the campus resources that are especially important for majors in the School of Fine and Performing Arts. A more comprehensive listing can be found under each of the specific departments.

The proximity of the Wayne campus to institutions of the Detroit Cultural Center (i.e., the Detroit Institute of Arts, the Center for Creative Studies, Orchestra Hall, etc.) provides further unique and enriching benefits for students; professional staff members of these institutions often serve as adjunct faculty in School of Fine and Performing Arts programs. Nearby, too, are major print and electronic communications resources that similarly provide both adjunct faculty and professional assistance to yet other programs in the college.

The undergraduate program of the School is strengthened by the presence of strong graduate programs. Since the professors teaching undergraduate courses are also involved in graduate instruction, the undergraduate student has opportunity to associate and work with more advanced students, which enriches the experience of the undergraduate. 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.

Degree Programs

## Bachelor of Arts-with majors in

 art . design and merchandising art history musicBachelor of Fine Arts-with majors in
art theatre

## Bachelor of Music—with majors in

church music music industry
composition
jazz studies and
contemporary media music education theory

Bachelor of Science-with majors in dance design and merchandising

* Master of Arts—with majors in

| art | music |
| :--- | :--- |
| art history | theatre |
| design and |  |
| $\quad$ 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
* Doctor of Philosophy—with majors in
speech communication theatre


# BACHELOR'S DEGREE REQUIREMENTS <br> Credits 

A candidate for a Bachelor of Arts, Bachelor of Fine Arts, Bachelor of Music, or Bachelor of Science degree must complete at least 120 credits. Certain curricula may require additional credits. (See 'Restrictions on Credit', below.)

## GENERAL EDUCATION REQUIREMENTS

University-wide general education requirements and School-wide group requirements are designed to enhance students' basic skills and the diversity of their intellectual background. These requirements assure minimal competence in those skills needed to succeed in college and professional life and provide a selective introduction to the increasingly broad range of academic disciplines represented at the University. They serve to emphasize the fundamental means and essential knowledge required for continuing self-education and intellectual growth.

Beginning with the Fall semester of 1987, all first-semester freshmen entering the School of Fine and Performing Arts and all students who transfer twelve or fewer credits into the School are required to satisfy both the University General Education Requirements and the School of Fine and Performing Arts Group Requirements.

All students in the School of Fine and Performing Arts to whom these requirements apply must successfully complete the following:

## - Competency Requirements

These requirements for the School are the same as those specified in the University General Education Program, a complete description of which may be found on pages 20-27. Competencies are required in the areas of Written Communication, Mathematics, Oral Communication, Computer Literacy, and Critical Thinking.

## - Group Requirements

Group Requirements of the School consist of the group requirements of the University General Education Program, a complete description of which may be found on page 22 , modified by the additions and limitations listed below.

## NATURAL SCIENCE

Physical Science as specified in the University General Education Program (see page 23). Approved courses include: AST 201; CHM 100, 102, 105, 107, 131; GEL 101; PHY 101, 102, 104, 213, 217, and 310; GST 232.

Life Science as specified in the University General Education Program (see page 23). Approved courses include: ANT 211; BIO 101, 103, 105, 161; NFS 203; PSY 101, 102; GST 202.

HISTORICAL STUDIES as specified in the University General Education Program (see page 23). Approved courses include: ANT 320; HIS 110, 120, 130, 140, 160, 161, 165, 195, 287, 304, 335, 350; HUM 310; N E 368, 369; P S 353.

## SOCIAL SCIENCE

American Society and Institutions as specified in the University General Education Program, see page 23. Approved courses include: HIS 103, 105; P S 101, 103; GSS 151.

Social Science as specified in the University General Education Program, see page 23. Approved courses include: ANT 210; ECO $100,101,102,180$; GEG 110, 313, 320; P S 100, 224; SOC 200, 202, 204, 330, 410; U S 200; GSS 271.

FOREIGN CULTURE as specified in the University General Education Program (see page 23). Approved courses include: ANT 315, 352, 354, 355; CBS 241, 242; N E 200; P S 271; FRE 271; GER 271, 272; RUS 351; NUR 480; GIS 341, 343; or completion of any foreign language sequence through 201 or 211 .

Foreign Language Requirement: All students pursuing the Bachelor of Arts degree in the School of Fine and Performing Arts must successfully complete a three-course sequence (with a minimum of four credits in each of the three courses) in a single foreign language. Those continuing the study of a foreign language begun in high school or at another college will be placed at an appropriate level by means of placement examinations administered by the various language departments of the University. The School Foreign Language Requirement will be considered satisfied by those students whose test scores place them beyond the intermediate (third course) level. Approved course sequences include those courses numbered 101, 102, and 201 in the following subject areas: ARB, ARM, FRE, GER, GRK, HEB, ITA, LAT, POL, RUS, SPA, SWA, and UKR; as well as GRK 111,112 , and 212 .

Bilingual Students: The Foreign Language Requirement will be considered satisfied for students who were born in and completed their secondary education in a country whose language is not English. However, no credit (through course work or by examination) will be granted for elementary- or intermediate-level courses in that language. Bilingual students who satisfy the Foreign Language Requirement in this manner will NOT simultaneously fulfill the University General Education Requirement in Foreign Culture.

## HUMANITIES

Visual and Performing Arts as specified in the University General Education Program; see page 24. Approved courses include: A H 100, 101, 111, 112; DNC 231; FLM 201, 202; HUM 101, 102, 103, 303; MUH 132, 133, 137, 138; THR 101, 103; GUH 273.

Philosophy and Letters as specified in the University General Education Program; see page 24. Approved courses include: CLA 101, 210, 220; ENG 216, 217, 219, 220, 250, 272, 299, 311, 312, 314; FRE 270 (or GER 270; ITA 270; RUS 270; or SPA 270); HUM 210, 211, 220, 222, 302; PHI 101, 102, 103, 104, 210, 211, 232, 350, 355, 370; P S 351, 352; RUS 365, 465; SOC 216, 219.

THE UNIVERSITY AND ITS LIBRARIES: election of UGE 100, The University and its Libraries, is a requirement of the University General Education Program (see page 24).

UNIVERSITY REQUIREMENT IN AMERICAN GOVERNMENT for students enrolled prior to Fall Term 1987: See General University Information, pages 23-24.

## Proficiency in English and Mathematics

All undergraduate students who register for the first time at Wayne State University in Fall Semester 1983 or thereafter will be required to demonstrate proficiency in English and mathematics by the time they have earned sixty semester credits towards a bachelor's degree. For full particulars of these requirements, as well as the requirements
applicable to registrants at the University prior to Fall 1983, see the General Information section of this Bulletin, pages 21-22, 24.

## Curriculum Requirements

A curriculum usually designates the student's general area of interest or eventual professional choice. By choosing the General Curriculum, however, the student indicates only the intention to take a degree in one of the departments of the School or that a final goal has not been decided upon. Students planning to pursue a Bachelor of Arts degree program should select the general curriculum. Since educational interests may change during the course of the student's college career, a curriculum may be changed at any time by consulting an adviser.

Some curricula outline a specific program of study. Others are governed only by the group requirements and future major requirements and recommendations. Group, curricular, and major requirements may be modified from time to time during the student's course of study, and students should periodically consult with the appropriate adviser. Descriptions of the various curricula may be found in this Bulletin, under each Department in the School of Fine and Performing Arts.

Course requirements vary with each curriculum. Exceptions are permitted to the School rules governing the minimum and maximum credits in the major subject and the maximum hours allowed in restricted courses if such exceptions are stated or implied in the curriculum requirements outlined herein. Curriculum requirements are included in the departmental sections beginning on page 158 and are followed by a description of the courses pertinent to the major.

## Major Requirements

A major is a program of concentrated study in a department or area within the School. The specific course requirements or areas for majors are listed in this bulletin under each of the departments of the School. A major in art and art history, dance, music, speech communication and journalism, or theatre requires intensive study. Students who plan to elect one of these majors should consult with a departmental adviser during the freshman year. Students may declare majors at any time, but generally select areas of concentration during their sophomore year and formally declare majors by the beginning of their junior year. Students must complete all courses in the major with an overall honor point average of 2.0 (' C ').

Declaration of Major: To declare a major, the student should consult a departmental adviser well in advance of a formal declaration, since the acceptance of the declaration of major is subject to the advice of the department concerned. An up-to-date cumulative record of the student's work should be obtained by the student from the Records Office and delivered to the department for its files. At the time of formal declaration, the student must obtain the signature of the department chairperson or the designated representative on the major declaration form and file the form in the School of Fine and Performing Arts Dean's Office, 5104 Gullen Mall. All courses elected or changed by the student after the declaration of a major should be approved by the department adviser.

The major must include at least twenty credits in one subject, exclusive of the introductory courses and inclusive of some advanced work. No more than forty-six credits in the major subject (including introductory courses) may be counted toward a degree.

Within the above limits, each major program has specific requirements, and these requirements may be modified from time to time; therefore, it is the student's responsibility to obtain the current requirements from the major department.

For majors which require intensive study in a particular subject, more than forty-six credits are allowed.

The major completed is part of the degree designation on the diploma.
Double Major: If a student wishes to declare a double major, the approval of the chairperson or delegated representatives of each of the departments of intended major must be obtained. In order for a student to graduate with a double major, the major requirements in both areas of concentration must be fulfilled. The student must complete all courses in both majors with an over-all honor point average of 2.0 ('C'). Both majors are designated on the diploma.

## Minor Fields

The School of Fine and Performing Arts offers the option of a minor. Students may choose to fulfill a minor but are not required to do so. In general, minors require $18-21$ credits. Courses that do not apply toward the major cannot apply toward a minor. Students are strongly encouraged to consult with departmental advisers for course selections.

The notation of the minor will appear on the transcript but not on the diploma. Declaration of the minor will be made by the student only when filing for graduation.

## Special Concentrations Available within Departments

Art: Advertising Design, Ceramics, Design, Drawing, Fibers, Industrial Design, Interior Architecture, Metalsmithing, Painting, Photography, Print-making, Sculpture (Bachelor of Fine Arts Degree)
Design and Merchandising-Interior Design, Apparel Design, Fashion Merchandising (Bachelor of Arts or Bachelor of Science Degree)

Dance: Choreography and Performance, Dance Education (Bachelor of Science Degree)

Music: Church Music, Composition, Jazz Studies and Contemporary Media, Music Education, Music Industry Management, Music Therapy, Performance, Theory (Bachelor of Music Degree)

Speech Communication and Journalism: Speech communication, journalism, public relations, radio-television-film (Bachelor of Arts Degree)

## Theatre: Performance, Production (Bachelor of Fine Arts Degree)

## Teacher Preparation Curricula

Health examinations: At the beginning of the freshman year, all students entering the University who are considering teacher education work should take the health examination. Students may wish to avail themselves of the services of the Speech and Hearing Clinic if they feel that they have defects which might impair their effectiveness as teachers. A health re-check is required at the time of admission to the School of Education.

Students preparing to teach in dance or music will register in the School of Fine and Performing Arts for their freshman and sophomore years and enroll in the combined curriculum with the School of Education at the beginning of their junior year. During the first two years, they will see the departmental advisers for general counseling. Application for entrance to the School of Education should be submitted after the completion of fifty-three credits in course work.

## - Combined Curriculum for Academic Studies

This curriculum leads to a bachelor's degree and a Michigan Secondary Provisional Certificate.

The Combined Curriculum for Secondary Teaching is offered in cooperation with the School of Education and prepares the student for a teaching major in grades $\mathrm{K}-12$ and a teaching minor in grades 9-12. In this curriculum the student takes the first two years of work in the School of Fine and Performing Arts. Courses in the third and fourth years are taken concurrently in Education and Fine and Performing Arts. Students interested in this program should consult a departmental academic adviser who will supply a curriculum outline.

Degree in the School of Fine and Performing Arts: The student will remain registered in the School of Fine and Performing Arts and officially elects a departmental major at the beginning of the junior year. The student then applies to the School of Education for official admission to the combined curriculum for secondary teaching and must be approved by the School of Education as a candidate for teacher certification. During junior and senior years the program requests will be signed by both a School of Fine and Performing Arts major adviser and by the appropriate adviser in the School of Education.

## Second Degree

A student who has received a Fine and Performing Arts degree from Wayne State University or any other accredited institution may obtain a second bachelor's degree in another academic area by registering in the undergraduate School. A graduate of Wayne State University who has earned a degree from the School of Fine and Performing Arts may be ranked as an undergraduate by declaring a new major and indicating a desire to earn a second undergraduate degree in the departmentally-approved areas. Other Wayne State University graduates must transfer to the School of Fine and Performing Arts. A student from another institution must be admitted to the School by the University Admissions Office.

In order to be granted a second degree, the student must complete a minimum of thirty credits beyond the first degree in the School and satisfy all School and major requirements. Generally, no second degree will be granted in the academic area in which the first degree was earned.

## Concurrent Degrees

A student who has satisfied all the requirements for two different major programs leading to degrees offered by the School and who has accumulated 150 or more degree credits may apply for both degrees simultaneously. However, students intending to earn concurrent degrees are required to obtain permission from the Office of the Dean prior to the accumulation of 120 degree credits. Another, and more usual, procedure for students satisfying the requirements of two different major programs is to declare a double major and graduate with one degree, in which case as little as 120 degree credits may be required. (See Double Major, page 154.)

## Restrictions on Credit

## The School imposes the following restrictions on credit:

Maximum Credits in One Subject: A student may not count as credit toward a degree more than forty-six credits in courses in any one subject except in special curricula in which additional courses are
specified in the curriculum outline.
Over-age Credits: A student attempting to complete a major after a protracted interruption in education, or on a part-time basis over an extended period of time, may find that some of the early course work is out of date. In such cases, a department may require refresher work or demonstration of preparation for advanced courses in the department.

Restrictions on Transfer Credit - Two-Year Schools: No more than sixty-four semester credits may be transferred from two-year colleges.
-Weekend School (School of Lifelong Learning): No more than sixteen credits, which may include six credits of Independent Study, may be transferred from Weekend School.
-Labor School: A maximum of ten hours of elective credit may be granted students who have been certified as having completed the Labor School curriculum, have a letter of recommendation from the Director, and have earned sixty credits with an honor point average of at least 2.0.

Restricted Courses: Degree credit is not given for elections in restricted courses which exceed the approved limit specified below.

Advanced Courses: At least fifteen credits in courses numbered 300 or above must be earned.

Professional Courses: A maximum of sixteen credits may be elected as cognate credit by any student from courses offered for degree credit by the several professional schools and colleges within the University. These credits may be elected with the approval of the departmental adviser.

Repeated Subjects: It is understood that degree credit will not be granted for course work for which credit has already been granted. Since similar courses may have different names at different times and at different colleges, students are advised to make sure they do not offer repeated work as credit towards a degree.

Extra Credits: Extra credits are any credits taken in excess of the normal load of eighteen credits. A student with a 3.0 honor point average may take more than eighteen credits only when the proposed program carries the written approval of the adviser and the Dean.

## Honor Point Average

All students are required to maintain an over-all honor point average of C (2.0) for all degree work elected. See 'Honor Point Average' in the General Information section of this Bulletin, page 34.

## Residence

To qualify for a baccalaureate degree in the School of Fine and Performing Arts a minimum of thirty credits must be earned in the School. The last thirty credits applicable to the degree, not including credit by special examination, must be completed in an undergraduate college or school of Wayne State University. Credit by special examination may not be counted as residence credit but such credit, if earned during a semester in which the student is registered, will not be considered an interruption of residence.

In special circumstances, senior residence may be interrupted with the approval of the student's major department and the School of Fine and Performing Arts Dean's Office; however, when the candidate has less than the minimum thirty credits of residence in the School of Fine and Performing Arts, no such exceptions are permitted.

## 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 5. The following additions and amendments apply to the School of Fine and Performing Arts.

## Recommended High School Preparation

The School of Fine and Performing Arts strongly supports the University's recommendations concerning academic preparation. See page 13.

## Attendance

Regularity in attendance and performance is necessary for success in college work. Each instructor at the beginning of the course will announce attendance requirements.

## Normal Program Load

The requirements for graduation are based upon an average program of fifteen credits per semester for eight semesters. The normal load shall not exceed eighteen credits.

Because two hours of outside preparation are normally expected for each class hour in each course, a fifteen credit program calls for approximately forty-five hours of class attendance and study per week. Students who undertake such a program should expect to give it their full time and energy. A few hours of employment a week may be safely added to this program by a capable student.

## Retention of Records

Term papers and examinations shall either be returned to the student or retained by the instructor for a minimum of six months. 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.

## Study Abroad

Various opportunities for study abroad are available through the University. Students should contact their major department and the University Advising Center for further information regarding these programs.

## Honors

Students with a 3.0 honor point average are eligible to enrich their education through election of honors courses. Information on these courses may be obtained in the Schedule of Classes under Honors Program. For a full listing of available honors courses, see pages 269 and 270 of the bulletin.

Students enrolled in the School of Fine and Performing Arts who are interested in pursuing a University Honors degree should refer to page 28 of the bulletin. Further information regarding the Honors Program is available in the Honors Program Office located in room 258 Mackenzje Hall.

## Graduation With Distinction

Effective Fall Term 1986, Wayne State University will bestow upon students completing the baccalaureate degree three separate designations for scholastic excellence reflected in the cumulative honor point average: Cum Laude, Magna Cum Laude, and Summa Cum Laude. Graduation with Distinction will be indicated on the student's diploma and on the transcript.

Graduation with Distinction will recognize at each commencement the top twenty percent of students in the School of Fine and Performing Arts who have earned the highest honor point average in the School with the following approximate distribution:

Top 5\%.
Summa Cum Laude
Next $5 \%$ Magna Cum Laude

Next $10 \%$ Cum Laude

The specific minimum honor point average making for these distinctions will be determined each year in the following manner (except that it shall not be less than 3.0 ):

Based on the honor point average distributions of the previous year's senior class, the honor point average cut-offs for the School will be established to provide for recognition of the top eighteen to twenty per cent of the graduating students.

The criteria for Graduation with Distinction include:

1. A minimum of sixty credits in residence at Wayne State University;
2. A minimum honor point average, as established above, on all work at Wayne State University completed by the end of the term of graduation. (For notation in the Commencement Program, the honor point average on all work completed prior to the term of graduation will be used.)

## Dean's List

The Dean's List of academically superior students is compiled each fall and winter term based on the following criteria: a 3.6 honor point average for students registered for full-time programs of twelve credits or more which contribute to the honor point base; and a 4.0 honor point average for students registered for between six and eleven credits. Students who receive marks of ' I ' or ' W ' or ' X ' and grades of ' N ' or ' $U$ ' are not eligible. (For explanation of these marks and grades, see page 33.)

## Academic Probation

Low Honor Point Average: If a student's work averages below 2.0 the student will be placed on academic probation. If a serious honor point deficiency is incurred, the student may be required to obtain permission from the University Advising Center before registering. Such permission will be granted only after an interview during which the student is able to give some assurance that the previous causes of failure will not be operative on the proposed program.

Lack of Progress: Students whose records reveal an excessive number of 'Withdrawal,' 'Incomplete' and ' X ' marks and who, as a result, make little or no progress towards earning a degree, will be placed on academic probation. Such students may be required to confer with an academic adviser in the University Advising Center and with a departmental adviser in order to register. Students on probation are encouraged to use support services of the University.

Restriction: While on academic probation, a student may not represent the School in student activities.

Removal of Probation: Academic probation will be removed at the end of any term in which the student achieves an over-all average of ' C ' or better for all degree work taken at the University.

## Exclusion

Low Honor Point Average: A student on academic probation who incurs a serious deficiency or fails to raise an honor point average within a reasonable length of time, may be excluded from the School. Such an exclusion will be reviewed by the Probation Committee of the University Advising Center and the Dean upon the request of the student.

Lack of Progress: After having conferred with the University Advising Center, non-progressing students who continue to fail to make progress towards a degree may be excluded from the School

Readmission: After one year of exclusion, the student may apply for readmission to the School. The decision to readmit the student will be based upon evidence presented by the student that circumstances have changed during the year and that the probability of success has increased.

Cheating and Plagiarism: The principle of honesty is recognized as fundarnental to a scholarly community. Students are expected to honor this principle and instructors are expected to take appropriate action when instances of academic dishonesty are discovered. An instructor, on discovering such an instance, may give a failing grade on the assignment or for the course. Serious acts of dishonesty may lead to suspension or exclusion.

The instructor has the responsibility of notifying the student of the alleged violation and the action being taken. Both the student and the instructor are entitled to academic due process in all such cases. Information on procedures is available in the School of Fine and Performing Arts Dean's Office.

## Academic Advising

Freshmen and sophomores are required to consult departmental advisers each time they register. A staff of academic advisers is available in the University Advising Center, second floor, Mackenzie Hall, to answer general academic questions. Students should confer with advisers on all questions concerning degree requirements, academic regulations, course elections, and programs of study. It is of primary importance that students talk with an adviser when they are having difficulties in their academic work.

## 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.

## Directory of the School

## Dean

Kathryn A. Martin ........................ 5104 Gullen Mall; 577-5342
Acting Assistant Dean
Richard J. Bilaitis ......................... 5104 Gullen Mall; 577-5747
Assistant Dean
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## Departmental Offices

## Art and Art History

James E. Nawara
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## Communication

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585 Manoogian Hall; 577-2943
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Peter J. Schoenbach ........ 105 Schaver Music Building; 577-1795

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Robert T. Hazzard
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## ART AND ART HISTORY

Office: 150 Community Arts Center, 450 Reuther Mall
Acting Chairperson: James E. Nawara
Academic Services Officers: Agnes Aoki, John Slick

## Professors

William A. Allen (Emeritus), Mary Jane Bigler (Emerita), Richard J. Bilaitis, Robert Broner (Emeritus), Olga Constantine, Phillip G. Fike, Peter J. Gilleran (Emeritus), Bernard M. Goldman, Joseph Gutmann, John G. Hegarty, David A. Mitchell (Emeritus), James Nawara, Louise J. Nobili (Emerita), Thomas C. Parish, William E. Pitney (Emeritus), Patricia A. Quinlan, G. Alden Smith (Emeritus), Horst Uhr, Robert J. Wilbert, William T. Woodward (Emeritus)

## Associate Professors

Phyllis A. Ashinger, Thomas P. Fitzgerald, Urban Jupena, John C. Mills, James M. Raymo, Melvin Rosas, Stanley L. Rosenthal, Jeanne Galloway Stiller, Joseph B. Zajac, Marilyn Zimmerman

## Assistant Professors

Carolyn J. Hooper, Brian Madigan, Robert J. Martin, Mary Jo McNamara

## 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

## Degree Programs

> Bachelor of Arts-with a major in Art, Art History, Design and Merchandising.

Bachelor of Fine Arts—with a major in Art and a concentration in one of the following: Advertising Design, Ceramics, Design, Design and Merchandising, Drawing, Fibers, Industrial Design, Interiors, Metal Arts, Painting, Photography, Printmaking, or Sculpture.

## Bachelor of Science-with a major in Design and Fashion Merchandising

* 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, Metal Arts, Painting, Photography, Printmaking, or Sculpture.
- Master of Arts-with a major in Art History.
* For information consult the Wayne State University Graduate School Butletin.


## *Master of Arts-with a major in Design and Merchandising

* Master of Fine Arts—with a major in Art and specialization in one of the following: Ceramics, Design, Drawing, Fibers, Metal Arts, Painting, Photography, Printmaking, or Sculpture.


## * Certificate in Museum Practice

The Department of Art and Art History reserves the right to retain, for its permanent collection, the work submitted by students for credit in any course, and to exhibit or reproduce such work in University publications.

## Bachelor of Arts <br> With a Major in Art

Admission Requirements for this program are satisfied by the general requirements for undergraduate admission to the University; see page 13.

DEGREE REQUIREMENTS: Candidates for the Bachelor of Arts in Art must complete 120 credits including satisfaction of the University General Education Requirements (see page 20), as well as the Group Requirements of the School (see page 153), and forty-eight credits in art courses, including the Core Requirements and Departmental Requirements cited below. Students pursuing a bachelor of arts degree must also fulfill the foreign language requirement (see page 153). All course work must be completed in accordance with the regulations of the Universty and the School governing undergraduate scholarship and degrees.

CORE REQUIREMENTS:

|  | credits |
| :---: | :---: |
| ADR 105 - Drawing 1 | ..... 3 |
| ADR 106 - Drawing II. | . 3 |
| ADE 120 - Design 1. | 3 |
| ADE 121 - Design II. | . 3 |
| A H 111 - (VP) Paleolithic Through Gothic Art Survey | -..... 3 |
| A H 112 - (VP) Renaissance Through Modern Art Surv | .... 3 |

## DEPARTMENTAL REQUIREMENTS

ADR 207 - Beginning Life Drawing ..... $\ldots$
APA 210 - Basic Painting. .....  3
ASL 215 -Introduction to Sculpture .....  3
ADE 220 - Design III: Three Dimensional (or craft course) .....  3
One three-credit course in printmaking (APR) or photography (APH). .....  3
Art History ( $A$ H) elective ( 200 level or above) .....  3
Art History (A H) elective ( 300 level or above) .....  3
PHI 370 - Philosophy of Art. .....  3
Bachelor of Arts
With a Major in Art History

Admission Requirements for this program are satisfied by the general requirements for undergraduate admission to the University; see page 13.

DEGREE REQUIREMENTS: Candidates must complete 120 credits, including satisfaction of the University General Education

Requirements (see page 20), as well as the Group Requirements of the School (see page 153) and the major requirements listed below. Students pursuing a bachelor of arts degree must also fulfill the foreign language requirement (see page 153). All course work must be completed in accordance with the regulations of the University and the School governing undergraduate scholarship and degrees; see pages 5-35 and 153-156, respectively.

Students may elect this major as part of an undergraduate curriculum in either the College of Liberal Arts or the School of Fine and Performing Arts. Those electing the major in the College of Liberal Arts must fulfill the general requirements of that College; see pages 199-202.

Major Requirements: Students must complete a minimum of thirty-three credits in art history, which includes six credits in the basic surveys (A H 111, 112), three credits from the non-western surveys and at least twenty-four credits in advanced courses, of which a minimum of fifteen credits must be at the 500 level or above. These courses should be selected to ensure exposure to the major periods and areas: ancient, medieval, renaissance-baroque, nineteenth and twentieth centuries, Oriental and ethnographic. It is recommended that students who intend to pursue graduate work in Art History elect A H 509. In addition to the Art History course work, majors must complete at least two years of college-level study in one foreign language (a minimum of four semester courses; German and French are preferred).

## Bachelor of Arts with a Major in Design and Merchandising

Curricula in this area provide a liberal education as well as the opportunity for a professional concentration in the fields of interior design, apparel design, and fashion merchandising.

Admission Requirements for this program are satisfied by the general requirements for undergraduate admission to the University; see page 13.

DEGREE REQUIREMENTS: Candidates for the Bachelor of Arts degree must complete 120 credits including satisfaction of the University General Education requirements (see page 20), as well as the Group Requirements of the School (see page 153) and all departmental and area requirements as indicated below. Students pursuing a bachelor of arts degree must also fulfill the foreign language requirement (see page 153). All course work must be completed in accordance with the regulations of the University and the School governing undergraduate scholarship and degrees; see pages 5-35 and 153-156, respectively.

## INTERIOR DESIGN OPTION:

This curriculum prepares students for professional interior design practice with interior design studios, governmental agencies, manufacturers of home furnishing and equipment, home planning firms, and other organizations concerned with the creative and functional aspects of the interior environment.

The following courses are required: ADR 105, 106; ADE 120, 121, 220; A H 111, 112; AIA 539; Philosophy (PHI) 370.

The following courses are recommended: AIA 435, 436, 535; Economics (ECO) 102; Management (MGT) 566; Marketing (MKT) 530; Sociology (SOC) 200, 550; Speech (SPB) 101.

Requirements vary for each area; students are responsible for meeting program requirements as outlined in curriculum guides available from the Department of Art and Art History office.

## APPAREL DESIGN OPTION:

Successful completion of this curriculum enables students interested in creative aspects of clothing to develop competencies needed for careers in apparel design and related fields. Possible careers include designing and patternmaking, home economics, and custom tailoring.

The following courses are required: ADR 105, 106; ADE 120, 121; A H 111, 112. In addition, students are encouraged to take supporting courses in art history, sociology, and anthropology. Requirements vary for each area; students are responsible for meeting program requirements as outlined in curriculum guides available in the Department of Art and Art History office.

## FASHIONMERCHANDISING OPTION:

This curriculum develops understanding and practical skills related to the buying and selling of fashion merchandise. Students gain insights into the various aspects of the apparel industries including marketing, sales, styling, publicity, advertising, visual presentation, fashion coordination, and merchandising. Possible careers include positions in management, buying, and fashion promotion. Requirements vary for each area; students are responsible for meeting program requirements as outlined in curriculum guides available in the Department of Art and Art History office.

## Bachelor of Science with a Major in Design and Merchandising

Curricula in this area provide a liberal education as well as the opportunity for a professional concentration in apparel design and fashion merchandising.

Admission Requirements for this program are satisfied by the general requirements for undergraduate admission to the University; see page 13.

DEGREE REQUIREMENTS: Candidates for the Bachelor of Science degree must complete 120 credits including satisfaction of the University General Education requirements (see page 20), as well as the Group Requirements of the School (see page 153) and all departmental and area requirements as indicated below. Students pursuing a bachelor of arts degree must also fulfill the foreign language requirement (see page 153). All course work must be completed in accordance with the regulations of the University and the School governing undergraduate scholarship and degrees; see pages 5-35 and 153-156, respectively.

Requirements may vary for each area, but each requires a minimum of twenty-four credits in Natural Science courses; this is not an exception to the University General Education Requirements. Students are responsible for meeting program requirements as outlined in curriculum guides available from the Department of Art and Art History office.

## APPAREL DESIGN OPTION:

Successful completion of this curriculum enables students interested in creative aspects of clothing to develop competencies needed for careers in apparel design and related fields. Possible careers include designing and patternmaking, home economics, and custom tailoring.

The following courses are required: ADR 105, 106; ADE 120, 121; A H 111, 112. In addition, students are encouraged to take supporting courses in art history, sociology, and anthropology. Requirements vary for each area; students are responsible íor meeting program requirements as outlined in curriculum guides available in the Department of Art and Art History office.

## FASHION MERCHANDISING OPTION:

This curriculum develops understanding and practical skills related to the buying and selling of fashion merchandise. Students gain insights into the various aspects of the apparel industries including marketing, sales, styling, publicity, advertising, visual presentation, fashion coordination, and merchandising. Possible careers include positions in management, buying, and fashion promotion. Requirements vary for each area; students are responsible for meeting program requirements as outlined in curriculum guides available in the Department of Art and Art History office.

## Bachelor of Fine Arts

Admission Requirements for the Bachelor of Fine Arts Degree are satisfied by the general requirements for undergraduate admission to the University; see page 13.

DEGREE REQUIREMENTS: Candidates for the Bachelor of Fine Arts degree must complete 120 credits including satisfaction of the University General Education Requirements (see page 20), as well ast the Group Requirements of the School (see page 153). Core and departmental requirements as cited above under Bachelor of Arts with a Major in Art must be met, as well as the major requirements below.

Major Requirements: Students must complete twenty-one to fifty-one credits (depending on areas of specialization) in art courses, eighteen of which must be at the advanced level (from courses numbered 300 or above). Specialization requirements for the B.F.A. degree may also be met by combining a minimum of twenty-four credits at an advanced level in two specializations. Curriculum outlines with suggested scheduling patterns for the following fields of concentration are available in the Department of Art and Art History office:
a. Advertising Design
g. Interior Architecture
b. Ceramics
h. Metal Arts
c. Design
i. Painting
d. Drawing
j. Photography
e. Fibers
k. Printmaking
f. Industrial Design

1. Sculpture

Required courses in each B.F.A. concentration are given below; exceptions may be made with consent of adviser.

Transfer Students must complete a minimum of twenty-seven resident credits in art courses for either the B.A. or B.F.A. degree with a studio major; and a minimum of twelve resident credits with an art history major.

## ADVERTISING DESIGN

ADE 221 - Applied Design Concepts.............................................................. 3
AGD 225 - Advertising Design I.................................................................... 3
AGD 325 - Intermediate Advertising Design .................................................... 3
AGD 425 - Graphic Design Specialties........................................................... 3
AGD 525 - Advanced Advertising Design............................................................ 12

## CERAMICS

* ACR 255 - Ceramics and Pottery Design I......................................................... 3

ACR 355 - Beginning Ceramics .................................................................... 3
ACR 455 - Intermediate Ceramics................................................................. 3
ACR 555 - Advanced Ceramics................................................................................


## DESIGN

Credits
ADE 220 - Design III: Three-Dimensiona .....  3
ADE 320 - Applied Design Projects .....  .3
ADE 520 - Advanced Design. .....  3
ADE 521 - Experimental Art Processes. .....  3
ADE 522 - Art Processes: Computer Art. .....  .3
ADE 520 or ADE 521
-Advanced Design ..... $\ldots$
-Experimental Art Processes .....  3
ADE 583 - Directed Projects: Design ..... 9-15
DRAWING
ADR 207 - Beginning Life Drawing. .....  3
ADR 307 - Intermediate Life Drawing .....  3
ADR 508 - Still Life and Landscape Drawing .....  3
ADR 506 - Advanced Drawing .....  3
Drawing Electives .....  12
FIBERS
AFI 265 or AFI 266

- Beginning Weaving .....  3
- Introduction to Fibers. .....  3
AFI 365 or AFI 366
- Intermediate Weaving .....  3
- Intermediate Fibers .....
500-level AFI courses (Junior year). .....  9
500 -level AFI courses (Senior year). .....  .6
INDUSTRIAL DESIGN
ADE 221 - Applied Design Concepts .....  3
AID 330 - Introduction to Industrial Design .....  .6
AID 331 - Basic Presentation .....  6
AID 530 - Industrial Design ..... 12
AID 531 - Advanced Presentation ..... 12
AID 630 - Transportation Design .....  6
AID 632 - History of Industrial Design I. .....  3
AID 633 - History of Industrial Design II .....  3
INTERIOR ARCHITECTURE
AID 331 - Basic Presentation. .....  3
AIA 235 - Architectural Drafting and Perspective Drawing .....  3
AIA 435 - Interior Architecture: Design Introduction. .....  3
AIA 436 - Interior Construction: Materials and Systems .....  3
AIA 535 - Interior Architecture: Adaptive Use. .....  3
AlA 536 - Survey of Construction Technology .....  3
AIA 539 - Interior Lighting Design. .....  3
AIA 537 - Environment as an Art Form . .....  3
AIA 538 - InteriorArchitecture: Construction Drawings .....  3
AIA 635 - Interior Architecture: Senior Projects. ..... 6
METAL ARTS
AME 260 - Metal Arts and Jewelry Design .....  3
AME 360 - Intermediate Metal Arts and Jewelry Design .....  3
AME 560 - Advanced Metal Arts and Jewelry Design (Junior year). .....  .6
AME 560 - Advanced Metal Arts and Jeweiry Design (Senior year) ..... 12
PAINTING
APA 211 - Beginning Painting: Water Media ..... 3
APA 212 - Beginning Painting: Oil .....  3
300-level Painting Elective ..... 3
APA 313 or APA 314
- Figure Painting: Water Media. ..... 3
- Figure Painting: Oil and Other Media. ..... 3
APA 510 - Painting Seminar .....  3
500-level Painting Electives. ..... 9

[^28]
## PHOTOGRAPHY



## Minors in Art and Art History

ART: A minor in art will be granted upon completion of twenty-four credits, including: one Drawing course (ADR 105), one Design course (ADE 120), one Art History course (A H 111 or 112), and five studio electives (fifteen credits).

ART HISTORY: A minor in art history will be granted upon completion of twenty-one credits in art history courses, including A H 111 and 112 , and fifteen credits at the 200 level or above.

## 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)

## 225. Advertising Design I. Cr. 3

Prereq: ADR 106, ADE 121. Material fee as indicated in Schedule of Classes. Introduction to lettering, type and commerical graphic processes. Development of layout concepts, drawing, design, photostat and proof press usage.
( $\mathrm{F}, \mathrm{W}$ )

## 325. Intermediate Advertising Design. (AGD 525) (AGD 725). Cr. 3

Prereq: AGD 225. Material fee as indicated in Schedule of Classes. Layout development and introduction to camera-ready design procedures. Essential concepts of commercial graphic design techniques.
(F,W)

[^29]425. Graphic Design Specialties. Cr. 3(Max. 6)

Prereq: ADE 325. Material fee as indicated in Schedule of Classes. Course in three equal units taught by professionals in the field, to provide breadth and range in graphic design; content and instructor change each semester.
(Y)
525. (AGD 325) Advanced Advertising Design. Cr. 3-6(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. 3-6(Undergrad. max. 15; grad. max. 30)
Prereq: written consent of instructor. Individual problems. (F,W)

## Ceramics (ACR)

255. Ceramics and Pottery Design I. (ACR 256) (ACR 355) (ACR 455) (ACR 555) (ACR 755). Cr. 3

Material fee as indicated in Schedule of Classes. Introduction to basic clay-forming techniques including slab, coil, wheel throwing, and glazing. Primarily for non-art majors.
(T)
256. (ACR 255) Ceramics and Pottery Design II. Cr. 3

Prereq: ACR 255. Material fee as indicated in Schedule of Classes. Continuation of ACR 255. Further development of basic clay techniques.
355. (ACR 255) Beginning Ceramics. (ACR 256). Cr. 3 Prereq: ADR 106 and ADE 121. Open only to art majors. Material fee as indicated in Schedule of Classes. Experiences in basic techniques, processes and ideas fundamental to the ceramic medium. (T)
455. (ACR 255) Intermediate Ceramics. (ACR 256) (ACR 355). Cr. 3
Prereq: ACR 355. Material fee as indicated in Schedule of Classes. Advanced building techniques; glaze and clay body calculation, mold-making and aesthetic evaluation.
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.
588. Directed Projects: Ceramics. Cr. 3-6(Undergrad. max. 15; grad. max. 30)
Prereq: written consent of instructor. Individual problems. (F,W)

## Design (ADE)

120. Design I. Cr. 3

Foundation course for all visual communication. Two- and three-dimensional experimentation in various techniques with achromatic media.

## 121. Design II. Cr. 3

Prereq: ADE 120. Continuation of ADE 120 with concentration on color theories and phenomena. Two- and three-dimensional concepts of structure with an emphasis on color.(T)
220. Design III: Three Dimensional. Cr. 3

Prereq: ADE 121. Material fee as indicated in Schedule of Classes. Elementary and advanced spatial constructions using a variety of tools, materials and machines. Relationships to other art forms and fields are stressed through lectures and discussions.
(F,W)

## 221. Applied Design Concepts. Cr. 3

Prereq: ADE 121, ADR 106. Material fee as indicated in Schedule of Classes. Concepts and projects pertinent to industrial design, graphic design, and interior architecture; course is in three equal units in applied design specialty areas, each taught by a specialist in the discipline.
320. Applied Design Projects. Cr. 3

Prereq: ADE 121. Language, techniques and concepts of environmental design.
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.
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.
522. Art Processes: Computer Art. Cr. 3-6(Max. 9)

Prereq: ADE 121. Election of more than three credits per semester requires written consent of instructor. Survey of use of computer in art history; artist's work preparation and the practical generation of computer-assisted imagery. Painting systems; specific media. Experimentation with computer tools as aspect of creative effort, for beginning students. No prior computer experience necessary.
583. Directed Projects: Design. Cr. 3-6(Undergrad. max. 15; grad. max. 30)
Prereq: written consent of instructor. Individual problems. (F,W)

## Drawing (ADR)

105. Drawing I. (ADR 106). Cr. 3

Introductory training in basic drawing skills: inanimate subject matter, perspective and composition, wet and dry media. (F,W)

## 106. (ADR 105) Drawing II. Cr. 3

Prereq: ADR 105. Experimental problems to encourage individual responses to subject matter. More complex drawing media and limited color. Studies of head emphasizing structure.
(F,W)
207. Beginning Life Drawing. (ADR 307) (ADR 507) (ADR 707). Cr. 3
Prereq: ADR 106. Material fee as indicated in Schedule of Classes. Graphic exploration of essential aspects of the human figure including structure, gesture, form and accuracy. Limited media employed.
(F,W)
307. (ADR 207) Intermediate Life Drawing. Cr. 3

Prereq: ADR 207. Material fee as indicated in Schedule of Classes. Continued systematic study of the human figure stressing more complex problems. Introduction of a broader range of media. (F,W)
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. 3-6(Max. 24)
Prereq: ADR 307. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in Schedule of Classes. Continued study of graphic translation of the human figure. Individual directions and variety of problems encouraged. More complex subject matter, scale and composition.
(F,W)
508. Still Life and Landscape Drawing. Cr. 3-6(Max. 12)

Prereq: ADR 106. Election of more than 3 credits per semester requires consent of instructor. Exploration of still life and landscape subject matter through observation and imagination using various media. Studio work and field trips.
509. Anatomy. Cr. 3

Prereq: ADR 207. Material fee as indicated in Schedule of Classes. Drawing the human anatomy through studies of visual structural form; the skeletal and muscular systems and superficial characteristics. (Y)
580. Directed Projects: Drawing. Cr. 3-6(Undergrad. max. 15; grad. max. 30)
Prereq: written consent of instructor. Individual problems. (F,W)

## Fashion Design and Merchandising (AFA)

## 241. Textiles I. Cr. 3

Material fee as indicated in Schedule of Classes. Introduction to fibers, yarns, fabric construction, design and finishes and how they relate to selection, use and care of textile products.
(F,W)

## 242. Clothing Selection and Construction. Cr. 3

Application of color and design principles in construction of structured and unstructured garments.
( $\mathrm{F}, \mathrm{W}$ )

## 340. Clothing and Culture. Cr. 3

Functions and meanings of dress in diverse cultures and contemporary society with an interdisciplinary approach.
(F,W)

## 341. Textiles II. Cr. 3

Prereq: AFA 241. Material fee as indicated in Schedule of Classes. Recent technological developments; introduction to textile testing.
346. Introduction to Merchandising. Cr. 4

Psychological, economic considerations. Terminology and structure of apparel trades and career opportunities. Field trips. (F,W)
347. Merchandise Information. Cr. 4

Quality and value in merchandising. Manufacturing processes, government regulations and selling points in hard and soft lines. (W)
355. The Consumer and the Market. Cr. 3

No credit after FAC 555. Economics of consumption as related to consumer purchases of goods and services. The consumer viewpoint regarding advertising, market practices, food, transportation, consumer protection, legislation and fraud.

## 443. Fashion Ilustration. Cr. 2

Prereq: ADR 105. Basic fashion rendering techniques using a variety of media.
455. Consumers and Their Money. Cr. 3

Economic principles and problems related to money and credit management. Insurance, saving and investing, personal taxes, retirement, and estate planning.
490. Directed Study. Cr. 2-4

Prereq: written consent of instructor.
491. Workshop. Cr. 2-4(Max. 8)

Application of theoretical principles to selected area of family and consumer resources. Topics and prerequisites to be announced in Schedule of Classes.
542. Fashion Design: Tailoring. Cr. 3

Prereq: AFA 242. Tailoring techniques applied to coats and suits.
543. History of Costume. Cr. 3

Prereq: one art history course. Material fee as indicated in Schedule of Classes. Survey of historic costumes from prehistoric to present.
544. Fashion Design: Flat Pattern. Cr. 3

Prereq: AFA 242. Material fee as indicated in Schedule of Classes. Original designs from a basic sloper.
545. Fashion Design: Draping. $\mathbf{C r} .3$

Prereq: AFA 242. Creation of an original garment by draping on a form.
546. Merchandising II. Cr. 3

Prereq: AFA 346. Current trends in merchandising. Lectures by specialists.
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. Relationshiop 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.
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.
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.
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.
685. Seminar. Cr. 2

Topics to be announced in Schedule of Classes.
(F,W)
693. Study Tour. Cr. 3

Prereq: written consent of instructor. Group tour to major market sources; observation and analysis of products and marketing procedures. Topics to be announced in Schedule of Classes. (B:S)

## Fibers (AFI)

## 265. Beginning Weaving. (AFI 266) (AFI 365) (AFI 366) (AFI 565) (AFI 566). Cr. 3

Prereq: ADE 121 and ADR 106. Material fee as indicated in Schedule of Classes. Weaving techniques on a frame loom. Design concepts through application of tapestry, flossa, sumac, inlay and wrapping process.
(T)
266. (AFI 265) Introduction to Fibers. Cr. 3(Max. 6)

Material fee as indicated in Schedule of Classes. Emphasis on color, design and composition. Natural and chemical dyeing, block printing, resist methods, soft sculpture, basketry.
365. (AFI 265) Intermediate Weaving. (AFI 266). Cr. 3-6(Max. 12)

Prereq: AFI 265. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in Schedule of Classes. Designs done on four- and eight-harness looms. Pattern drafting, layer weaving, ikat, and rug techniques offered on a rotating basis.
366. (AFI 265) Intermediate Fibers. (AFI 266) (AFI 365). Cr. 3-6(Max. 12)
Prereq: AFI 266. Material fee as indicated in Schedule of Classes. Concentration in one of the following areas: soft sculpture, fabric printing, dyeing, resist methods. Topics to be announced in Schedule of Classes .
367. Historical Study of Textiles and Techniques. Cr. 3

Lecture and demonstration.
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.
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 works determined by student; research and written statement.
587. Directed Projects: Fibers. Cr. 3-6(Undergrad. max. 15; grad.
max. 30)

Prereq: written consent of instructor. Individual problems. (F,W)

## Industrial Design (AID)

## 330. Introduction to Industrial Design. (AID 530). Cr. 3 (Max. 9)

Prereq: ADE 220, ADE 221, AID 331. Material fee as indicated in Schedule of Classes. Introduction to fundamental design methodology through problems involving two-dimensional presentation and three-dimensional form studies. (F,W)
331. Basic Presentation. (AID 531). Cr. 3(Max. 9)

Prereq: AIA 235. Material fee as indicated in Schedule of Classes. Fundamentals of free-hand perspective drawing. Achromatic sketches with emphasis on cast shadows and value studies. Introduction of color sketches during the second term.
(F,W)
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.
( $\mathrm{F}, \mathrm{W}$ )
531. (AID 331) Advanced Presentation. Cr. 3-6(Max. 18)

Prereq: AID 331. Election of more than three credits per semester requires written consent of instructor. 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. 3-6(Max. 18)

Prereq: AID 330. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in Schedule of Classes. Materials fee announced in Schedule of Classes . Form and proportion investigations of various transportation systems. Repetition of course allows a more comprehensive development of a particular project.
(F,W)

## 632. History of Industrial Design I. Cr. 3

Modern design in architecture, furniture, decorative and graphic arts, transportation forms, in terms of style. 1850-1910: Victorian substyles, Art Nouveau, Arts and Crafts movement, Beaux Arts, Vienna Seccession.
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)

## Interior Architecture (AIA)

235. Architectural Drafting and Perspective Drawing. Cr. 3

Prereq: ADR 106 and former ART 231 or equiv. Material fee as indicated in Schedule of Classes. Introduction to the basic studio tools and techniques of the architectural profession. Basic architectural drafting and dimensioning, linework and lettering. Mechanical construction of one- and two-point perspective chart and other sketch methods.
(F,W)
435. Interior Architecture: Design Introduction. (AIA 635). Cr. 3(Max. 12)
Prereq: ADE 221, AIA 235. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in Schedule of Classes. Step-by-step process for design of complex interior human environments. All aspects from programming through furniture selection. Lectures, studio, jury presentation.
(F,W)
436. Interior Construction: Materials and Systems. Cr. 3

Manufactured architectural components: partitions, ceilings, cabinets, furniture systems, accessories and equipment; specification writing.
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: measured drawings, plans, building sections.
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.
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.

## 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.
539. Interior Lighting Design. Cr. 3

Prereq: AIA 235. Light sources, fixtures, selection and application in architectural interiors; energy efficiency, comfort, basic calculations.
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)

## Interior Design and Housing (AIH)

260. Introduction to Interior Design and Housing. Cr. 3

Functional, aesthetic, financial and psychological aspects of the home and its furnishings, problems in evaluating floor plans and selecting and arranging furnishings.
261. Interior Design Studio I. Cr. 4

Prereq: AIH 260. Material fee as indicated in Schedule of Classes. Presentation techniques; introduction to contemporary media and methods used in the preparation of presentation boards: layout, rendering, matting and lettering.
361. Interior Design Studio II. Cr. 4

Prereq: AFA 241, AIH 261, ADE 121. Open to CLL students with written consent of instructor. Material fee as indicated in Schedule of Classes. Fundamental knowledge of color lighting and space planning, understanding of their application to the solution of interior residential problems and the use of skills for professional presentation.
(W)
460. Introduction to Environmental Design. Cr. 3

Prereq: three courses in sociology and/or psychology. Functional basis of design, theories of proxemics and anthropometrics. Human factors, thermal conditions, color, and light as they affect human comfort and performance.
461. Interior Design Studio III. Cr. 4

Prereq: AIH 361, ART 220, ART 235 or equiv. Material fee as indicated in Schedule of Classes. Intermediate level exploration and
synthesis of lighting, color, human factors, space planning, selection of furnishings; application to the interior environment using skills for professional presentations.
490. Directed Study. Cr. 2-4

Prereq: written consent of instructor.
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.
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.
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.
( $\mathrm{F}, \mathrm{W}$ )

## Metals (AME)

## 260. Metal Arts and Jewelry Design. Cr. 3

Prereq: ADR 106 and ADE 121 for art majors. Material fee as indicated in Schedule of Classes. Fundamentals of metal forming processes: fabrication and repousse. Lectures on technical, historical and contemporary information, twentieth century conceptual ideas.
360. Intermediate Metal Arts and Jewelry Design. (AME 560) (AME 760). Cr. 3
Prereq: AME 260. Material fee as indicated in Schedule of Classes. Raising, stretching and forging and small form investment casting. Application of theory, principles and graphic techniques essential to creative design in metals.

## 560. (AME 360) Advanced Metal Arts and Jewelry Design. Cr. 3-6(Max. 24)

Prereq: AME 360. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in Schedule of Classes. Comprehensive project development on an individual basis. Workshops in specialty areas.
(F,W)
586. Directed Projects: Metal Arts. Cr. 3-6(Undergrad. max. 15; grad. max. 30)
Prereq: written consent of instructor. Individual problems. (F,W)

## Painting (APA)

## 210. Basic Painting. Cr. 3

Prereq: ADR 106 and ADE 121. Material fee as indicated in Schedule of Classes. Introduction to oil, water color, gouache, acrylic and encaustic media, tools and surface preparation. Form observation and translation; inquiry into pictorial concerns.
211. Beginning Painting: Water Media. (APA 311) (APA 511). Cr. 3
Prereq: APA 210. Material fee as indicated in Schedule of Classes. Exploration of aqueous media, transparent and opaque. Legacy, content and contemporary issues concerning water-based media. Simple problems of form translation using still life, nature, and/or abstraction.
212. Beginning Painting: Oil. (APA 312) (APA 512). Cr. 3

Prereq: APA 210. Material fee as indicated in Schedule of Classes. Exploration within media choices with emphasis on the structure of a painting and individual development. Still life, nature and/or abstraction.
311. (APA 211) Intermediate Painting: Water Media. Cr. 3

Prereq: APA 211. Material fee as indicated in Schedule of Classes. Continuation of APA 211 with emphasis on the investigation of pictorial space. Emotional and/or conceptual solutions to expression. Further work in aqueous media relative to individual needs.
312. (APA 212) Intermediate Painting: Oil and Other Media. Cr. 3
Prereq: APA 212. Material fee as indicated in Schedule of Classes. Continuation of APA 212 with emphasis on the structure of a painting and different attitudes of pictorial space. Emotional and/or conceptual solutions to paintings. Individual development encouraged.
313. Figure Painting: Water Media. (APA 513) (APA 713). Cr. 3 Prereq: APA 211. Material fee as indicated in Schedule of Classes. Spontaneous and sustained paintings from direct observation of the human figure. Inquiry into the effects of scale, space and emotional responses are encouraged.
314. Figure Paintling: Oil and Other Media. (APA 514) (APA 714). Cr. 3

Prereq: APA 212. Material fee as indicated in Schedule of Classes. Sustained studies in oil, acrylic or other media from direct observation of the human figure. Inquiry into the effects of scale. Pictorial space and emotional responses are encouraged.
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 änd private collections.
511. (APA 211) Advanced Painting: Water Media. (APA 311). Cr. 3-6(Max. 18)
Prereq: APA 311. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in Schedule of Classes. Continuation of APA 311.
512. (APA 212) Advanced Painting: Oil and Other Media. (APA 312). Cr. 3-6(Max. 18)

Prereq: APA 312. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in

Schedule of Classes. Continuation of APA 312.

## 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.
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.
581. Directed Projects: Painting. Cr. 3-6(Undergrad. max. 15; grad. max. 30)
Prereq: written consent of instructor. Individual problems. (F,W)

## Photography (APH)

240. Introductory Photography. Cr. 3

Lectures, demonstrations, projects involving basic camera techniques using color slides.
241. Beginning Photography. Cr. 3

Prereq: APH 240. Material fee as indicated in Schedule of Classes. Film processing, printing and presentation in black and white medium. Introduction to basic photographic vocabulary through problem-solving approach. Demonstrations and group techniques.
340. Evolution of Photography. Cr. 3

Survey of photography from invention to contemporary times. Significant trends and developments in the medium as revealed in the work of major photographers.
341. Intermediate Photography. Cr. 3

Prereq: APH 241. Material fee as indicated in Schedule of Classes. Further refinement of basic skills and concepts. More advanced techniques. Use of the camera's manipulative mechanisms. Emphasis on image and idea.
441. Advanced Photography. Cr. 3

Prereq: APH 341. Material fee as indicated in Schedule of Classes. Individual projects using advanced methods and techniques. In-depth photographic investigations exploring the possibilities of personal expression.
(T)
442. View Camera. (APH 542). Cr. 3

Open only to photography majors. Material fee as indicated in Schedule of Classes. Basic view camera techniques. Sheet film processing and printing. Studio lighting techniques.
443. Color Photography. (APH 543). Cr. 3

Prereq: APH 341. Open only to photography majors. Color film processing and printing. Basic color theory and use of filtration. Class projects and group techniques.
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.
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.
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.

## 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 .
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)

## Printmaking (APR)

251. Relief and Collograph Printmaking. (APR 351). Cr. 3 Prereq: ADR 106 and ADE 121. Material fee as indicated in Schedule of Classes. Traditional relief methods: woodcut, wood engraving, linocut and basic techniques of collage printmaking.
252. Papermaking. (APR 569). Cr. 3

Prereq: ADR 106 and ADE 121. Material fee as indicated in Schedule of Classes. Introduction to hand-made paper. Basic techniques of both sheet and free-formed paper.
348. Beginning Intaglio Printmaking. Cr. 3(Max. 6)

Prereq: ADR 106 and ADE 121. Material fee as indicated in Schedule of Classes. Basic metal plate techniques: etching, aquatint, engraving, drypoint, soft ground, lift ground.
349. Beginning Lithography. (APR 549) (APR 749).

## Cr. 3(Max. 6)

Prereq: ADR 106 and ADE 121. Material fee as indicated in Schedule of Classes. Fundamentals of stone and plate lithography. Black and white prints made.
350. Beginning Serigraphy. (APR 550) (APR 750). Cr. 3

Prereq: ADR 106 and ADE 121. Material fee as indicated in Schedule of Classes. Introduction to basic techniques of screen printing. (Y)
351. (APR 251) Advanced Relief/Collograph Printmaking. Cr. 3-6(Max. 15)
Prereq: APR 251. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in Schedule of Classes. Advanced problems in relief or collograph. Media and course content offered on alternating schedule by terms.
548. Advanced Intaglio Printmaking. (APR 748).

Cr. 3-6(Max. 21)
Prereq: APR 348. Election of more than three credits per semester
requires written consent of instructor. Material fee as indicated in Schedule of Classes. Advanced problems in intaglio. Multiplate and rollup color printing. Photo intaglio techniques, experimental media.
( $\mathrm{F}, \mathrm{W}$ )
549. (APR 349) Advanced Lithography. Cr. 3-6(Max. 21)

Prereq: APR 349. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in Schedule of Classes. Advanced problems in lithography. Black and white, multicolor, transfer methods.
(F,W)
550. (APR 350) Advanced Serigraphy. 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.
551. Experimental Printmaking. Cr. 3-6(Max. 21)

Prereq: APR 350 and 549. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in Schedule of Classes. Specialized problems involving experimental use of various print media and technologies; relief, collagraph, intaglio.
(I)
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.
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.
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.
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.
584. Directed Projects: Printmaking.

Cr. 3-6(Undergrad. max. 15; grad. max. 30)
Prereq: written consent of instructor. Individual problems.
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)

## Sculpture (ASL)

## 215. Introduction to Sculpture. (ASL 316) (ASL 516) (ASL 616)

 (ASL 716). Cr. 3Prereq: ADR 106, ADE 121. Material fee as indicated in Schedule of Classes. Sculptural forms using traditional and contemporary materials and techniques in problems involving figurative and non-figurative and environment space problems.
316. (ASL 215) Intermediate Sculpture: Non-Figurative. Cr. 3

Prereq: ASL 215. Material fee as indicated in Schedule of Classes. Emphasis on non-figurative forms employing wider range of techniques: welding, foundry and plastics.
317. Intermediate Sculpture: Figurative. (ASL 517) (ASL 617) (ASL 717). Cr. 3
Prereq: ASL 215. Material fee as indicated in Schedule of Classes. Problems in figurative sculpture using traditional and contemporary spatial and expressive concepts. Foundry, welding, plastics and mold-making.
516. (ASL 215) Advanced Sculpture: Non-Figurative. (ASL 316). Cr. 3-6(Max. 18)
Prereq: ASL 316. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in Schedule of Classes. Continuation of ASL 316. Emphasis on advanced and self-directed problems in non-figurative sculpture. (T)
517. (ASL 317) Advanced Sculpture: Figurative. Cr. 3-6(Max. 18) Prereq: ADR 309 and ASL 317. Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in Schedule of Classes. Emphasis on advanced and self-directed problems in figurative sculpture.
518. Sculpture: Advanced Technology. Cr. 3-6(Max. 18)

Prereq: ASL 516 or 517 . Election of more than three credits per semester requires written consent of instructor. Material fee as indicated in Schedule of Classes. One major project which explores the application of non-traditional materials and technologies: research, industrial liasons, equipment.
(I)

## 582. Directed Projects: Sculpture. Cr. 3-6(Undergrad. max. 15; grad. max. 30)

Prereq: written consent of instructor. Individual problems. (F,W)
616. (ASL 215) Non-Figurative Sculpture. (ASL 316) (ASL 516). Cr. 3-6(Max. 18)
Prereq: ASL 516. Open only to sculpture majors. Election of more than 3 credits per semester requires written consent of instructor. Material fee as indicated in Schedule of Classes. Continuation of ASL 516. Expansion of concepts and expressive form. Emphasis on photofolio of work and professional plans.
617. (ASL 317) Figurative Sculpture. (ASL 517).

## Cr. 3-6(Max. 18)

Prereq: ASL 517 and 518. Open only to sculpture majors. Election of more than 3 credits per semester requires written consent of instructor. Material fee as indicated in Schedule of Classes. Continuation of ASL 517. Emphasis on concepts and expressive form, portfolio of work and professional plans.
619. Selected Problems in Sculptural Concepts. Cr. 3-6(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)

## Special Classes (ACS)

## 100. Studio Art for Non-Majors. Cr. 3

Basic studio experiences in one of the art media. Area of concentration to be announced in Schedule of Classes .
500. Foreign Study in Studio Art. Cr. 3-6

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.

## Art History (A H)

100. (VP) Introduction to Art. Cr. 4

Forms and functions of art; uses of art; roles of the artist; iconography and symbols.
101. (VP) Great Art of the World. Cr. 3

Presentation and discussion of representative monuments and artists of the major periods and regions; artistic function and character of the works as a part of the continuum of civilizations.
111. (VP) Paleolithic through Gothic Art Survey. Cr. 3
112. (VP) Renaissance Through Modern Art Survey. Cr. 3-4 Offered for four credits to Honors students only.
203. The Sculptural Tradition. Cr. 3

A historical survey of sculptural form from paleolithic times to the present.
280. Arts of Africa. Cr. 3

Selected sub-Saharan African arts including body aesthetics, decorative arts, figurative wood sculpture, masking traditions, royal or kingdom arts, and domestic-sacred architecture.
282. Arts of Indian Americas. Cr. 3

Survey of arts and architecture of ancient Mexico and Peru and some North American Indian societies; archaeological record, craft technology, cultural significance and aesthetic concerns.
301. Art in the United States. Cr. 3

Works by major American artists, architects and artisans from colonial times to the present. Works are examined both as reflections of the aesthetic interests of their times and as cultural-historical documents.
340. Medieval Architecture. Cr. 3

Prereq: A H 111 or equiv. Principles of early medieval architecture: formulae of the buildings and the evolutionary development of the great gothic cathedrals.

## 370. Modern Art: Nineteenth and Twentieth Centuries. Cr. 3

Prereq: A H 112; or coreq: 112 with consent of instructor. Survey of the major periods and styles of nineteenth and twentieth century art; specific themes and concepts in modern art; relationships and contrasts between artists.
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.
510. Biblical Archaeology. Cr. 3

The Bible and archaeology in the light of recent research.
514. Art of the Ancient Near East. Cr. 3

Neolithic through Achaemenian art.
520. Classical World: Minos to Alexander. Cr. 3
Art and architecture from the Minoan to the classical period.
521. Hellenistic and Roman Art. Cr. 3

Discussion of the art and architecture of the Hellenistic and the Roman Empires.
530. Early Christian and Byzantine Art. Cr. 3 The evolution of Christian imagery.
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.
548. The Illuminated Book. Cr. 3

The pivotal role of the illustrated Christian manuscript from antiquity to the printed book.
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.
551. High Renaissance and Mannerism in Italy. Cr. 3

The art of Leonardo, Raphael, Michelangelo, Titian, and their contemporaries.

## 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.

## 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.
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.

## 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.
570. Nineteenth Century European Painting. Cr. 3

Major styles, developments and masters.
571. Trends in Nineteenth Century Art. Cr. 3

Topics to be announced in Schedule of Classes.
572. Twentieth Century Art. Cr. 3

Specific topics to be announced in the Schedule of Classes.

## 574. Surrealism. Cr. 3

Literary and artistic history of these movements; their development in Germany, France and America.
575. Contemporary American Art. Cr. 3

Major developments in American painting and sculpture from the Armory Show to the 1970s.
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.
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.
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.
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.


## COMMUNICATION

## Office: 585 Manoogian Hall

Chairman: Edward J. Pappas
Academic Services Officer: Victoria Dallas

## Professors

Eugene H. Bahn (Emeritus), George V. Bohman (Emeritus), Bernard I. Brock, Benjamin J. Burns, Leonard Leone (Distinguished Emeritus), Edward J. Pappas, Raymond S. Ross (Emeritus), Geneva Smitherman, George W. Ziegelmueller

## Associate Professors

William A. Boyce, J. Daniel Logan (Emeritus), James S. Measell, Larry Miller, Lawrence Silverman (Emeritus), John W. Spalding, Jack W. Warfield (Emeritus)

## Assistant Professors

Matthew W. Seeger, J.P. Williams

## Lecturers

John Buckstaff, Darryl Fox, Anita Lienert, Ruth Seymour, Richard A. Wright

## Cooperating Faculty, Department of Audiology, School of Medicine

Doris V. Allen, James A. Kaltenback, William F. Rintelmann, Dale O. Robinson

## Degree Programs

## Bachelor of Arts - with a major in speech communication

Bachelor of Arts - with a major in journalism
Bachelor of Arts - with a major in public relations
Bachelor of Arts — with a major in radio-television-film

* Master of Arts - with a major in speech
communication and emphasis in public relations and organizational communication; radio-television-film; oral interpretation; speech communication education; or general speech.
* Doctor of Philosophy - with a major in speech communication and emphases in communication and rhetorical processes; radio-television-film; oral interpretation; or general speech.

The primary aim of this department is to assist students in developing the ability to communicate effectively. The variety of degree programs provides broad liberal arts education as well as specific career training. Undergraduate and graduate majors may prepare for careers in public and private organizations; industrial relations; government; sales and personnel; community and public relations; radio, television, film and journalism; and teaching.

[^30]The department sponsors a large number of student activities which are available to all University students. These include intercollegiate debate, contest reading and speaking, group reading programs, and the University Readers' Bureau. Wayne State University has undergraduate chapters of The Society of Professional Journalists, Sigma Delta Chi, Women in Communication, Forensic Union, Delta Sigma Rho-Tau Kappa Alpha, and the Public Relations Student Society of America.

SPB 101-Oral Communication: Basic Speech-is designed for those who wish to improve their general communicative ability. Courses in voice and articulation, public speaking, discussion, debate, and oral interpretation offer additional opportunities to study and practice general communication skills.

## Bachelor of Arts Degrees

Admission Requirements are satisfied by the general requirements for undergraduate admission to the University; see page 13.

DEGREE REQUIREMENTS: Candidates for the Bachelor's degree must complete 120 credits of course work including satisfaction of the School Group Requirements (see page 153) and the University General Education Requirements (see page 20), as well as the major requirements of one of the programs listed below. All course work must be completed in accordance with the regulations of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 153-156, respectively.

It is expected that a major will complete at least thirty but not more than forty-six credits in the department. Any course work elected over the forty-six credit maximum must have prior approval of both adviser and chairperson if the additional credits are to count toward the degree ( 120 credits). At least twelve credits are required in residence within the major. A proper distribution of courses approved by the student's adviser is important. It is desirable that students intending to major in speech communication begin their work in the Department in their freshman year. Courses in the major or specialization should be selected in consultation with an adviser. Although students do not officially declare a major prior to the junior year, advising is available to freshmen and sophomores.

## - With a Major in Speech Communication

The following specializations lead to the degree of Bachelor of Arts with a Major in Speech Communication.

1. General Speech: Advisers in this specialization will develop programs for students in various areas related to speech communication, such as pre-law, pre-theology, and other special interests. Undergraduate majors in this specialization of general speech must elect: SPB 101, SPC 210 or SPC 211, SPO 204 and SPO 250.

A minimum of thirty credits is required for the major in addition to the twelve required credits above. Additional credits should be elected in consultation with an adviser to reflect a broad general knowledge in all areas of the discipline. Direct inquiries to 585 Manoogian Hall (577-2943).
2. Speech Communication Education: Undergraduate majors in this specialization must elect: SPB 101, SPC 210, SPC 211, SPC 321, SPO 204, SPO 250, SPR 201 and SPR 540.

A minimum of thirty credits, in addition to the fifteen credits outlined above, is required for the major. It is recommended that course work be elected from among the following in consultation with an adviser in the area: SPC 216, 219, 220, 504, 520; SPD 530; SPE 606, SPE 607; THR 101 or THR 104.

A strong minor ( $18-24$ credits) in the Department of English is recommended. Consult an adviser in the College of Education regarding requirements for the Michigan Teaching Certificate. Direct inquiries to 585 Manoogian Hall (577-2943).
3. Oral Interpretation (SPO): Undergraduate majors in this specialization must elect: SPB 101, SPC 210 or SPC 211, SPO 204, SPO 250 plus one additional course in another area of the department.

A minimum of thirty credits is required for this major. In addition to the $15-16$ credits outlined above, courses should be elected from the following in consultation with an adviser in this area: SPO 505, SPO 555, SPO 556, SPO 558, SPO 559 and SPO 656.

Majors combining oral interpretation and theatre should consult early with an adviser to assure that a balanced program in both disciplines is achieved. Theatre courses may be elected, in consultation with an adviser, in performance (acting and directing), production (scene and costume design), and/or dramatic literature. Other oral interpretation combinations are possible in communication theory, rhetoric, and mass communication (broadcasting or film studies). Direct inquiries to 585 Manoogian Hall (577-2943).

## - With a Major in Journalism

Major Requirements: Journalism majors plan careers in news editorial, advertising, broadcast, or media relations. An advanced English writing course is required, such as ENG 301. Journalism majors must have at least a ' $C$ ' average in their sequence courses to graduate. A journalism adviser must be consulted for verification of requirements which go beyond the college's requirements, such as additional course work in history, the social sciences and literature.

The core courses for journalism majors are: SPJ 200, SPJ 210, SPJ 321, SPJ 400, SPJ 500, and SPJ 502. Students must take an additional six electives from an approved list focusing on their specific area of career interest.

Journalism Institute for Minorities: The Journalism Institute for Minorities is a four-year departmental program designed to recruit and train talented minority students for careers in mass communications. The Institute pools the resources of the University, the business community and Detroit area media professionals to provide scholarships and internships for its students. For additional information contact: Director, Journalism Institute for Minorities, Wayne State University, Journalism Program, 163 Manoogian, Detroit, MI 48202; telephone: (313) 577-2627.

Journalism Undergraduate Scholarship and Loan Fund: Journalism majors are eligible for scholarships, including the W. Sprague Holden Memorial Scholarship and the George M. and Mable Slocum Foundation Scholarship. An interest-free fund, established in memory of Arthur Dorazio (1965), former executive news editor of the Detroit Free Press and associate professor of journalism at Wayne State University, is available. Applicants should apply at the Journalism Office, 163 Manoogian.

## - With a Major in Public Relations

Students electing this major typically seek employment in one of the many career opportunities in public relations: business and industry; non-profit organizations; trade associations; government service; education; or account executive positions in an agency. Some students later pursue graduate-level study in fields such as organizational communication.

Major Requirements: In addition to the Public Relations core courses - SPC 317, Fundamentals of Public Relations and SPC 516, Communication and Public Relations - the following courses are required: SP'J 210, 321, 521; SPC 210, 216, 321, 325; SPR 201, 221

Recommended electives include an internship (SPJ 400 or SPC 619), as well as courses in Journalism (SPJ 200, 228, and 446) and Communication and Rhetorical Processes (SPC 220, 520, 521). An adviser should be consulted early in the student's program. Direct inquiries to 531 Manoogian Hall (577-2946).

## - Major in Radio and Television

Undergraduate majors in this program must elect SPR 201, 211, 221, 301, 531, 540, 541 and 551. Students must elect an additional two courses in the department in consultation with an adviser in the Radio-Television-Film area, plus an additional twleve credits in electives above the College Group Requirements in social science and/or humanities. For a related major in Film, see the Film Studies entry in this Bulletin.

## Honors Program

The departmental Honors Program is available to students in the areas of radio-television-film, journalism, and communication and rhetorical processes. This program offers capable students the opportunity to pursue independent study and to work closely with department faculty members. All honors students must write a senior honors essay under the direction of a faculty adviser. Completion of the honors major results in an honors degree designation on the diploma.

Requirements: In order to enter the departmental program students must have achieved junior standing and an overall honor point average of at least 3.5. Students must meet all regular major requirements as well as the following courses: the honors section of SPB 101, if the student has not already taken SPB 101; SPB 491, SPB 590, SPR 551, and SPC 521. By graduation, honors students are also required to take at least fifteen credits in departmental courses at the 500 - and 600-level, including those courses required in the major, and SPR 551 and SPC 521. However, this requirement cannot be satisfied by taking SPB 590 or any practical skills courses or internships.

In addition to the departmental curriculum, the student must elect at least fifteen credits in honors-designated courses, from those in the department and those given by other College of Liberal Arts departments, including at least one 400-level seminar offered through the Liberal Arts Honors Program (see pages 269-270). For further information about seminar topics or other honors-designated courses, consult the College of Liberal Arts section of the Schedule of Classes, under 'Honors Program.'

## Minor and Cognate Study

The following minors are available in the department and should be pursued in consultation with an adviser in each of the specialized areas of concentration. While a minor designation does not appear on the diploma, it will be noted on the student's transcript

## Minors in Speech Communication:

Communication and Rhetorical Processes: A minor in this area requires: SPB 101; SPC 210, 216, 220, 321 and one additional SPC course selected in consultation with an adviser in the area

Oral Interpretation: A minor in this area requires: SPO 204, 250, and an additional $9-12$ credits in electives in oral interpretation.

## Minor in Journalism

A minor in this area requires: SPJ 210, 321,500, 502 and an additional $6-8$ credits elected from among the following courses: SPJ 228, 322, $341,400,446,470,521$ or 525.

## Minor in Radio and Television:

Broadcasting: A minor in this area requires: SPR 201, SPR 301 and 10 credits elected from among the following courses: SPR 211, 221, 531, 540,541 or 551.

## Minor in Public Relations:

A minor in this area requires: SPC 216, 317 and 325; SPJ 210 and 321 ; SPR 201.

## COURSES OF INSTRUCTION ${ }^{1}$ <br> Basic Speech (SPB)

## 101. (OC) Oral Communication: Basic Speech. Cr. 2-3

No student will be admitted after the third meeting of class. Beginning course emphasizing fundamentals of speech preparation. Development of poise and confidence in speaking. Majors in department are required to take course for three credits, which includes persuasive speaking component and additional presentations.
(T)

## 390. Directed Study. Cr. 1-4 (Max. 4)

Prereq: speech major with sixteen credits completed in the department; written consent of chairperson. Not open to journalism majors.
491. Honors Seminar in Speech Communication. Cr. 3

Prereq: admission to department honors program. Overview of theory and research in speech communication. Design of individual research topics.
590. Honors Directed Study. Cr. 3

Prereq: admission to department honors program; SPB 491. Writing of senior honors essay under direction of faculty adviser.

## Communication, Rhetoric and Public Address (SPC)

210. Persuasive Speaking. Cr .3

Prereq: SPB 200. Audience analysis and motivation; choice, arrangement, adaptation of materials. Talks to win attention, secure action, overcome prejudice and hostility. Theory and practice of social psychology as applied to persuasion.

## 211. (CT) Argumentation and Debate. Cr. 3

Prereq: completion of oral communication competency requirement. Logical and legal foundation of the argumentation process; practical experience in analysis, reasoning, case-building, evaluation of evidence, refutation and cross-examination.

[^31]216. (PL) Contemporary Persuasive Campaigns and Movements. Cr. 4 (Max. 8)
Rhetorical analysis of techniques utilized in specific campaigns and movements. Political campaigns and/or social movements offered in fall semester; advertising and consumerism offered in winter semester.
(F,W)
219. (PL) Rhetoric in Western Thought. Cr. 3

Prereq: sophomore standing, SPB 200. Major trends in rhetorical theory from classical times to the present; analysis and criticism of theoretical consepts in speechmaking and persuasion pedagogy.
220. Interpersonal Communication. Cr. 3

Introduction to theory and research on interpersonal communication; analysis of everyday communication situations; practice in interpersonal communication.
224. Forensics Practicum. Cr. 1-2(Max. 6)

Prereq: SPC 211 or consent of instructor. Two credits only with consent of instructor. Training and participation in debate and contest speaking.
310. Business and Professional Speaking. Cr. 3

Prereq: SPB 200. Review and practice of various oral communication forms used in modern organizations. Topics include persuasive speaking, informative speaking, speech writing, proposal presentations and parliamentary procedure.

## 317. Fundamentals of Public Relations. Cr. 4

Prereq: SPB 200 or SPC 210 or equiv. No undergraduate credit after SPC 516. Historical background of the profession of public relations; communication variables in public relations; emphasis on presentational techniques, publicity preparation and development of special events.
321. Communication: Concepts and Contexts. Cr. 4

Survey of theory and research in communication with attention to a variety of communication contexts.
325. Introduction to Organizational Communication. Cr. 3

Introduction to major theories and principles used to guide the effective practice of communication within organizations.
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.
504. Communication in the Black Community. (S E 537) (LIN 504). Cr. 3

Sociolinguistic and rhetorical analysis of speech and language behavior among Afro-Americans; linguistic history and development of black English. Related issues concerning the education of black children.
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.

## 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.

## 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.
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.
521. Theories of Persuasion. Cr. 3

Prereq: SPC 210. Survey of theory and research on communication as social influence.
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.
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.
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.
620. Theories of Small Group Processes. Cr. 3

Prereq: SPB 200, SPC 520. Theory and research on communication in the small, task-oriented group.
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.

## Speech Education (SPE)

## 606. Teaching Communication at the Secondary Level. (S E 606). Cr. 3

Prereq: fifteen credits in speech. Philosophy, pedagogical issues, and methods for teaching speech in secondary schools.
607. Directing Forensics. Cr. 3

Prereq: SPC 211. Philosophy and methods of directing high school and college forensics programs; techniques of coaching for debate, oratory, extempore speaking and other reading and speaking contests.

## Film (SPF)

## 502. Studies in Film History. Cr. 4(Max. 12)

Prereq: FLM 201 or FLM 202; junior standing or above. Material fee as indicated in Schedule of Classes. Analysis of the development of a specific film genre, a director, or other historical aspect of the motion picture. Topics to be announced in Schedule of Classes .

## 506. Documentary and Non-Fiction Film. Cr. 4

Prereq: FLM 201 or FLM 202; junior standing or above. Material fee as indicated in Schedule of Classes. Study of the non-fiction film made for a social, cultural, or political purpose; screening and analysis
of selected films;
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.
540. (SPR 540) Techniques of Film/Video Production. Cr. 4

Prereq: SPR 221 or FLM 201. Material fee as indicated in Schedule of Classes. Experience with the preparation, shooting and editing of video projects in film-style production.
543. Film Production I. Cr. 4

Prereq: junior standing or above. Introduction to principles of cinematography (including cameras, lenses, film stock, pictorial composition, and lighting) and editing (including screen continuity and sound interlock); projects utilize Super 8 mm and 16 mm equipment.
544. Film Production II. Cr. 4

Prereq: SPF 540. Continuation of SPF 543. All aspects of sound motion picture production including emphasis on scripting, budgeting, shooting and direction, post-production, sound mixing and $A B$ roll editing.
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.

## Journalism (SPJ)

200. Contemporary American Press. Cr. 3

Survey of issues facing newspapers and magazines today.
210. News Reporting. Cr. 4

Prereq: ENG 301; sophomore standing; basic typing skills. Basic reporting: getting the facts and writing them well. Journalism skills course.
228. Photojournalism. Cr. 3

Prereq: access to 35 mm camera. A grade of C or better is required to elect additional coursework in journalism. Theories and problems of news photography. Camera and darkroom techniques, news event coverage, picture stories and photo essays for newspapers and magazines. Students must have their own cameras and must develop and print their own photos. Journalism skills course.
321. (CL) News Editing. Cr. 4

Prereq: SPJ 210. Material fee as indicated in Schedule of Classes. Copy reading, proofreading, headline writing, AP style, familiarization with and use of VDTs. Journalism skills course. (T)
322. Newspaper Design and Layout: Cr. 4

Prereq: SPJ 210, 211, with grade of C or better. Theory and practice of designing and layout of newspapers and newspaper pages.
(Y)
341. Radio and Television News Reporting. Cr. 4

Prereq: SPJ 210; must have access to cassette tape recorder. Techniques of preparing news for broadcasting; practical experience in the studio presentation of news. Journalism skills course.
400. Journalism Internship. Cr. 3 (Max. 6)

Prereq: completion of fifteen credits in journalism major sequence; senior standing. Open only to journalism majors. Work assignments on daily or weekly newspapers, radio-television stations or public relations and advertising agencies. Journalism skills course.
445. Writing the Column, Editorial and Review. Cr. 4

Prereq: SPJ 210 with grade of C or better. The writing of newspaper opinion in its various forms.
446. Magazine and Feature Writing. Cr, 4

Prereq: SPJ 210. Preparation of feature material and non-fiction articles for magazines and newspapers; the market for the free-lance writer. Journalism skills course.
470. Public Affairs Reporting. Cr. 4

Prereq: SPJ 210. Writing complex news stories. Coverage of legislative, judicial, and executive branches of government at city, county, state and federal levels. Journalism skills course.
490. Directed Study. Cr. 1-3 (Max. 4)

Prereq: SPJ 210; written consent of adviser and Journalism Area Head. Open only to journalism majors. Supervised individual research.
500. History of American Journalism. Cr. 3

Prereq; one course in American history. Development of the American press from colonial times to the present.
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.
505. Computer Graphics and Typography. Cr. 3

Prereq: SPJ 210, 321. Newspaper and other print media graphics using computers; use of various popular PC programs on Macintosh computers; type selection and preparation for publishing.
521. Newsletters and Corporate Publications. Cr. 3

Prereq: SPJ 321. Editing journalism newsletter; field trips to area magazines; editing internal publications. Journalism skills course.
525. News Management. Cr. 4

Prereq: SPJ 210, 321. Theory and practice of newsroom management; how to supervise; how to hire and direct news staffs.

## Oral Interpretation (SPO)

## 204. Voice and Articulation. Cr .3

Laboratory for individual improvement in voice and articulation. Analysis of voice and articulation of each student followed by intensive exercise.

## 250. Beginning Oral Interpretation. Cr. 3

Oral performance approach to literature, fusing voice, body and meaning in the reading aloud of poetry, prose, drama; interaction of reader, listener, and literature.
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.
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.
556. Oral Interpretation of Shakespeare. Cr. 3(Max. 6)

Prereq: SPO 250 or equiv. Analysis and performance of Shakespeare's plays and poetry.
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.
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.
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.

## Radio and Television (SPR)

201. Survey of Mass Communications. Cr. 4

Grade of $C$ or better required to use this course as prerequisite. An introduction to the broadcast, print, and film media, with emphasis on origins, structure, functions, social implications and economic significance of the channels of communications.
211. Radio and Television Announcing. Cr. 3

Prereq: SPR 201. Material fee as indicated in Schedule of Classes. Theory and practice in broadcast media performance.
221. Writing for Radio-Television-Film. Cr. 3

Prereq: SPR 201 and a second English writing course after ENG 102, with grades of $C$ or above. Application of writing principles to various forms of copy; continuity, commercials, public service announcements, features, documentary, drama.
267. Radio-Television-Film Laboratory. Cr. 1(Max. 4) Practical experience in workshop projects.
301. Mass Media Analysis and Criticism. Cr. 4

Prereq: sophomore standing or above. Material fee as indicated in Schedule of Classes. Formal properties and aesthetic considerations in media, especially film and television.
311. Television Performance. Cr. 3

Prereq: SPR 211. Material fee as indicated in Schedule of Classes. Practical application of the principles and techniques of television performance.
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.
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.
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.
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.

## 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. Emphasis on the organization and execution of the television studio director's tasks.
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.
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.
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.
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.


Office: 125 Matthaei Building
Chairperson: Georgia Reid

Assistant Professors<br>Eva Jablonowski Powers, Georgia Reid, Ann Zirulnik (Emerita)

## Lecturer

Linda Cleveland Simmons

## Degree Programs

## Bachelor of Science-with a major in dance

* Master of Science-with a major in dance

The Dance Department provides opportunities for experiential and academic dance studies. The Department offers curricular choices at the undergraduate and post degree levels designed to meet individual needs and interests, prepare certified teachers of dance, and encourage students to perform, choreograph and produce concert dance of high quality. Undergraduate studies in dance are reflected in the following major and minor designations:

Teaching major in dance for K-12 certification.
Teaching minor along with any secondary school teaching major such as music, art, special education, speech, etc.; teaching minor or specialization in dance with a physical education major.

Major in Dance leading to the Bachelor of Science degree from the School of Fine and Performing Arts.

Dance sequence within any major in the School of Fine and Performing Arts or the College of Liberal Arts.

## Bachelor of Science

With a Major in Dance
The dance curriculum is intended for students who have had previous dance training and who wish to pursue careers in choreography and performance, dance history, labnotation, and movement analysis and dance education.

Admissions Requirements include the general requirements for undergraduate admission to the University (see page 13) and an audition for placement at the appropriate technical level.

DEGREE REQUIREMENTS: Candidates for the bachelor's degree with a major in dance must complete 124 credits in course work, including four semesters of performance in the University Dance Company and the Group Requirements of the School of Fine and Performing Arts (see page 153); as well as the University General Education Requirements (see page 20) and the major requirements listed below. All course work must be completed in accordance with the academic procedures of the University and the School of Fine and Performing Arts; see pages $5-35$ and $153-156$, respectively. Company members are required to take a technique class four days per week. Fifty-two credits must be earned in specified dance courses with grades of ' $C$ ' or better; the grade of ' $D$ ' is not acceptable in any required dance course for dance majors.

## MAJOR REQUIREMENTS

credits
DNC 201 - Technique Laboratory I .....  2
DNC 221 - Intermediate Ballet ..... $\ldots$
DNC 231 - Historical Perspectives of Dance .....  3
DNC 242 - Music Theory and Appreciation for Dancers .....  2
DNC 311 - Ethnic Dance Forms .....  2
DNC 331 - Dance Production .....  2
DNC 398 - Assisting in Dance .....  1
DNC 401 - Technique Laboratory II .....  .1
DNC 455 - Choreography I. ..... 3
DNC 481 - Methods in Modern Dance \& Ballet .....  3
DNC 511 - Study in Dance Styles. .....
DNC 540 - Survey of the Dance Discipline. .....
DNC 541 - Dance Notation 1 .....  2
ONC 544 - Movement and Dance in the Music Class .....  2
DNC 555 - Choreography II ..... 3

* DNC 561 - Dance Company 1 .....  1
DNC 571 - Workshop in Modern Dance .....  2
DNC 580 - Repertory .....  2
DNC 581 - Creative Dance for Children .....  3
$\dagger$ DNC 582 - Creative Dance Movement for the Pre-School Child .....  3
Cognate Requirements
BIO 287 - Anatomy and Physiology ..... 5
PE 358 - Kinesiology .....  3
Minor in Dance Education: The dance education minor requirestwenty-five credits to meet Departmental and State Certification re-quirements for teaching in grades K-12. Required courses include:
ONC 111 - International Folk Dances I ..... 1
DNC 201 - Technique Laboratory II .....  .2
DNC 221 - Intermediate Ballet .....  .1
DNC 231 - (VP) Historical Perspectives of Dance. ..... 3
ONC 311 - Ethnic Dance Forms ..... 2
ONC 331 - Dance Production .....  2
DNC 401 - Technique Laboratory II .....  1
DNC 455 - Choreography 1 .....  3
DNC 481 - Methods in Modern Dance and Ballet. ..... 3
DNC 561 - Dance Company 1 .....
DNC 581 - Creative Dance for Children ..... 3
Post-Degree studies in dance: Students who have State Teacher Certification in any secondary major may add a Dance Certification $\mathrm{K}-12$ by completing the Dance Minor requirements.
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 works choreographed by visiting artists, by faculty, and by exceptionally talented students. All majors must qualify for and be a member of the Company for four semesters.

[^32]gymnastics and dance.

## COURSES OF INSTRUCTION ${ }^{1}$ Dance (DNC)

101. Contemporary Dance I. Cr. 2<br>Basic movement techniques and improvisational experiences in concert dance; films and concert viewing.

102. Contemporary Dance II. Cr. 2(Max. 6)
Prereq; DNC 101 or equiv. Continuation of DNC 101 on an
intermediate level.
103. International Folk Dances 1. Cr. 1(Max. 4) Introduction to the style and form of folk dances.
104. Fundamentals of Classic Ballet I. Cr. 1(Max. 4)

Fundamental techniques of classic ballet; emphasis on analysis, proper execution.
122. Fundamentals of Classic Ballet II. Cr. 1-2(Max. 6) Prereq: DNC 121 or equiv. Continuation of DNC 121.
201. Technique Laboratory I. Cr. 2(Max. 12)

Prereq: DNC 102 or equiv. Modern dance technique of increasing difficulty and complexity; experiences in improvisation, problem solving, and compositional studies in dance.
(F,W)
221. Intermediate Ballet. Cr. 1(Max. 8)

Prereq: DNC 122 or equiv. Continuation of DNC 122 on a more advanced technical level with emphasis on placement.
(F,W)

## 231. (VP) Historical Perspectives of Dance. Cr. 3

Historical development of dance in the nineteenth and twentieth centuries; educational, ethnic, theatre and classic concert styles and their relationship to the cultural environment.
242. Music Theory and Appreciation for Dancers. Cr. 2

Elements of music relevant to the artistic growth of dancers. Rudimentary music theory with emphasis on rhythm, concepts of style, historical survey, music listening skills. Musical examples, especially music composed for dance.
311. Ethnic Dance Forms. Cr. 2

Folk and ethnic dance, and dance styles of selected historical periods; their development from the ritual matrix into recreational forms. Continued investigation of folk dances of increasing complexity.
331. Dance Production. Cr. 2

Concentration on selected types of dance production including an examination of purpose and content; technical considerations such as costumes, makeup, lighting and decor; the management of performance-related matters.
382. (P E 341) Physical Education for Elementary School Children I. Cr. 3

Prereq: admission to senior college. A movement education approach which focuses on beginning movement concepts and skills utilized in teaching games, gymnastics and dance.
383. (P E 342) Physical Education for Elementary School Children II. (DNE 383). Cr. 3

Prereq: P E 341 or equiv. Continuation of DNC 382, focusing on more advanced movement and aesthetic concepts and skills. Investigation of individualized approaches which use movement themes, traditional dances, sport forms, and creative work in games,
${ }^{1}$ See page 433 for interpretation of numbering system, signs and abbreviations
398. Assisting in Dance. Cr. 1(Max. 4)

Prereq: consent of dance adviser. Assigned field work in assisting under faculty supervision.
(F,W)

## 401. Technique Laboratory II. Cr. 1(Max. 8)

Prereq: DNC 201 or equiv. Modern dance technique, intermediate and advanced level.

## 455. Choreography I. Cr. 3

Prereq: DNC 102 or equiv. Construction of motifs and dance studies based on music, properties, nonliteral and literal thematic materials. Form and structural concepts.
481. Methods in Modern Dance and Ballet. (DNE 481). Cr. 3

Prereq: DNC 102 and 122 or equiv. Analysis of instructional methods and materials in modern dance and ballet, including technique, improvisation, composition, curriculum planning and evaluation.

## 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.
540. Survey of the Dance Discipline. Cr. 2-4(Max. 16)

Examination of the profession, focusing on current practice and professional preparation.
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.
542. Dance Notation II. Cr. 2

Prereq: DNC 541 or equiv. Continuation of DNC 541.
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 is Orff Schulwerk which stresses the elemental relationships among language, music and movement.
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.
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.
580. Repertory. Cr. 1-4(Max. 12)

Prereq: DNC 401 or equiv.; admission by audition. Learning, for performance, of standard modern repertory, dances previously choreographed by instructor, Labanotated dance, or work of Artist-in-Residence.
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.
582. Creative Dance Movement for the Pre-School Child. (TED 582). Cr. 3

Creative dance activities; manipulative, musical, imaginative and
kinesthetic approaches to movement.
590. Independent Study in Dance. Cr. 1-4(Max. 12)

Prereq: major or minor in dance. Independent work in dance under faculty guidance.
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.
( $\mathrm{F}, \mathrm{W}$ )

## 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.

## Dance Education (DNE)

382. (P E 341) Physical Education for Elementary School Children I. Cr. 3

Prereq: admission to senior college. A movement education approach which focuses on beginning movement concepts and skills utilized in teaching games, gymnastics and dance.
383. (P E 342) Physical Education for Elementary School Children II. Cr. 3

Prereq: P E 341 or equiv. Continuation of DNE 382, focusing on more advanced movement and aesthetic concepts and skills. Investigation of individualized approaches which use movement themes, traditional dances, sport forms, and creative work in games, gymnastics and dance.
441. Student Teaching and Seminar I. (Fld: 14). Cr. 2-6 Prereq: 2.5 h.p.a. in major; admission to student teaching. Offered for $S$ and $U$ grades only. First experience in student teaching. (F,W)
442. Student Teaching and Seminar II. (Fld: 14). Cr. 2-6 Prereq: 2.5 h.p.a. in major; admission to student teaching; DNE 441. Offered for $S$ and $U$ grades only. Second experience in student teaching.
(F, W)
481. (DNC 481) Methods in Modern Dance and Ballet. Cr. 3

Prereq: DNC 102 and DNC 122 or equiv. Analysis of instructional methods and materials in modern dance and ballet, including technique, improvisation, composition, curriculum planning and evaluation.

## MUSIC

## Office: 105 Schaver Music Building

Chairperson: Peter J. Schoenbach
Associate Chairperson: Doris L. Richards
Assistant to the Chairperson: Margot Demerais

## Professors

Harold Arnoldi, Angelo M. Cucci (Emeritus); Mark F. DeLeonard (Emeritus), Ray P. Ferguson, James J. Hartway, Morris Hochberg (Emeritus), Malcolm M. Johns (Emeritus), Joseph A. Labuta, Robert F. Lawson (Emeritus), Graham Overgard (Emeritus), Wilbur J. Peterson (Emeritus), Peter J. Schoenbach, Jason H. Tickton (Emeritus), Ruth S. Wylie (Emerita), C. William Young (Emeritus)

## Associate Professors

Lillian J. Cassie (Emerita), Carol J. Collins (Emerita), Bohdan J. Kushnir (Emeritus), Doris Richards, Dennis Tini

## Assistant Professors

Derek Anthony, Davis Brooks, James Lentini, Frank Murch (Emeritus), Deborah Smith, Mary Wischusen, Michael Zelenak

## Lecturers

Matthew Michaels, Richard Piippo

## Adjunct Professors

David DiChiera, Gunther Herbig

## Adjunct Associate Professors

Salvatore Rabbio, Paul Schaller, Eugene Wade

## Divisional Directors

Derek Anthony (voice), Joseph Fava (guitar), Ray Ferguson (organ), James Hartway (theory and composition), Mischa Kottler (piano), Joseph Labuta (music education), Matthew Michaels (jazz studies), Richard Piippo (strings), Paul Schaller (woodwinds), Dennis Tinj (choral), Eugene Wade (brass), Michael Zelenak (percussion)

## Affiliated Performance Faculty

Emily Austin (violin), Italo Babini (violoncello), Clement Barone (flute), Christopher Birg (guitar), Frances Brockington (voice), George Cailotto (free bass accordion), Jeanette Dagger-Haviaras (voice), Lee Dyament (guitar), Joseph Fava (guitar), Paul Ganson (bassoon), Robert Gladstone (string bass), Marjorie Gordon (voice), Nathan Gordon (viola), Lana Gore (bayan), Oliver Green (clarinet), Carolyn Grimes (voice), Morris Hochberg (violin), William Horner (trumpet), Elsie Inselman (voice), David Ireland (viola), Maxim Janowsky (string bass), Edward Kingins (voice), Mischa Kottler (piano), Vladislav Kovalsky (piano), Gale Kramer (organ), Oscar LaGasse (tuba), Lawrence Liberson (clarinet), David Ludwig (voice), Jose Mallare (saxophone), Ervin Monroe (flute), Ronald Odmark (oboe), Sergio Pezzetti (voice), Geraldine Powers (voice), Salvatore Rabbio (percussion), Paul Schaller (clarinet), Toma Schwartz (piano), Joseph Skrzynski (trombone and baritone), Anna Speck (voice), Gordon Stump (trumpet), Darwin Swartz (piano), Patricia Terry-Ross (harp), Samuel Tundo (percussion), Eugene Wade (French horn), Stacey Wooley (violin)

## Affiliated Faculty For Jazz Studies And Contemporary Media

George Benson (woodwinds), Jack Brokensha (vibes), Buddy Budson (piano), Angelo Carlisi (woodwinds), Maurice Davis (trumpet), Earl DeForest (woodwinds), Kendon Everts (percussion), Davis Gloff (voice), Edward Gooch (trombone), Mike Grace (bass), Leo Harrison (trombone), James Hartway (piano), Billy Horner (trumpet), David Jones (history), Jerry Jones (percussion), Gary Leach (bass), Don Lewandowski (bass), Joe LoDuca (guitar), Jerry McKenzie (percussion), Matt Michaels (piano), Bruce Nazarian (guitar), Larry Nozero (woodwinds), Dan Pliskow (bass), Sal Rabbio (vibes), Richard Rattner (business/law), Joe Resnick (percussion), Ernie Rogers (woodwinds), Eddie Russ (piano), James Ryan (percussion), Gordon Stump (trumpet), Dennis Tini (voice and piano), George Troia, Jr. (trombone), Robert Troy (guitar), John Trudell (trumpet)

## Degree Programs

## Bachelor of Arts-with a major in music

Bachelor of Music-with a major in church music, composition, jazz studies and contemporary media, music education, music industry management, music therapy, performance, and theory

## *Master of Arts-with a major in music

## *Master of Music-with a major in composition, choral

 conducting, theory, performance, and music educationThe music programs at Wayne State offer many of the advantages of studying at a major urban university. As an integral part of the cultural center of Detroit, the university is enriched by the musical activities of other major institutions in the area such as the Institute of Arts, Orchestra Hall and the Michigan Opera Theatre. Additionally, the close relationship between this department and the Detroit Symphony Orchestra, one of the nation's great orchestras, provides an artistic resource of the highest calibre. Qualified students can find opportunities in performance and arts management with these and other institutions while studying with members of the Detroit Symphony, jazz artists or other distinguished faculty. Music study can also lead to numerous careers in the fields of teaching, therapy, religion, business, jazz and commercial music.

Scholarship: All course credit applicable to any of the following degree programs must be completed in accordance with the academic procedures of the University and the School governing undergraduate scholarship and degrees; see pages 5-35 and 153-156, respectively.

Music majors pursuing undergraduate degrees must earn the grade of ' $C$ ' or better in all music courses required in the music curricula they are pursuing. The grade of ' $D$ ' is not an acceptable grade for degree credit. If the grade of ' $D$ ' is received by a music major in any required course in a music curriculum he/she is following, the course must be repeated until a grade of ' C ' or better is earned, in order for the course to be counted toward graduation requirements.

## Bachelor of Arts <br> with a Major in Music

The Bachelor of Arts curriculum is designed for students who want to develop their musical knowledge and ability while obtaining a broad liberal arts education. It provides students with the academic and

[^33]musical prerequistes necessary for continuing graduate study in such fields as music theory, musicology and ethnomusicology.

Admission Requirements for the Bachelor of Arts program are satisfied by the general requirements for admission to the University; see page 13.

Matriculation: All incoming freshmen and transfer students are required to elect MUH 100 and 101, Orientation to Concert Music I and II. This sequence is intended to orient new students to the discipline of music and the resources of this Department.

DEGREE REQUIREMENTS: Candidates for this degree must complete a minimum of 120 credits including satisfaction of the University General Education Requirements (see below and page 20) and the School Group Requirements (see page 153), as well as the Music Core, Performance Ensemble, and Bachelor of Arts curriculum requirements cited below. Students pursuing a bachelor of arts degree must also fulfill the foreign language requirement (see page 153). Only fifty-six credits in music are applicable to this degree.

General Education: The Department requires election of PSY 101 (Introductory Psychology) and PHY 310 (Sounds of Music) which may be used to satisfy the University General Education Requirements for a life science and physical science, respectively.

## MUSIC CORE REQUIREMENTS

1. MUT $114,115,116,117,214,215,216,217,406$
2. MUH $100,101,332,333$
3. MUA $179,279,379$

## PERFORMANCE ENSEMBLE REQUIREMENTS

All undergraduate music majors must fulfill a minimum of eight sequential semesters of a Performance Ensemble. Performance Ensembles for the Bachelor of Arts program are defined as MUA 280, 281, 284 , or 285 in the student's principal instrument.

All undergraduate music majors who elect eight or more credits in the fall or winter semesters must elect a Performance Ensemble concurrently in that semester.

Students transferring from other institutions must have their transcripts evaluated by the Departmental chairperson for possible advanced credit toward the Performance Ensemble requirement.

## CURRICULUM REQUIREMENTS

1. MUT 210 and 211
2. MUH 331 and 334

## Bachelor of Music

The Bachelor of Music degree provides a program for talented students with prior musical experience and skills who seek professional training in music. A wide range of majors is available under the program to meet the specialized interests and career plans of serious music students. Depending on the student's qualifications he or she may choose from nine professional areas of concentration: 1) performance; 2) theory; 3) composition; 4) vocal music education; 5) instrumental music education; 6) music industry management; 7) music therapy; 8) church music; 9) jazz studies and contemporary media.

Admission to this program is contingent upon satisfaction of the general requirements for undergraduate admission to the University (see page 13) as well as upon audition and approval of the divisional director for the specific curriculum of the student's major. Audition dates are scheduled throughout the year and prospective students should contact the Music Office for scheduling information. Entering
students must consult the Departmental counseling staff prior to their first registration.

Matriculation: All incoming freshmen and transfer students are required to elect MUH 100 and 101, Orientation to Concert Music I and II. This sequence is intended to orient new students to the discipline of music and the Department.

DEGREE REQUIREMENTS: Candidates for the Bachelor of Music must complete 120 to 129 credits (combined Music and Music Education programs require 137 to 147 credits; see below) including satisfaction of the University General Education Requirements (see below and page 20) and the School Group Requirements (see page 153), as well as the Music Core (see above, under Bachelor of Arts), a Performance Ensemble, and one of the major concentrations cited below.

General Education: The Department requires election of PSY 101 (Introductory Psychology) and PHY 310 (Sounds of Music) which may be used to satisfy the University General Education Requirements for a life science and physical science, respectively.

## PERFORMANCE ENSEMBLE

For a general explanation of this requirement see above, under the Bachelor of Arts program. Specific requirements for the various concentrations offered under the Bachelor of Music are as follows:
(a) Bachelor of Music with a Major in Composition-Performance Ensemble of the principal instrument;
(b) Bachelor of Music with a Major in Instrumental Music Education-

1. Winds or percussion-MUA 280
2. Strings-MUA 281;
(c) Bachelor of Music with a Major in Vocal Music Educationeight semesters of MUA 284 or 285;
(d) Bachelor of Music with a Major in Music Therapy-Performance Ensemble of the principal instrument;
(e) Bachelor of Music with a Major in Performance-
3. Organ-any Performance Ensemble
4. Piano-any Performance Ensemble
5. Voice-eight semesters of either MUA 284 or 285
6. Winds or percussion-minimum of two semesters of MUA

281 (except saxophone) and four semesters of MUA 280
5. Strings-MUA 281
6. Classic Guitar-any Performance Ensemble
(f) Bachelor of Music with a Major in Church Music-any vocal Performance Ensemble with a minimum of eight semesters of MUA 284 or 285 ;
(g) Bachelor of Music with a Major in Theory-Performance Ensemble of the principal instrument;
(h) Bachelor of Music with a Major in Music Industry Management-Performance Ensemble of the principal instrument.
(i) Jazz Studies and Contemporary Media majors must fulfill the following specific ensemble requirements:
(a) Eight semesters of MUA 282;
(b) Recommended elections from MUA 280, 281, 283, 284, 285, 286 or 287.

## Chamber music ensemble requirements for specific Bachelor of Music curricula

(Chamber music ensemble is defined as the appropriate section of MUA 288)

1. Bachelor of Music with a Major in Performance-
(a) Organ (one semester);
(b) Piano (four semesters);
(c) Winds, percussion, strings (four semesters);
(d) Classic Guitar (four semesters);
2. Bachelor of Music with a Major in Church Music (one semester);
3. Bachelor of Music with a Major in Jazz Studies and Contemporary Media (two semesters).

- Major Programs

Churth Music ( 123 Credits)
(a) MUT 204, 210, 211;
(b) MUA 260, 261, 267;
(c) MUH 331, 334, 535;
(d) Two semesters of MUA 573;
(e) Two semesters of MUP 221;
(f) Twenty-four credits of MUP 220;
(g) Performance of a half recital in the junior year; and a full recital in the senior year.

## Composition or Theory (120 Credits)

(a) MUT 204, 210, 211, 212, 300, 310, 311, 504, 506 or 507 or 508; MUH 331, 334, and

1. For Composition majors-MUT 410, 411; MUA 173, 174, 175, 176; PHI 370
2. For Theory majors-Foreign Language Group Requirement (French or German recommended);
(b) MUH 336 or 337 recommended;
(c) Senior projects-
3. For Composition majors-presentation of an original composition approved by the Director of the Theory and Composition Division
4. For Theory majors-presentation of a lecture coordinated by the Director of the Theory and Composition Division;
(d) MUA 267, and three semesters of piano in addition to MUA 379.

## Instrumental Music Education (128 Credits)

(a) Eight semesters of the principal instrument selected from MUP $223,224,225$ or 226 at one credit per semester;
(b) One semester of MUA 173; two semesters of MUA 174; one semester of MUA 175 and MUA 176, plus satisfactory proficiency on all orchestra instruments as prescribed by the Music Education Division;
(c) MUH 334;
(d) MUA 267, 268;
(e) MED 350, 454, 455;
(f) MUT 507 (for winds and percussion majors);
(g) MUT 300 (for string majors).

## Vocal Music Education (126 Credits)

(a) MUP 221-four semesters at one credit per semester;
(b) MUP 222-four semesters at one credit per semester;
(c) Four additional semesters of MUP 221 and/or 222 at one credit per semester, as directed by the adviser;
(d) MUH 334;
(e) MUA 267;
(f) MED 350, 451, 453, 555;
(g) Six credits selected from MUA $170,173,174,175$ or 176.

## Music Therapy (120 Credits)

(a) Eight semesters of the principal instrument selected from MUP 220-229 at one credit per semester;
(b) MUH 334 or 336 or 337 ;
(c) MUA $170,172,267,375,475,568,571,572,574$;
(d) PSY331;
(e) BIO 100 or 101, BIO 287;
(f) SED 503;
(g) SPD 530;
(h) Additional music and general electives selected with assistance of the Divisional Director.

Note: An equivalency program is available to students who have earned a bachelor's degree in music. These programs require an internship by direction of the Divisional Director for completion of the prerequisites for certification as a Registered Music Therapist.

## Performance (120 credits)

(a) MUT 210 ;
(b) MUH 334, 535;
(c) Twenty-four credits of MUP $220-228$ in the principal instrument (thirty credits maximum); students must study continuously until senior recital is completed;
(d) Two credits of one secondary instrument (violinists elect viola or complete by examination);
(e) Performance on a student recital in the sophomore year; a half recital in the junior year; and a full recital in the senior year;
(f) Specific additional requirements as follows:

1. Piano-MUT 204, 211;
2. Organ-MUT 204, 211; two semesters of MUA 573;
3. Strings, winds or percussion-MUT 300
4. Voice-MUT 508; proficiency in two foreign languages other than the native tongue at the discretion of the adviser.

## Jazz Studies and Contemporary Media (128 Credits)

(a) Eight semesters of the principal instrument selected from MUP 520-529;
(b) MUT 212, 300, 310, 511, 512, 513;
(c) MUH 336, 337;
(d) MUA 267, 560, 561, 569;
(e) Additional music electives, senior recital or project selected with the assistance of the Divisional Director.

## Music Industry Management (129 Credits)

Students may not elect more than twenty-nine credits in the School of Business Administration for this degree.
(a) Eight semesters of the principal instrument selected from MUP 220-229 at one credit per semester;
(b) MUT 300;
(c) MUA 560,561 ;
(d) ENG 301;
(e) PHI 105;
(f) ECO 101, 102, 410, 510;
(g) $\operatorname{CSC} 100$;
(h) MAT 150;
(i) ACC 301, 302, 351;
(j) MGT 550, 552, 560;
(k) MKT 530;
(l) FBE 529;
(m) MUH 334 or 337;
(n) Additional music electives selected with assistance of the Divisional Director

COMBINED MUSIC AND MUSIC EDUCATION PROGRAMS

Candidates in combined music/education degree programs must complete the professional education requirements of the College of Education for secondary certification; see page 87.

## Special Music Education (137-139 Credits)

(a) All courses required for the Vocal Music Education curriculum or the Instrumental Music Education curriculum.
(b) MUA 170, 475;
(c) MED 557;
(d) SED 503

## Vocal Music Education (145 Credits)

- with Vocal Performance, or Piano Performance, or Organ


## Performance

(a) Performance major approved by the adviser;
(b) All courses required for the Vocal Music Education curriculum except that the principal instrument (i.e., voice, piano or organ) must be elected for three credits per semester for eight semesters for a total of twenty-four credits (thirty credits maximum);
(c) All specific course and recital requirements for the Bachelor of Music with a major in Voice, Piano or Organ Performance.

## Instrumental Music Education (147 Credits)

- with Orchestral Instrument Performance
(a) Instrumental major approved by the adviser;
(b) All courses required for the Instrumental Music Education Curriculum except that the principal instrument (see (a) above) must be elected for three credits per semester for eight semesters for a total of twenty-four credits (thirty credits maximum);
(c) All specific course and recital requirements for a Bachelor of Music with a major in Strings, Woodwinds, Brasswinds or Percussion Performance.
(d) Eight semesters of MUA 280 for Woodwinds, Brasswinds and Percussion.


## Minor in Music

The Music Department offers a minor in music for undergraduate students majoring in other disciplines. Requirements for the music minor consist of a minimum of twenty-two credits in the following courses:
(a) Music Theory and Ear Training-MUT 114, 115, 116, 117, 214, 215;
(b) Two Music History courses selected from: MUH 331, 332, 333, and 334;
(c) Four semesters of a performance ensemble selected from: MUA 280, 281, 282, 284, and 285.

# COURSES OF INSTRUCTION ${ }^{1}$ <br> Music Theory (MUT) 

## 110. Elementary Music Theory. Cr. 2

No degree credit for music majors. Terminology and standard notation, including intervals, triads, scales, rhythm and correlated ear training.
(F,W)

## 114. Theory I. Cr. 3

Prereq: MUT 110 or satisfactory equiv. by examination. Prior knowledge of scales, clefs, and key signatures. Triads, intervals, principles of SATB part-writing, voice leading and melody harmonization, including all diatonic triads, dominant and super tonic seventh chords, inversions, and nonharmonic tones.

## 115. Ear Training I. Cr. 1

An introduction to sight singing and the basics of solfeggio. Beginning with stepwise diatonic movement and proceeding to all melodic intervals and modulation to closely related keys. Simple and compound meters and syncopation are also included.
116. Theory II. Cr. 3

Prereq: MUT 114. All seventh chord types, altered chords (tonicizing chords, modal mixing), and modulation. Binary design and correlated analysis.
117. Ear Training II. Cr. 1

Prereq: MUT 115. A continuation of MUT 115. Sight-singing chromatic melodies, modal melodies, less common meter signatures and more complex rhythmic problems.
204. Keyboard Harmony. Cr. 1

Prereq: MUA 379 . Harmonic progressions applied to keyboard; figured bass; harmonization of soprano or bass; modulation transposition and score reading.
210. Counterpoint I. Cr. 2

Prereq: MUT 214. Counterpoint of the Renaissance period with emphasis on the style of Palestrina.
211. Counterpoint II. Cr. 2

Prereq: MUT 210. Counterpoint of the Baroque period with emphasis on the style of J.S. Bach.
212. Jazz Theory and Harmony. Cr. 3

Prereq: MUT 116. Harmonic, rhythmic and melodic concepts used in jazz including basic chord nomenclature, non-tertian sonorities and advanced improvisation.
214. Theory III. Cr. 3

Prereq: MUT 116. Nineteenth century trends including chromatic harmony, species counterpoint, voice leading, structure and tonal organization.
215. Ear Training III. Cr. 1

Prereq: MUT 117. Melodic dictation, simple and compound time, syncopation, interval and scale recognition and error detection.
216. Theory IV. Cr. 3

Prereq: MUT 214. Twentieth century music; impressionistic techniques. Mainstream compositional devices of melody, harmony and rhythm; serial music, electronic music, aleatoric music, contemporary notation.
217. Ear Training IV. Cr. 1

Prereq: MUT 215. Harmonic dictation, four-part dictation including recognition of common chord progressions, cadences, non-harmonic tones, chord color and seventh chords.
300. Orchestration. Cr. 2

Prereq: MUT 216. Practical course in arranging music for orchestra, including study of transposition, arrangements from a piano score; general treatment of range, relationship, timbre, balance of orchestral instruments.
310. Composition I. Cr. 2

Prereq: MUT 216. Introduction to creative writing. Creative properties of melodic line in relation to rhythm, tonality, cadence and form; aesthetic considerations. Writing for unaccompanied instruments.
311. Composition II. Cr. 2

Prereq: MUT 310. Continuation of MUT 310. Emphasis on creative aspects of rhythm, cadence, tonal polarity, concepts of consonance and dissonance within framework of larger texture.

406. Analytic Technique. Cr. 2-4

Prereq: MUT 216. Structural analysis of tonal music.
410. Composition III. Cr. 2

Prereq: MUT 311 and 406. Creative writing in twentieth-century idioms. Aesthetic, stylistic and formal problems in composition employing contemporary techniques.
411. Composition IV. Cr. 2

Prereq: MUT 410. Continuation of MUT 410.
504. History of Music Theory. Cr. 3

Prereq: junior standing. Comprehensive survey from ancient Greeks to present.
506. Advanced Orchestration. Cr. 3

Prereq: MUT 300. Arranging and scoring for orchestra in all forms of ensemble structure.
507. Band Arranging. Cr, 3

Prereq: MUT 216. Open only to music majors.
508. Choral Arranging. Ct. 3

Prereq: MUT 216. Open only to music majors.
511. Jazz Arranging and Composition I. Cr. 3

Prereq: MUT 216 and 217. Offered for undergraduate credit only. Creative writing for small jazz and pop ensembles. Arranging for three to five pieces including "head" arrangements, block chord technique and contrapuntal writing.
512. Jazz Arranging and Composition II. Cr. 3

Prereq: MUT 511. Offered for undergraduate credit only. Creative writing for larger jazz and pop ensembles; jazz arranging for six to eighteen pieces combining various textures and timbres.
513. Jazz Arranging and Orchestration. Cr. 3

Prereq: MUT 300, 512. Offered for undergraduate credit only. Arranging pieces with concentration on orchestrating large jazz ensembles.

## Music History (MUH)

## 100. Orientation to Concert Music I. Cr. 1

Open to first term music majors. Orientation for new music majors; introduction to areas of concentration in the department as related to career options; guided listening to live and recorded music; overview of music histroy.

## 101. Orientation to Concert Music II. Cr. 1

Open to second term music majors. Continuation of MUH 100.

## 132. (VP) Music Literature: Appreciation through Performance Attendance--Opera, Oratorio, Mass. Cr. 3

Not open to music majors. Developing musical understanding and critical listening skills through live and videotaped performances of music in a variety of styles and performance media. Historical and cultural continuity provided by lectures and assigned media. Opera, mass, and oratorio.
133. (VP) Music Literature: Appreciation through Performance Attendance--Symphonic and Chamber. Cr. 3
Not open to music majors. Developing musical understanding and critical listening skills through live and videotaped performances of music in a variety of styles and performance media. Historical and cultural continuity provided by lectures and assigned reading. Symphonic and chamber music.
(F,W)
137. (VP) Music History Survey: Appreciation through Performance Attendance--Roots to 1750. Cr. 3
Not open to music majors. Developing listening skills through an historical survey of musical styles, major composers, social, political and cultural influences.
138. (VP) Music History Survey: Appreciation through Performance Attendance--Haydn to 1950. Cr. 3
Not open to music majors. Continuation of MUH 137; from 1750 to 1950.
331. Music History and Literature I. Cr. 3

Prereq: sophomore standing and MUT 116 or equiv.; music major. Primitive music through the Renaissance.
(F,W)
332. Music History and Literature II. Cr. 3

Prereq: sophomore standing and MUT 116 or equiv.; music major. Baroque through pre-Classical (1600-1750).
(F,W)
333. Music History and Literature III. Cr. 3

Prereq: sophomore standing and MUT 116 or equiv.; music major.
Classic Era and Romanticism (1750-1875).
(F,W)
334. Music History and Literature IV. Cr. 3

Prereq: sophomore standing and MUT 116 or equiv.; music major.
Late Romantic to present time (1875-1970).
336. History of Jazz to 1950. Cr. 3

Development of jazz from its inception to 1950.
337. History of Jazz: 1950 to the Present. Cr. 3 Continuation of MUH 336.
530. Music Research. Cr. 3

Prereq: graduate standing in music or consent of instructor. Music bibliography and research techniques.
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.
630. Music Criticism. Cr. 3

Prereq: upper division or graduate standing. Basics of music criticism and practical experience in writing criticism for publication.
631. Studies in Afro-American Music. Cr. 3

Contributions of Afro-Americans to the development of music in the United States.

## Music Private Instruction (MUP)

The School of Fine and Performing Arts, through the Music Department, offers private instruction in voice and specific musical instruments.

22x Series Courses: The following courses ( 22 x series) are for students who wish to study voice or an instrument in a principal and/or secondary capacity. One course per semester is the usual election for the MUP 22x series. The election of two courses concurrently in the MUP 22x series must be a requirement of the student's curriculum and requires consent of a music counselor and written consent of the Department Chairperson. A jury examination is required each semester for all students entering these courses.

Limitation: Open only to students with less than ten semesters of private performance course work including transfer credit.

Election for three credits: Open only to students in a performance curriculum or a combined curriculum of performance and music education, or theory, or composition, or music therapy, or music industry management. Not open to jazz studies majors.

Prerequisites: Major standing in a B.M. curriculum for which the MUP course is required; written consent of department chairperson; and audition for the first election.

Corequisite: Additional credits in any subject to equal eight credits, including MUP election. Performance ensembles in the MUA 28x series as required by the student's curriculum.

Fees: Special fees are arranged for these courses and are indicated in the University Schedule of Classes.

## 220. Organ. Cr. 1 or 3

Coreq: performance ensemble in the MUA 28 X series as required in curriculum being pursued. Only open, by audition, to music majors in B.M. curriculum who elect 8 credits or more.
(F,W)
221. Piano. Cr. 1 or 3

Coreq: performance ensemble in the MUA 28X series as required in the curriculum being pursued. Only open, by audition, to music majors in a B.M. curriculum who elect 8 credits or more.
(F,W)

## 222. Voice. Cr. 1 or 3

Coreq: performance ensemble in the MUA 28X series as required in curriculum being pursued. Only open, by audition, to music majors in a B.M. curriculum electing 8 credits or more.
(F,W)

## 223. Stringed Instruments. Cr. 1 or 3

Coreq: performance ensemble in the MUA 28X series as required in curriculum being pursued. Only open, by audition, to music majoprs
in a B.M. curriculum electing 8 credits or more.
(F,W)
224. Woodwind Instruments. Cr. 1 or 3

Coreq: performance ensemble in the MUA 28 X series as required in curriculum being pursued. Only open, by audition, to music majors in B.M. curriculum electing 8 credits or more.
(F,W)
225. Brasswind Instruments. Cr. 1 or 3

Coreq: performance ensemble in MUA 28X series as required in curriculum being pursued. Only open, by audition, to music majors in B.M. curriculum electing 8 credits or more.
(F,W)
226. Percussion Instruments. Cr. 1 or 3

Coreq: performance ensemble in MUA 28 X series as required in curriculum being pursued. Only open, by audition, to music majors in B.M. curriculum electing 8 credit hours or more.
(F,W)

## 227. Harp. Cr. 1 or 3

Coreq: performance ensemble in MUA 28X series as required in curriculum being pursued. Only open, by audition, to music majors in B.M. curriculum electing 8 credits or more.
(F,W)
228. Classic Guitar. Cr. 1 or 3

Coreq: performance ensemble in MUA 28X series as required in curriculum being pursued. Only open, by audition, to music majors in B.M. curriculum electing 8 credits or more.
(F,W)
329. Bayan. Cr. 1 or 3

Prereq: major standing in B.M. curriculum for which MUP course is required, and audition for first election. Open only to students with less than 10 semesters in private performance course work including transfer credit.
(F,W)

52x Series Courses: The following courses ( 52 x series) are open only to jazz studies majors. One course per semester is the usual election for the 52x series; however, some students may elect MUP 521 and 522 concurrently, in which case they must be authorized for the vocal jazz curriculum by the Director of the Jazz Division, have consent of a music counselor, and have written consent of the Drepartment Chairperson. A jury examination is required each semester for all students electing one of these courses.

Limitation: Open only to students with less than ten semesters of private performance course work including transfer credit. Not open students majoring in music in any B.A., B.S., M.A., M.M., or M.S. curriculum.

Prerequisites: Departmental approval for the jazz curriculum, written consent of Department Chairperson, and audition for first election.

Corequisite: MUA 282.
Fees: Special fees are assessed for three courses and are indcated in the Schedule of Clases.

## 521. Jazz Piano. Cr. 1

Coreq: MUA 282. Only open, by audition, to music majors in jazz studies.
(F,W)
522. Jazz Voice. Cr. 1

Coreq: MUA 282. Only open, by audition, to jazz studies majors.
(F,W)
523. Jazz Strings. Cr. 1

Coreq: MUA 282. Only open, by audition, to music majors in jazz studies.
(F,W)
524. Jazz Woodwinds. Cr. 1

Coreq: MUA 282. Only open, by audition, to music majors in jazz studies.
(F,W)
525. Jazz Brasswinds. Cr. 1

Coreq: MUA 282. Only open, by audition, to music majors in jazz studies.
(F,W)
526. Jazz Percussion. Cr. 1

Coreq: MUA 282. Only open, by audition, to music majors in jazz studies.
(F,W)
528. Jazz Guitar. Cri. 1

Coreq: MUA 282. Open only, by audition, to music majors in jazz studies.
( $\mathrm{F}, \mathrm{W}$ )
529. Jazz Accordion. Cr. 1

Coreq: MUA 282. Open only, by audition, to music majors in jazz studies.
( $\mathrm{F}, \mathrm{W}$ )

## Music Applied (MUA)

## 170. Guitar Proficiency Class. Cr. 2(Max. 8)

Prereq: music major; others by consent of instructor. Functional guitar for music therapists and teachers.
171. ' Piano Class I. Cr. 2

Not open to music majors. Rudiments: scales, study of simple compositions.
172. Voice Class. Cr. 2 (Max. 6)

Fundamentals in voice training. Correct breathing: tone placement: articulation vocalises.
(F,W)
173. String Class, Cr. 2(Max. 6)

Prereq: MUT 110 or equiv. Techniques and fundamental problems in the playing and teaching of stringed instruments.
( $\mathrm{F}, \mathrm{W}$ )
174. Woodwind Class. Cr. 2(Max. 6)

Prereq: MUT 110 or equiv. Techniques and fundamental problems in the playing and teaching of woodwind instruments.
(F,W)
175. Brasswind Class. Cr. 2(Max. 6)

Prereq: MUT 110 or equiv. Techniques and fundamental problems in the playing and teaching of brasswind instruments.
(F,W)
176. Percussion Class. Cr. 2

Prereq: MUT 110 or equiv. Techniques and fundamental problems in the playing and teaching of percussion instruments.
178. Classic Guitar Class I. Cr. 2

Open only to beginning students. Performance, basic posture and tone production.

## 179. Piano Proficiency: Level I. Cr. 2

Prereq: MUT 114. Open only to music majors. Repertoire, scales, sight reading, harmonization, simple transposition. Certification of undergraduate core piano requirement on satisfactory completion of MUA 379.
260. Church Music and Materials I. Cr. 2

Prereq: MUA 267 and major in organ or church music. Practical application of material used in churches of various faiths. For choir directors and organists.
261. Church Music and Materials II. Cr. 2

Prereq: MUA 260. Continuation of MUA 260.
267. Conducting Techniques I. Cr. 2

Prereq: MUT 216, MUT 217 or equiv. Rudiments of conducting; special attention to baton techniques.
268. Conducting Techniques II. Cr. 2

Prereq: MUA 267. Continuation of MUA 267. Score reading and rehearsal techniques.
279. Piano Proficiency: Level II. Cr. 2

Prereq: MUA 179 or equiv.; MUT 114 or equiv. Open to music majors. Continuation of MUA 179.
280. University Bands. Cr. 1

Prereq: consent of director. Members of the Marching Band may have to participate in special rehearsals before the official opening of the fall semester; members of the Symphony Band are required to perform at the Commencement exercises, and exercises may take place after the official close of the fall or winter semesters.
(F,W)
281. University Symphony Orchestra. Cr. 1

Prereq: consent of director.
282. Jazz Lab Band. Cr. 1

Prereq: consent of director.
283. Men's Glee Club. Cr. 1

Prereq: consent of director.
284. Choral Union. Cr. 1

Prereq: consent of director.
285. Concert Chorale. Cr. 1

Prereq: consent of director.
286. Opera Workshop. (THR 286). Cr. 1 (Max. 8)

Prereq: consent of director.
287. Women's Chorale. Cr. 1

Prereq: consent of director.
288. Chamber Music and Special Ensembles. Cr. 1

All forms including: Collegium Musicum, jazz improvisation, percussion ensemble, trios and quartets, and wind ensemble. . (F,W)
375. Recreational Music. Cr. 2

Leadership skills, group-management techniques, playing social instruments, collecting materials for music activities for all age groups.
(W)
379. Piano Proficiency: Level III. Cr. 2

Prereq: MUA 279 or equiv.; MUT 116 or equiv. Open only to music majors. Continuation of MUA 279. Satisfactory completion of MUA 379 leads to fulfillment of the undergraduate core piano proficiency requirement and to certification.
(F,W)
445. Intern Training in Operatic Literature and Performance. Cr. 9
Concentrated professional internship with the Michigan Opera Theater.
(Y)
475. Music Therapy Practicum. Cr. 2 (Max. 8)

Prereq: MUA 375, 568. Observation and participation in music therapy programs in area agencies employing a Registered Music Therapist.
560. Business of Music. Cr. 2

Offered for undergraduate credit only. A discussion of copyright law, performing rights organizations, contractual agreements, publishing and recording considerations, and other business concerns.
561. Recording and Electronic Techniques. Cr. 3

Prereq: major in jazz studies or music industry management. Offered
for undergraduate credit only. Material fee as indicated in Schedule of Classes. Technical knowledge of studio facilities, styles of recording procedures, overdubbing, and stylistic considerations. Adaptation of electronic music concepts to jazz and pop music including the use of synthesizers, phasers, echoplex, and other sound modification equipment.
562. Voice Class II. Cr. 2 (Max. 4)

Prereq: MUA 172 or equiv. Voice building and repertoire; simple art songs.
(F,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)
569. Stage Band Direction. Cr. 1 (Max. 3)

Prereq: MUA 267. Offered for undergraduate credit only. Techniques of big-band direction in a jazz medium. (F,W)
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.
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.
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.
577. Techniques of Piano Accompaniment. Cr. 2

Gives the advanced piano student various techniques of accompaniment among various types of literature.

## Music Education (MED)

350. Aesthetic and Cultural Foundations of Music Education. Cr. 2
Historical, philosophical, professional, legal and ethical considerations.
351. Directed Study. Cr. 1-3(Max. 6)

Prereq: consent of adviser.
451. General Music in the Schools. Cr. 3

Prereq: MED 350. Methods, materials and techniques for teaching general music in the schools.
453. Vocal Music in Secondary Schools. Cr. 3

Prereq: MED 451. Open only to vocal music education majors. Instructional techniques and materials for secondary school choral and general music courses. Observation of area school vocal programs.
454. Instrumental Music in the Schools I. Cr. 3

Prereq: MUA 173, MUA 174, MUA 175, MUA 176, MED 350. Teaching techniques, materials and organization of instrumental music in elementary schools.
455. Instrumental Music in the Schools II. Cr. 3

Prereq: MED 454. Teaching techniques, materials and organization of instrumental music in secondary schools.
456. Student Teaching and Seminar I. Cr. 1-5

Prereq: 2.5 h.p.a. in major; admission to student teaching. Offered for $S$ and $U$ grades only. Directed teaching in elementary school music.
( $\mathrm{F}, \mathrm{W}$ )
457. Student Teaching and Seminar II. Cr. 1-5

Prereq: 2.5 h.p.a. in major; admission to student teaching. Offered for $S$ and $U$ grades only. Directed teaching in secondary school music.
( $\mathrm{F}, \mathrm{W}$ )

## 552. Marching Rand 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.
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.
555. Choral Conducting and Rehearsal Techniques. Cr. 3 Prereq: MUA 267 or equiv. Conducting and rehearsal methods and materials for secondary schools.
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.
557. Music in Special Education. Cr. 3-4

Teaching techniques and music materials to meet the needs of special education students.
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.
653. Conducting and Operating the School Band. Cr. 2-3(Max. 6) Individual instruction correlated with actual administration and direction of summer youth band.
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.
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.

## THEATRE

Office: 95 W. Hancock
Acting Chairperson and Director, University Theatres: Robert T. Hazzard

## Professors

N. Joseph Calarco, Robert T. Hazzard, Leonard Leone (Distinguished Professor Emeritus), Kathryn A. Martin, Robert E. McGill, Anthony B. Schmitt, Russell E. Smith

## Associate Professors

Nira Pullin, Von H. Washington

## Assistant Professors

Sharon S. Campbell, Thomas H. Schraeder

## Lecturers

Carmen Cavello, M. Reid Downey

## Theatre Support Staff

Thomas Ball, Philip Fox II, Francis T. Majeske, Margaret E. Spear

## Degree Programs

## Bachelor of Fine Arts- with a major in theatre

## * 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

The primary aim of the Theatre Department is to assist students in developing pre-professional training in theatre arts. Undergraduate majors may prepare for careers in acting, directing, technical theatre, and theatre education. To facilitate this instruction, the Department sponsors a large number of student activities and practicum experiences including Bonstelle Theatre, and Student Stage. Participation in these activities is available to all University students.

## Bachelor of Fine Arts <br> With a Major in Theatre

This major is an intensive pre-professional curriculum that must be followed in consultation with a B.F.A. adviser in theatre. The program is designed to provide a broad understanding and an opportunity for full experience in the theatre arts through a curriculum of pre-professional training. The B.F.A. program is divided into two curricula: the performance curriculum, emphasizing acting and/or directing; and the production curriculum, concentrating upon scenic and costume design and technical theatre.

[^34]Admission requirements for the program are satisfied by the general requirements for undergraduate admission to the University; see page 13.

Matriculation: For acting and directing students, the following sequence of courses must be taken in the freshman and sophomore years, as prerequisite to declaration of the fine arts major: THR 102, 104, $105,201,202,203,204,208,211,213,217,305,501$. Students specializing in acting must audition at the end of their freshman year and secure approval of the theatre faculty in order to continue pursuit of the B.F.A. Therefore, it is essential that students considering this curriculum consult a B.F.A. adviser prior to their freshman year; transfer students should consult the B.F.A. adviser immediately. Because of the strict sequential nature of all theatre curricula, a student's progress towards a degree may be significantly delayed unless he/she consults with a B.F.A. adviser as soon as possible.

DEGREE REQUIREMENTS: Candidates must complete a minimum of 120 credits including the General Education Requirements (see page 20), the School Group Requirements (see page 153), and the major requirements cited below. All course work must be completed in accordance with the regulations of the University and the School governing undergraduate scholarship and degrees; see pages 5-35 and 153-156, respectively.

A minimum of seventy-nine credits must be elected in theatre course work. It is recommended that the student complete the Group Requirements as soon as possible. B.F.A. students are assigned a faculty adviser upon admission to the program.

ACTING: B.F.A. MAJOR REQUIREMENTS

| Structure and Analysis........................................................................... THR 102 |  |
| :---: | :---: |
| Development of Drama I and II.........................................................THR 512, 612 |  |
| Theatre History I and II................................................................... THR 510, 521 |  |
| Acting I - VIII ..................................... THR 104, 105, 203, 204, 301, 303, 401, 403 |  |
| Movement I - IV | THR 201, 202, 302, 304 |
| Voice Labl - IV | THR 211, 217, 308, 309 |
| Technical Theatre | 213, 305, 501, 503 or 306 |
| Technical Laboratory | THR 208 (Min. 4 credits) |
| Directing | THR 505 |

## DIRECTING: B.F.A. MAJOR REQUIREMENTS

| Structure and Analysis............................................................................... THR 102 |  |
| :---: | :---: |
| Development of Drama I and II. | THR 512, 612 |
| Theatre History I and II. | THR 510, 521 |
| Acting I-V. | THR 104, 105, 203, 204, 301 |
| Voice I and II | THR 211, 217 |
| Movement I and | THR 201, 202 |
| Playwriting | ... JHR 525 |
| Directing I and | THR 505, 506 |
| Technical Theatre | . THR 213, 305, 306, 501, 503 |
| Technical Laboratory | ....THR 208 (Min. 4 credits) |
| Stage Management Laborator | .THR 218 (Min. 4 credits) |

## DESIGN/TECHNICAL: B.F.A. MAJOR REQUIREMENTS

| Structure and Analysis. | THR 102 |
| :---: | :---: |
| Development of Drama I and II.. | THR 512,612 |
| Theatre History 1 and II. | . THR 510, 521 |
| Shakespeare | ....ENG 515 |
| Acting 1. | THR 104 |
| Directing 1. | ... THR 505 |
| Technical Theatre. | THR 213, 305, 306, 501, 503 |
| Scene Painting I and | ... THR 514,515 |
| Technical Theatre Problems | ...THR 216 (Min. 12 credits) |
| Stage Design . | .................. THR 508 |
| Advanced Stage Lighting Design | ..... THR 530 |
| Technical Laboratory. | .......THR 214 (Min. 4 credits) |



## Minor in Theatre

The minor is designed to be an overview of theatre arts and crafts for those with an avocational interest in theatre or those who may wish to develop valuable competencies for educational situations. It offers a general familiarity with various aspects of theatre and also creates an opportunity for a minor emphasis in either acting, directing, or design.

## REQUIRED CORE COURSES

Structure and Analysis. ..... THR 102
Acting 1 ..... THR 104
Acting II. ..... THR 105
Stagecraft ..... THR 213
Theatre History I ..... THR 510
Theatre History II ..... THR 521
ELECTIVES
One of the following:
Lighting 1 ..... THR 306
Costuming 1 . ..... THR 501
Introduction to Design ..... THR 503
One of the following:
Acting III. ..... THR 203
Directing I (Prereq: THR 503) ..... THR 505
Development of Drama 1 . ..... THR 512
COURSES OF INSTRUCTION ${ }^{1}$ (THR)
101. (VP) Introduction to the Theatre. Cr. 3
Historical, critical and cultural aspects of theatre and drama discussedrelative to play attendance.(T)
102. Structure and Analysis of the Drama. Cr. 3
Reading and structural analysis of plays. Selected nineteenth andtwentieth century plays.(W)
103. (VP) Black Theatre: An Introduction. Cr. 3
Origins, development, and current trends with production techniquesand problems related to the special area of the drama.(T)
104. Acting I. Cr. 2An introduction to improvisation and the process of acting.(Y)
105. Acting II. Cr. 2Prereq: THR 104. Continuation of THR 104.(Y)
201. Stage Movement I. Cr. 2
Material fee as indicated in Schedule of Classes. Required of B.F.A.
acting majors. Recommended for all second year acting students. Introduction to the principles, practices, and exercises in body technique and stage movement.
202. Stage Movement II. Cr. 2

Prereq: THR 201. Material fee as indicated in Schedule of Classes. Required of B.F.A. acting majors. Recommended for all second year acting students. Continuation of THR 201. Emphasis on character movement.
203. Acting III. Cr. 3

Study and exercise in the fundamentals of the actor's craft. Emphasis on the development of the actor's inner resources as applied to dramatic action, and consideration of basic stage techniques.
204. Acting IV. Cr. 3

Prereq: THR 203. Further development of the techniques covered in THR 203 and basic principles of character building. Emphasis on the development of a role through script, exercises and scene work. (W)
208. Technical Laboratory. Cr. $\mathbf{1 - 4}$ (Max. 8, B.F.A. technical students; max. 3, B.A. students)
Supervised laboratory practice in all phases of technical theatre.
209. Stage Combatives-Elementary. Cr. 1

Prereq: good physical condition. Introduction to theory and practice of elementary special combat skills for the theatre.
210. Introduction to Mime. Cr. 1

Introduction to theory and practice of ancient and modern mime and pantomime.
211. Voice Laboratory I. Cr. 2

Introduction to vocal production. Emphasis on relaxation, breathing techniques, and the production of vocal sounds.

## 213. Stagecraft. Cr. 3

Prereq: THR 101 or 103 recommended. Principles of scenic construction and painting. Types and utilization of stage scenery. Laboratory projects coordinated with University Theatre productions.
214. Performance Laboratory. Cr. 1-2(Max. 11)

Students participate as actors in University Theatre productions.
215. Advanced Stage Combat. Cr. 1

Prereq: PEA 171 or THR 209 or any stage combat course; adequate physical condition. Advanced instruction and experience in a variety of combat techniques and weapons designed for theatrical use.
216. Technical Theatre Problems. Cr. 2(Max. 18)

Prereq: sophomore standing. Open only to B.F.A. technical theatre majors. Individually assigned and directed problems in technical theatre production and design.
217. Voice Lab II. Cr. 2

Prereq: THR 211. Continuation of vocal production work and an introduction to consonant sounds.
218. Stage Management Laboratory. Cr. 1-4

Prereq: consent of adviser. Participation in theatre productions as stage manager, assistant director, choreographer, or writer.
286. (MUA 286) Opera Workshop. Cr. 1 (Max. 8)
301. Acting V. Cr. 3

Prereq: THR 204. Required of all B.F.A. acting majors. An introduction to the theories and methods of acting verse drama. Emphasis on Shakespeare.
302. Stage Movement III. Cr. 2

Prereq: THR 202. Material fee as indicated in Schedule of Classes. Required of B.F.A. acting majors. Styles of stage movement: Commedia, Moliere, Restoration. Emphasis on period deportment, manners, and dance forms.
303. Acting VI. Cr. 3

Prereq: THR 301. Required of all B.F.A. acting majors. A continuing study of theory and methods of acting classic and modern theatrical styles of comedy. Major emphasis on the American musical theatre.
304. Stage Movement IV. Cr. 2

Prereq: THR 302. Material fee as indicated in Schedule of Classes. Required of B.F.A. acting majors. Styles of stage movement: Shakespeare. Emphasis on Renaissance deportment, manners, and dance forms.
305. Principles of Makeup. Cr. 2

Fundamentals of theatre makeup. Laboratory projects coordinated with University Theatre productions.
306. Stage Lighting. Cr. 3

Theory and practice in stage lighting units, control equipment, color aesthetics; their application to play production. Basic lighting design; laboratory projects coordinated with University Theatre productions.
307. WSU Movin' Theatre. Cr. 1-2(Max. 4)

Admission by audition only.
308. Voice Lab III. Cr. 2

Preereq: THR 217. Continuation of vocal and articulation work and an introduction to rhythm and tempo in the speaking voice.
309. Voice Lab IV. Cr. 2

Prereq: THR 308. Continuation of vocal articulation and vocal music techniques; harmonizing them in performance.
390. Directed Study. Cr. 1-4(Max. 4)

Prereq: theatre major with 16 credits in the Department.
401. Acting VII. Cr. 3

Prereq: THR 303. Required of all B.F.A. acting majors. Studies and practice in audition techniques; the particular and individual acting problems of the class.
402. Stage Movement V. Cr. 2

Prereq: THR 304. Material fee as indicated in Schedule of Classes. Introduction to musical comedy theatre dance. Emphasis on performance techniques and styles of musical comedy theatre dance: tap and jazz.
403. Acting VIII. Cr. 3

Prereq: THR 401. Required of all B.F.A. acting majors. Personalization: theory and practice of techniques by which actors invest their interpretative work with their own creative vision. Scene work selected from the modern realistic theatre.

## 501. Theatre Costuming I. Cr. 3

Prereq: THR 101 or 103 recommended. Material fee as indicated in Schedule of Classes. Introduction to costume design and construction. Laboratory projects coordinated with University Theatre productions.

## 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.
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.
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.
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.
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.
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.
510. Theatre History I. Cr. 3

Required of all B.A. and B.F.A. majors. Material fee as indicated in Schedule of Classes. The development of the physical theatre and the evolution of production methods in Greek, Medieval, Renaissance, and English Restoration theatres with the correlation of the cultural environment of each period.

## 511. Black Theatre: Literature and Criticism. Cr. 2

Prereq: THR 103 recommended. Plays by black American playwrights; examination of essays by black critics; existing black theatre in America; the aesthetics of twentieth-century black drama.
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.
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.
514. Introduction to Scene Painting. Cr. 3

Prereq: THR 213. Material fee as indicated in Schedule of Classes. Laboratory and demonstration course as an introduction to painting for the stage, with an emphasis on the materials, texturing techniques, three-dimensional effects and the beginning work from painter's elevations.
515. Advanced Scene Painting. Cr. 3

Prereq: THR 514. Material fee as indicated in Schedule of Classes. Laboratory and demonstration course for the design or technical theatre student. Materials, techniques, styles of scene painting.
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.
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.
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.

## 521. Theatre History II. Cr. 3

Prereq: THR 510 or consent of instructor. Material fee as indicated in Schedule of Classes. Continuation of THR 510. From English and continental eighteenth century to contemporary European and American theatres.
525. Playwriting I. Cr. 3

Introduction to the craft of writing for the stage. Students required to write a full-length dramatic script.
526. Playwriting II. Cr. 3

Prereq: THR 525. Continuation of the study and practice of writing for the stage. Students required to write a full-length dramatic script.
530. Advanced Stage Lighting Design. Cr. 3

Prereq: THR 306; graduate standing or consent of instructor. Material fee as indicated in Schedule of Classes. Examination of situations and responsibilities encountered in professional lighting design. Project work based on large-scale, complex requirements.
531. Sound for the Theatre. Cr. 3

Material fee as indicated in Schedule of Classes. Introduction to the practice of reinforcement and reproduction of sound within the theatrical context; artistic role of sound; equipment and use.
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.
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.
603. Creative Dramatics for Children. Cr. 3

Creative dramatics and formal playmaking for and by children.
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.
606. Costume Design for the Theatre. Cr. 3(Max. 6)

Advanced phases of costume design and construction. Source material for historical and national costumes.
(I)
608. Advanced Stage and Film Makeup. Cr. 2

Prereq: THR 305. Material fee as indicated in Schedule of Classes. Continuation of basic principles applied in THR 305; emphasis on new
makeup materials; experimentation with prosthesis and design for problem makeup.
609. Professional Lighting Design. Cr. 3

Prereq: THR 306, graduate status or consent of instructor. Situations and responsibilities encountered in professional lighting design. Project work based on large scale, complex requirements.
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 today's film, television and theatrical media.
611. Special Projects in Design and Technical Theatre. Cr. 1-3 Independent research and practical application of research to specific projects.
612. Development of the Drama II: Nineteenth Century to Modern. Cr. 4
Plays and theories of the theatre from the nineteenth century to modern times; relation of drama to an era and its theatre.


## Law School

DEAN: JOHN REED

## THE STUDY OF LAW <br> AT WAYNE

The Law School of Wayne State University is a graduate school offering the Juris Doctor and Master of Laws degrees. A complete description of the programs leading to these degrees, as well as courses of instruction and academic matters relevant to law study may be found in the Graduate School Bulletin. The following selections are presented here as an introduction to the Law School for undergraduate students and to provide information for those anticipating the study of law.

## History and Goals <br> 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. The current Dean, John W. Reed, came to Wayne in 1987, after serving as Dean of the University of Colorado Law School and as the Thomas M. Cooley Professor of Law at the University of Michigan. The student body at the Law School now numbers about 700 and the full-time faculty about thirty.

Like all quality law schools, Wayne State pursues the two major goals of education and research. The primary purpose of the J.D. program is to prepare lawyers for the wide variety of roles they are now called on to fill with private law firms, corporations, public interest firms, prosecutors' and defenders' offices, and in many law-related fields. Its rich and varied educational program is designed not 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, prosecutors' and defenders' 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 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.

## 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 officers, 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.

## 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

## 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 preciude 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 law-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 received. 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 February of the 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 must file a new application and fee for another year. All credentials are kept for four years, so it often is not necessary to re-register with the LSDAS.

REDUCED PROGRAM: The first-year course load is mandatory. Day students who have substantial child care responsibilities may be permitted to take a slightly reduced course load during the first-year. To be considered for admission on this basis an applicant must request a reduced load in a separate statement which provides detailed personal circumstances supporting the request.

ENTRANCE DATES: First-year students are admitted only to the fall semester beginning in August or start in the Summer Institute beginning in June. Attendance at the Orientation program, as well as early sessions of Legal Writing and Research (JDC 640), is mandatory.

TRANSFER STUDENTS: Students from other accredited law schools, who have completed 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 student is in good academic standing. 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.

## 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.

## 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.

The Summer Institute, which begins in June, offers the five-credit Torts course. Students who attend Summer Institute then take the remaining five courses in the fall and winter semesters, thereby allowing them to devote more time to their studies.

Enrollment in the Summer Institute is limited. 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.

## Law School Directory

Admissions
J.D. Program ................................. 231 Law Library; 577-3937

LL.M. Program.............................. 395 Law Library; 577-3955
Financial Aids..................................... 317 Law Library; 577-5142
Records and Registration, Law School ...... 311 Law Library; 577-3931
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 .

# College of Liberal Arts 

DEAN: DALMAS A. TAYLOR

## Foreword

The College of Liberal Arts conducts instruction and research in a wide variety of disciplines and serves the academic interests of a diverse student population. Courses and degree programs are offered in mathematics and the sciences, the social sciences, humanistic studies, and foreign languages.

The bachelor's degree programs include instruction in the basic areas of learning as well as the opportunity to focus on fields of special interest. All programs emphasize communication, both written and spoken, and the use of precise and cogent language. Students are stimulated to think and read critically and become familiar with the tools of research so that learning may be a lifelong process. Intellectual growth is encouraged by developing in students the necessary independence, resourcefulness and judgment in early studies so that advanced courses may be selected with confidence.

Most fields of study in the College offer students both theoretical and practical training. In fields of special interest, a solid knowledge of underlying principles may thus be strengthened by practical training and experience.

The College of Liberal Arts also provides curricular flexibility to those students whose academic interests extend over several departments. Structural combinations, such as those between psychology and sociology, biology and psychology, economics and mathematics and the like, are offered, as are interdisciplinary programs such as American Studies, Black Studies, Linguistics, and Women's Studies. The Honors Program, available to selected superior students in the College, offers interdisciplinary and individualized curricula.

The undergraduate programs of the College of Liberal Arts are strengthened by the graduate programs which lead to the master's and doctor's degrees in various disciplines. Professors in the College teach both graduates and undergraduates; research projects may involve both graduates and undergraduates; some specialized classes are available to both graduate students and those undergraduates enrolled in the upper division. This opportunity for association with graduate students and research personnel enriches the experience of many undergraduate students.

In the College of Liberal Arts, students are provided with the skills, knowledge, and understanding on which to build professional and personal development in today's rapidly changing world.

## Degree Programs

Bachelor of Applied Studies Degrees-with majors in:
Psychology Sociology

Bachelor of Arts Degrees-with majors in:

| American Studies | Humanities |
| :--- | :--- |
| Anthropology | Information Systems |
| Anthropology and Sociology | Italian |
| Art History | Labor Studies |
| Biological Sciences | Latin |
| Chemistry | Linguistics |
| Classical Civilization | Mathematics |
| Classics | Near Eastern Languages |
| Communications Disorders | Near Eastern Studies |
| $\quad$ and Sciences | Nutrition and Food Science |
| Computer Science | Philosophy |
| Economics | Physics |
| English | Polish |


| French | Political Science |
| :--- | :--- |
| Geography | Psychology |
| Geology | Russian |
| German | Slavic |
| Greek | Sociology |
| Hebrew | Spanish |
| History |  |

## Bachelor of Arts Honors Degrees— with majors in:

| Anthropology Honors | Italian Honors |
| :--- | :--- |
| Biological Sciences Honors | Latin Honors |
| Chemistry Honors | Near Eastern Languages |
| Classical Civilization Honors | Honors |
| Classics Honors | Near Eastern Studies Honors |
| Economics Honors | Nutrition and Food |
| English Honors | Science Honors |
| French Honors | Philosophy Honors |
| Geography Honors | Polish Honors |
| Geology Honors | Political Science Honors |
| German Honors | Russian Honors |
| Greek Honors | Slavic Honors |
| Hebrew Honors | Sociology Honors |
| History Honors | Spanish Honors |
| Humanities Honors |  |
|  |  |
| Bachelor of Science Degrees-with majors in: |  |
| Computer Science (as a second major) |  |
| Geology |  |
| Mathematics |  |
| Nutrition and Food Science |  |
| Psychology |  |

## Bachelor of Science Honors Degrees—with majors in:

Geology Honors
Mathematics Honors
Nutrition and Food Science Honors
Psychology Honors

## Special Bachelor's Degrees in

Biological Sciences (Bachelor of Science in Biological Sciences) Chemistry (Bachelor of Science in Chemistry) Computer Science (Bachelor of Science in Computer Science) Criminal Justice (Bachelor of Science in Criminal Justice)
Medical Dietetics (Bachelor of Science in Medical Dietetics)
Physics (Bachelor of Science in Physics)
Public Affairs (Bachelor of Public Affairs)

## Special Bachelor's Honors Degrees

Bachelor of Science in Biological Sciences Honors
Bachelor of Science in Chemistry Honors
Bachelor of Science in Computer Science Honors
Bachelor of Science in Criminal Justice Honors

## BACHELOR'S DEGREE REQUIREMENTS

## Credits

Candidates for Bachelor of Applied Studies, Bachelor of Arts, Bachelor of Science, or any Special Degree must complete at least 120 credits. Certain curricula may require additional credits above this minimum. (See 'Restrictions on Credit', below.)

Honor Point Average: All students are required to maintain an over-all honor point average of $\mathrm{C}(2.0)$ for all degree work elected. See 'Honor Point Average,' page 34.

## GENERAL EDUCATION REQUIREMENTS

University-wide general education requirements and College-wide group requirements are designed to enhance students' basic skills and to promote intellectual breadth. These requirements assure minimal competence in those skills needed to succeed in college and professional life and provide a selective introduction to the increasingly broad range of academic disciplines represented at the University. They serve to emphasize the fundamental means and essential knowledge required for continuing self-education and intellectual growth.

Beginning with the Fall semester of 1987, all first-semester freshmen entering the College of Liberal Arts and all Liberal Arts students who transfer twelve or fewer credits into the College are required to satisfy both University General Education Requirements and College of Liberal Arts Group Requirements. While these two sets of requirements substantially overlap and complement each other, College Group Requirements, in several respects, supplement and modify the University program by requiring additional course work or restricting the use of certain specific courses.

All students in the College of Liberal Arts to whom these requirements apply must successfully complete the following:

## Competency Requirements

With the exception of the Intermediate Compositon component of the Written Communication competency, competency requirements for students in the College of Liberal Arts are identical to those specified in the University General Education Program, a complete description of which may be found beginning on page 20. ENG 301, 303, and 305 will NOT satisfy the College Intermediate Composition requirements; however, all other courses cited in the University General Education Intermediate Composition Requirements will apply. Competencies are required in Written Communication, Mathematics, Oral Communication, Computer Literacy, and Critical Thinking.

## Group Requirements

Group Requirements for students in the College of Liberal Arts consist of the group requirements of the University General Education Program (see page 22) modified by the additions and limitations indicated below. College Group Requirements exceed University General Education Requirements by: 1) one additional course in the natural sciences (Natural Science III), 2) one additional course in the social sciences (Social Science II), 3) one additional course in the Humanities (Cultural Studies), and 4) three courses in a foreign language, which also may be used to satisfy the University General Education Requirement in Foreign Culture.

## NATURAL SCIENCE

Physical Science as specified in the University General Education Program (see page 23) but with the following limitations: all students in the College of Liberal Arts must successfully complete one course from the fields of chemistry, physics, or physical science (a combination of chemistry and physics) with the exception of AST 201. Physical science options include: CHM 100, 102, 105, 107, 131; PHY 101, 102, 104, 213, 217, 310.

Life Science as specified in the University General Education Program (see page 23) with the exception of NFS 203. Approved courses include: ANT 211; BIO 101, 103, 105, 161; PSY 101, 102.

Natural Science III: All students in the College of Liberal Arts must elect and successfully complete one additional science course from the fields of physical anthropology, astronomy, biological sciences, chemistry, geology, nurtition and food science, physics, or psychology. Courses elected to satisfy this component of the College's Group Requirement in Natural Science must be drawn from a field other than one used to fulfill the Physical or Life Science components of the requirement. Natural Science III options consist of all courses cited in the University General Education Group Requirement in Physical Science and Life Sciencé plus AST 201; NFS 203, 221; and PSY 405. Approved courses include: ANT 211; AST 201; BIO 101, 103, 105; CHM 100, 102, 105, 107, 131; GEL 101; NFS 203, 221; PHY 101, 102, 104, 213, 217, 310; PSY 101, 102, 405.

HISTORICAL STUDIES as specified in the University General Education Program (see page 23) with the exception of HIS 287. Approved courses include: ANT 320; HIS 110, 120, 130, 140, 160, 161, 165, 195, 304, 335, 350; HUM 310; N E 368, 369; P S 353.

## SOCIAL SCIENCE

American Society and Institutions as specified in the University General Education Program (see page 23). Approved courses include: HIS 103, 105; P S 101, 103.

Social Science I as specified in the University General Education Program (see page 23). Approved courses include: ANT 210; ECO $100,101,102,180$; GEG 110, 313, 320; P S 100, 224; SOC 200, 202, 204, 330, 410; U S 200.

Social Science II as specified in the University General Education Program (see page 23). Students in the College of Liberal Arts must successfully complete two courses in this category - one from each of two different social science disciplines. Approved courses include those cited in the list of approved options for Social Science I, above.

FOREIGN CULTURE: Students in the College of Liberal Arts will satisfy the University General Education Requirement in Foreign Culture by successfully completing a three course sequence (through 201 or 211) in a single foreign language. (See Foreign Language Requirement below.)

## HUMANITIES

Visual and Performing Arts as specified in the University General Education Program (see page 24). Approved courses include: A H 100, 101, 111, 112; DNC 231; FLM 201, 202; HUM 101, 102, 103, 303; MUH 130, 132, 133, 137, 138; THR 101, 103.

Philosophy and Letters as specified in the University General Education Program (see page 24). Approved courses include: CLA 101, 210, 220; ENG 216, 217, 219, 220, 250, 272, 299, 311, 312, 314; FRE 270 (or GER 270; ITA 270; RUS 270; SPA 270); HUM 210, 211, 220, 222, 302; PHI 101, 102, 103, 104, 210, 211, 232, 350, 355, 370; P S 351, 352; RUS 365, 465; SOC 216, 219.

Cultural Studies: All students in the College of Liberal Arts must successfully complete one course from the fields of American Studies, Black Studies, Chicano-Boricua Studies Women's Studies, folklore, mythology, religious studies, inter-disciplinary courses in the humanities, or culturally-oriented courses offered in the various College departments of languages and literatures. Approved courses include: A S 201; CBS 210, 211; ENG 260, 291, 360; CLA 200; FRE 271; GER 271, 272; HUM 301; NE 200, 201; RUS 351.

Foreign Language: All students in the College of Liberal Arts (excepting those pursuing a Bachelor of Public Administration degree) must successfully complete a three-course sequence (minimum of four credits in each of the three courses) in a single foreign language. Those continuing the study of a foreign language begun in high school or at another college will be placed at an appropriate level by means of qualifying examinations administered by the various language departments of the University. The College Foreign Language Group Requirement will be considered satisfied by those students whose test scores place them beyond the intermediate (third course) level. Approved course sequences include those courses numbered 101 (110, 111), 102, and 201 in the following subject areas: ARB, ARM, FRE, GER, GRK, HEB, ITA, LAT, POL, RUS, SPA, SWA, and UKR; as well as GRK 111, 112, and 212.

Bilingual Students: The College Foreign Language Group Requirement will be considered satisfied for students who were born in and completed their secondary education in a country whose language is not English. However, no credit (through course work or by examination) will be granted for elementary- or intermediate-level courses in that language. Bilingual students who satisfy the Foreign Language Group Requirement in this manner will NOT simultaneously fulfill the University General Education Requirement in Foreign Culture.

THE UNIVERSITY AND ITS LIBRARIES as specified in the University General Education Program (see page 24).

UNIVERSITY REQUIREMENT IN AMERICAN GOVERNMENT for students enrolled prior to Fall Term 1987: See General University Information, pages 23-24.

## Proficiency in English and Mathematics

All undergraduate students who registered for the first time at Wayne State University in Fall Semester 1983 or thereafter will be required to demonstrate proficiency in English and mathematics by the time they have earned sixty semester credits towards a bachelor's degree. For full particulars, as well as requirements applicable to registrants at the University prior to and subsequent to Fall 1983, see the General Information section of this Bulletin, pages 21-24.

## Curriculum Requirements

A curriculum usually designates a general area of interest or eventual professional choice. By choosing the General Curriculum, students indicate only an intention to take a degree in one of the departments of the College or that their final academic goal has not as yet been determined. Since educational interests may change during a college career, curricula may be altered at any time by consulting an academic adviser.

Some curricula outline specific programs of study. Others are governed only by the group requirements, future major requirements and recommendations. Group, curricular, and major requirements may be modified from time to time during a student's course of study, and students should periodically consult with appropriate advisers. Descriptions of the various curricula will be found in the Undergraduate Curricula section below; see pages 202-209.

## Science Requirement for B.S. Degrees

Bachelor of Science degrees: Students who are candidates for Bachelor of Science degrees must successfully complete sixty credits in the natural sciences, computer science, advanced logic, statistics, and mathematics. Credits completed to satisfy the College Group Requirements in Natural Science may be applied to the sixty credits.

Combined Degrees: Students who are candidates for Bachelor of Science degrees in Combined Degree programs must complete all required science credits, but conditions vary as foliows: pre-dental and pre-medical students must complete a minimum of forty credits, and pre-law students a minimum of sixty credits, in the natural sciences and mathematics before entering their respective professional schools.

Special Degrees:: Students who are candidates for the Special Degrees Bachelor of Science in Biological Sciences, Bachelor of Science in Chemistry, or Bachelor of Science in Physics must fulfill the sixty-credit requirement in the natural sciences, computer science, advanced logic, statistics, and mathematics. Candidates for other Special Bachelor of Science degrees must complete the College Group Requirement in Natural Science and any additional science and mathematics courses required by the curriculum which they are following.

## Major Requirements

A major is a program of concentrated study in a department or area (often a program) within the College. Specific course requirements for majors are listed in this bulletin under each of the departments or areas of the College. Students may declare majors at any time but generally select areas of concentration during their sophomore year and formally declare majors by the beginning of their junior year. Students must complete all courses in their majors with an overall average of ' $C$ ' (2.0).

Declaration of Major: To declare a major, students should consult a departmental adviser well in advance of making a formal declaration, since the acceptance of a declared major is subject to the advice and consent of the department concerned. An up-to-date cumulative record of work completed should be obtained by the student from the Records Office and delivered to the department for its files. A 2.00 cumulative h.p.a. is required to declare a major. At the time of formal declaration, the student must obtain the signature of the department chairperson or designated representative on the major declaration form and file the form in the Liberal Arts Declaration of Major/Curriculum Office, 567 Mackenzie Hall. All courses elected or changed by the student after the declaration of a major should be approved by the department adviser.

The major must include at least twenty credits in one subject, exclusive of introductory courses and inclusive of some advanced work. No more than forty-six credits in the major subject (including introductory courses) may be counted toward a degree.

Within the above limits, each major program has specific requirements which may be modified from time to time; it is, therefore, each student's responsibility to keep informed of the current requirements in his/her major department.

For interdepartmental or field majors, the rule regarding minimum credits required in one subject is waived.

For majors which require intensive study in a particular subject, more than forty-six credits are allowed.

The major completed is part of the degree designation on the diploma.

Double Major: Students wishing to declare double majors must obtain approval from the chairpersons or delegated representatives of each department or intended major program. For students to graduate with double majors, the major requirements in both areas of concentration must be fulfilled. Students must complete all courses in both majors with an over-all honor point average of ' $C$ ' (2.0). Both majors are designated on the diploma.

Students enrolled in colleges and schools other than the College of Liberal Arts and who wish to graduate with a double major, one component of which is in a Liberal Arts curriculum, must satisfy all College of Liberal Arts Group Requirements, as well as the major requirements of the department involved.

## Minor Fields

The College of Liberal Arts offers the option of a minor. Students may choose to fulfill a minor but are not required to do so. In general, minors require eighteen to twenty-one credits. Students may not elect for minor credit courses which bear credit limitation precluding their applicability as major credit in the sponsoring department.

Students enrolled in colleges and schools other than the College of Liberal Arts and who wish to declare a minor in a Liberal Arts curriculum, may do so by satisfying the minor requirements of the curriculum involved. They need not satisfy the requirements of the College of Liberal Arts.

Students are strongly encouraged to consult with departmental advisers for course selections. The notation of the minor will appear on the transcript but not on the diploma. Declaration of the minor will be made by the student only when filing for graduation.

## Curricula and Co-Majors

(Taken in conjunction with another major which leads to a Bachelor's Degree)

Black Studies
Women's Studies
Peace and Conflict Studies

## Special Concentrations A vailable within Departments

Biological Sciences: Bio-Physics and Molecular Biology (Bachelor of Science in Biological Sciences Degree)

Speech: Communication Disorders and Sciences (Speech and Language Pathology)

## Combined Degrees and Second Degrees

A Combined Degree (B.A. or B.S.) is granted by the College of Liberal Arts in cooperation with approved schools of Dentistry, Medicine, and Law, which do not require a bachelor's degree for admission. Candidates for Combined Degrees must complete 90 credits in the College of Liberal Arts, all University requirements, all College requirements, make reasonable progress (as determined by the major department) toward completing a major, and complete satisfactorily the first year's work in an approved professional school. Students who fail to pass any course ordinarily required during the first year of professional work forfeit the right to a Combined Degree. Such cases may be reopened only after the student completes the second year of professional work.

Students who have received a Liberal Arts degree from Wayne State University or any other accredited institution may obtain a second bachelor's degree, in another academic area by registering in the undergraduate College. Graduates of Wayne State University who
have earned degrees from the College of Liberal Arts may be ranked as undergraduates by declaring new majors and indicating a desire to earn a second undergraduate degree. Graduates of other Wayne State University schools or colleges must transfer to the College of Liberal Arts. A student from another institution must be admitted to the College by the University Admissions Office.

In order to be granted second degrees, students must complete a minimum of thirty credits beyond the first degree in the College and satisfy all University, College and major requirements. Generally, no second degree will be granted in the academic area in which the first degree was earned.

## Concurrent Degrees and Double Majors

Students who have satisfied all requirements for two different major programs leading to degrees offered by the College and who have accumulated 150 or more degree credits may apply for both degrees simultaneously. However, students intending to earn concurrent degrees are required to obtain permission from the Office of the Dean prior to the accumulation of 120 degree credits. A more usual procedure for students satisfying the requirements of two different major programs is to declare a double major and graduate with one degree, in which case as few as 120 degree credits may be required. (See Double Major, above.)

## Restrictions on Credit

Maximum Credits in One Subject: Students may not count toward a degree more than forty-six credits in any one subject except for special curricula which specify additional courses in the curriculum outline.

Over-age Credits: Students attempting to complete majors after a protracted interruption in their education, or those attending the University on a part-time basis over an extended period of time, may find that some early course work is out dated. In such cases, a department may require refresher work or a demonstration that the student is prepared for advanced courses in the department.

Restrictions on Transfer Credit - Two-Year Colleges: No more than sixty-four semester credits may be transferred from two-year colleges.
-Weekend College (College of Lifelong Learning): No more than sixteen credits, which may include six credits of Independent Study, may be transferred from Weekend College. Courses transferred will not count towards fulfilling College group or major requirements.
-Labor School: A maximum of ten hours of elective credit may be granted students who have been certified as having completed the Labor School curriculum, have a letter of recommendation from the Director, and have earned sixty credits with an honor point average of at least 2.0.

Restricted Courses: Degree credit is not given for elections in restricted courses which exceed the approved limit specified below.

PROFESSIONAL COURSES: Students may elect a maximum of sixteen credits as cognate work from elected courses offered for degree credit by the several professional schools and colleges within the University. Eight of these credits may be elected with the approval of an academic adviser prior to the declaration of a major, and eight additional credits may be chosen with the approval of the major department. Where academic advisers have approved fewer than eight credits, the major department may approve credit up to the sixteen maximum credits allowed. In curricula which specifically require professional courses in excess of the maximum, additional credits may be elected.

SPECIALIZED COURSES: Unless a curriculum specifies otherwise, the maximum amount of degree credit which may be earned in certain specialized areas is limited as follows:

| Areas | maximum degree credit |
| :---: | :---: |
| Dance (approved courses) ....... | ........... 16 |
| Health | ............. 8 |
| pplied Music (including the limitation stated in the paragraph below). | ............ 16 |
| Physical Education (approved courses) ......................................... | ............. 4 |

A total of not more than four credits from the following list of courses may be counted toward a degree unless a curriculum specifically requires more extensive elections:

| MUA 280 | University Bands |
| :---: | :---: |
| MUA 281 | . University Symphony Orchestra |
| MUA 282 | .Jazz Lab Band |
| MUA 283 | Men's Glee Club |
| MUA 284 | ....Choral Union |
| MUA 285 | .... University Chorale |
| MUA 287 | ... Women's Chorale |
| MUA 288. | .. Chamber Music and Special Ensembles |
| SPR 26 | ............ Radio-Television-Film Laboratory |
| SPC 224. | ...................... Forensics Practicum |

REPEATED SUBIECTS: It is understood that degree credit will not be granted for course work in which credit has already been granted. Since similar courses may have different names at different times and at different colleges, students are advised to make sure they do not offer repeated work as credit towards a degree.

## Advanced Course Requirement

At least fifteen credits in courses numbered 300 or above must be earned.

Combined Degrees: Courses taken in the first year of professional school may be applied toward the required fifteen credits in advanced courses.

## Residence

To qualify for a baccalaureate degree in the College of Liberal Arts, a minimum of thirty credits must be earned in the College. The last thirty credits applicable to the degree, not including credit by special examination, must be completed in an undergraduate college or school of Wayne State University. Credit by special examination may not be counted as residence credit, but such credit, if earned during a semester in which the student is registered, will not be considered an interruption of residence.

In special circumstances, senior residence may be interrupted with the approval of the student's major department and the Educational Adjustment Committee; however, when the candidate has fewer than the minimum thirty credits of residence in the College of Liberal Arts, no such exceptions are permitted.

For the Combined Degree, the residence requirement must be completed in the College of Liberal Arts at Wayne State University prior to admission to the professional school.

## UNDERGRADUATE CURRICULA


#### Abstract

Students who are uncertain of procedures in curricular planning should confer with an adviser. In all curricula, majors must be declared by the beginning of the junior year.


## General Curriculum

The General Curriculum leads to the degree of Bachelor of Arts or Bachelor of Science. Although it is designed for students who plan to elect a major in a department or area which does not require a special curriculum, it is an ideal choice for entering students who have not yet decided on a plan of study.

In this curriculum, a wide choice of courses is permitted. The elections suggested below for the first two years are planned to fulfill the University General Education Requirements and the College Group Requirements, but students may vary these elections arranging a program for each semester of three to fifteen credits. The courses elected during the last two years are arranged in consultation with a major adviser.

## Suggested Elections

## First Year

## credits

American Society and Institutions ..... 0-3
Foreign Language ..... 4.8
Humanities. ..... 3.7
Natural Science ..... 3.7
Social Science. ..... $3-7$
The University and Its Libraries (UGE 100). ..... 1
Competencies/Electives. ..... $0-6$
Second Year
credits
American Society and Institutions ..... 0-3
Foreign Language ..... 4.8
Historical Studies ..... 0-4
Humanities. ..... 3-7
Natural Science. ..... 3.7
Social Science. ..... 3.7
Competencies/Electives. ..... $0-8$

## PRE-PROFESSIONAL CURRICULA

Admission to pre-professional curricula implies only that students have selected professional goals. It does not necessarily mean that students will be accepted by the corresponding professional school or college.

## Pre-Business Administration

The School of Business Administration is a professional school concerned with instruction in the theory and practice of business administration. The undergraduate program in business administration begins after students have acquired an educational foundation in the basic sciences and the arts during their freshman and sophomore years. For information concerning the minimum grade point average required for admission to the School of Business Administration; see page 49. Students complete the following courses as pre-business administration students in the College of Liberal Arts:

| Accounting |  |
| :---: | :---: |
| ACC 301 (3 cr.).........Prereq: MAT 150; ECO 101,102. |  |
| ACC 302 (3 cr.).........Prereq: ACC 301 and ALL ACC 301 prerequisites. |  |
| Business Computing |  |
| ACC 263 (2 cr.)......... Prereq: none. |  |
| Business Law |  |
| ACC 351 (3 cr.) ......... Prereq: sophomore standing. |  |
| Economics |  |
| ECO 101 ( 3 cr )..........Note: Either ECO 101 or 102 will satisfy the basic |  |
| ECO 102 (3 cr.) | Social Science Group Requirement. |
| English |  |
| ENG 102 (4 cr.) $\qquad$ Prereq: placement examination or ENG 101. ENG 301 ( 3 cr .) $\qquad$ Prereq: ENG 102 and English Proficiency Exam. |  |
| Mathematics |  |
| MAT 150 (3 cr.) $\qquad$ Prereq: Qualifying Examination. or |  |
| MAT 180* (4 cr.).......Prereq: Qualifying Examination. |  |
| Philosophy |  |
| PHI 105 (3 cr.) ..........Prereq: none. |  |
| Psychology |  |
| PSY 101 ( 4 cr )...........Note: PSY 101 will satisfy the requirement for or a Natural Science laboratory and the Life Science |  |
| PSY 102 (3 cr.) | Group Requirement. |
| Speech |  |
| SPB 101 (2 cr.).........Prereq: none. |  |
| Statistics |  |
| FBE 330 ( 3 cr .)..........Prereq: MAT 150 or 180. |  |
| ECO 410 (3 cr.). | Prereq: ECO 102; MAT 150 or 180 or equiv. |

## Pre-Dentistry

Satisfactory completion of University General Education Requirements, College Group Requirements, a major field, and the basic sciences listed below lead to the bachelor's degree and qualify students for consideration by most schools of dentistry.
credits
Biology or Zoology with laboratory ..... 12-16
Chemistry: Inorganic, including qualitative analysis, and lab ..... 9-11
Chemistry: Organic with laboratory ..... 8-10
English ..... 8-12
Physics with laboratory ..... 8-10

Recommended electives include psychology, sociology, biochemistry, embryology, and statistics. Because different schools of dentistry may require credits in some or all of these subjects, students are advised to become familiar with Admission Requirements of U.S. and Canadian Dental Schools, a brochure which may be ordered from the American Association of Dental Schools, 1625 Massachusetts Avenue, N.W., Washington, D.C., 20036.

[^35]Pre-Education - See pages 83 and 208.

Pre-Engineering - See pages 12-113.

## Pre-Law

Since the requirements for admission to law schools vary from school to school, students should become familiar with the requirements of the school they plan to enter.

For admission to Wayne State University's Law School, applicants should have a bachelor's degree from an accredited college with a strong honor point average. Although no specific courses are required, the faculty of the Law School recommends a strong background in English, with emphasis on grammar and composition, and in the social sciences. Within these fields, the choice of courses should be made in consultation with an academic adviser in the University Advising Center. The following is a suggested list of courses: Economics 101, 102, 320; four courses in English; History 105, 204, 205, 516, 517, 561; Philosophy 101, 185; Political Science 101, 201, 304, 510, 511; Psychology 101; Sociology 200, 382. An introductory course in accounting is also recommended. For students interested in the practice of law in commercial, corporate, and tax fields, the business administration curriculum may provide a good background.

Law School Admission Test: Each applicant for admission is required to take the Law School Admission Test given by the Educational Testing Service, Princeton, New Jersey. This test is given five times a year in Detroit and at one hundred or more other examination centers located throughout the country. Application blanks and additional information may be obtained from the Testing and Evaluation Office, Room 343, Mackenzie Hall.

## Pre-Medicine and Pre-Osteopathic Medicine

Satisfactory completion of University General Education Requirements, College Group Requirements, a major field, and the basic sciences listed below lead to the bachelor's degree and qualify a student for consideration by most schools of medicine and osteopathic medicine.

creditsBiology or Zoology with laboratory
Biology or Zoology with laboratory.................................................................... 12-16
Inorganic Chemistry (including qualitative analysis) with laboratory..................... 9-11
Organic Chemistry with laboratory ...................................................................... 8-10
Physics with laboratory..................................................................................... 8-10
English. 8-12

Recommended electives include psychology, sociology, biochemistry, embryology, and statistics. Because different schools of medicine may require credits in some or all of these subjects, students are advised to become familiar with Medical School Admission Requirements, a brochure which may be ordered from the Association of American Medical Colleges, One Dupont Circle, N.W., Washington, D.C., 20036. The admission requirements of specific schools of osteopathic medicine are available from the American Association of Colleges of Osteopathic 6110 Executive Blvd., Suite 405, Rockville, Maryland 20852

Wayne State University's School of Medicine encourages students to fulfill degree requirements by selecting courses which will contribute significantly to a broad cultural background and by choosing a major in which one is interested. The Committee on Admissions is influenced by the scholarly approach to education, not by the area in which one concentrates.

## Pre-Medical Technology

The program leading to a Bachelor of Science degree in Medical Technology fulfills the requirements for medical technology education of the Committee on Allied Health Education and Accreditation. Graduates of Wayne State University with the degree Bachelor of Science in Medical Technology are eligible to take a national certification examination in Medical Technology.

Admission to the junior year professional curriculum in the College of Pharmacy and Allied Health Professions is competitive and selective. Applications for admission to this program must be submitted to the Department of Medical Technology by April 15 of the year in which a student wishes to enter the professional program. The professional program begins in September only.

The courses listed below include pre-professional requirements and the University General Education Requirements (see page 20), all of which must be completed prior to admission to the professional curriculum.

| First Year |  |
| :---: | :---: |
|  | Credits |
| B10 101 - (LS) Basic Biology 1 |  |
| CHM 105 or CHM 107 |  |
| - (PS) Introductory Principles of Chemistry.................................... 6 |  |
| -(PS) Principles of Chemistry 1................................................ 4 |  |
| CHM 108 - Principles of Chemistry 11........................................................ 5 |  |
| CSC 101 - (CL) Introduction to Computing .............................................. 3 |  |
| ENG 102 - (BC) Introductory College Writing............................................. 4 |  |
| M T 208 - Medical Technology Seminar ................................................... 1 |  |
| MAT 180 - Elementary Functions.......................................................... 4 |  |
| SPB 101 - (0C) Oral Communication: Basic Speech ........................................ 2 |  |
| UGE 100-(GE) The University and its Libraries .......... |  |

Second Year

B10 287 - Anatomy and Physiology ............................................................... 5

CHM 224 - Organic Chemistry I...................................................................... 4
CHM 510 - Survey of Analytical Chemistry................................................................
ENG 303 - (IC) Writing the Research Paper ...................................................... 3


* PHI 105 - (CT) Critical Thinking .................................................................... 3
* P S 101 - (A) American Government.............................................................. 3

Humanities electives ................................................................................... 6
Foreign Culture elective............................................................................... 3


## - Cytotechnology Concentration

The program leading to the Bachelor of Science degree in Medical Technology with a concentration in cytotechnology fulfills the requirements for cytotechnology education set forth by the Committee on Allied Health Education and Accreditation in collaboration with the American Society of Cytotechnology. Graduates from Wayne State University with this degree are eligible to take a national certification examination in cytotechnology.

Admission to the junior year professional curriculum in the College of Pharmacy and Allied Health Professions is competitive and selective. Applications for admission to the cytotechnology program must be submitted to the Department of Medical Technology by April 15 of the year in which a student wishes to enter the professional curriculum. The professional program begins in September only.

The courses listed below include pre-professional requirements and the University General Education Requirements (see page 20), all of which must be completed prior to admission to the professional curriculum. Students transferring into Wayne State University are requested to
contact the Department of Medical Technology (577-1386) for their recommended course sequence format.

## First Year

B10 101 - (LS) Basic Biology I
Credits
4
B10 287 - Anatomy and Physiology .....  5
CHM 105 or CHM $107{ }^{1}$
-(PS) Introductory Principles of Chemistry .....  6
-(PS) Principles of Chemistry I .....  4
CHM 108 - Principles of Chemistry II. .....  5
ENG 102 - ( $B C$ ) Introductory College Writing .....  4
MAT 180 - Elementary Functions ..... 4
PHI 105 - (CI) Critical Thinking. ..... 3
SPB 101 - (OC) Oral Communication: Basic Speech .....  2
UGE 100 - (GE) The University and Its Libraries .....  1

## Second Year

B10 102 - Basic Biology II .....  .4
B1O 220 - Introduction Microbiology. .....  .4
BIO 271 - Comparative Vertebrate Zoology .....  .4
CHM 224 - Organic Chemistry I. .....  4
ENG 303 - (IC) Writing the Research Paper .....  3
HIS $110-(H C)$ The Ancient World .....  3
P S 101 - (AI) American Government. .....  3
Humanities Electives .....  .6
Foreign Culture Elective. .....  3

## Pre-Mortuary Science

Wayne State University offers a three-year curriculum leading to a certificate in mortuary science as well as a four-year Bachelor of Science degree program in this area. Before admission to the University's Department of Mortuary Science for the third or professional year, the student must have completed with a ' C ' average or better at least fifty-two of the sixty credits required in pre-professional courses, including the required subjects listed below.

| First Year |  |
| :---: | :---: |
|  | credits |
| B10 101-(LS) Basic Biology I |  |
| MAT 180-Elementary Functions. | $\cdots$ |
| ECO 101-(SS) Principles of Macroeconomics.... |  |
| ENG 102-(BC) Introductory College Writing. |  |
| BIO 102-Basic Biology II. |  |
| PSY 101 or PSY 102 |  |
| -(LS) Introductory Psychology. | 4 |
| -(LS) Elements of Psychology..... |  |
| ENG 301 or ENG 303 |  |
| -(IC) Intermediate Writing |  |
| -(IC) Writing the Research Paper ... |  |
| ECO 102-(SS) Principles of Microeconomics. | 4 |
| UGE 100-(GE) The University and Its Libraries |  |

## Second Year

CHM 105 credits

CHM 105 or CHM 107
-(PS) Introductory Principles of Chemistry. .....  6
-(PS) Principles of Chemistry I .....  4
SPB 101-(0C) Oral Communication: Basic Speech .....  2
CSC 101 or CSC 102
-(CL) Introduction to Computing. .....  3
-Computer Science 1 ..... 4
ACC 301-Elementary Financial Accounting Theory. .....  4
PSY 260-Psychology of Social Behavior .....  .4
${ }^{1}$ A qualifying examination in high school chemistry is a prerequisite ..... to

electing CHM 107.

[^36]CHM 108-Principles of Chemistry II .....  5
PHI 105 or PHI 232
-(CT) Critical Thinking. .....  3
-(PL) Introduction to Ethics .....  .4
P S 101-(AI) American Government. .....  4

Students who register in the College of Liberal Arts with the intention of completing the requirements for admission to the Department of Mortuary Science should consult with the staff of the department at 627 W. Alexandrine as early as possible; phone: 577-2050.

## Pre-Nursing - See page 353.

## Pre-Occupational Therapy

The degree Bachelor of Science in Occupational Therapy is offered in the College of Pharmacy and Allied Health Professions. The program is accredited by the Committee on Allied Health Education and Accreditation of the American Medical Association in collaboration with the American Occupational Therapy Association and prepares students to take the national certification examination.

An application for the professional program in occupational therapy must be submitted to the Occupational Therapy Department by February 15 of the year in which a student wishes to enter. The professional program begins during the summer term. A minimum of sixty-five semester credits is required for admission. Applicants must have an overall honor point average of 2.5 as well as a 2.5 average in the natural sciences and behavioral sciences that are required for admission. For information and an application form, contact the Department of Occupational Therapy at 577-1435.

The following curriculum is required of all candidates for subsequent admission to professional study in the Department of Occupational Therapy.
PREPROFESSIONAL PROGRAM Credits
AED 526 - Methods and Materials: Wood, Metal, and Plastic .....
B10 101 - (LS) Basic Biology I .....
BIO 287 - Anatomy and Physiology .....  5
CHM 102 - (PS) General Chemistry I ..... 4
CSC 100 - (CL) Introduction to Computer Science .....  3
ECO 101 - (SS) Principles of Macroeconomics .....
ENG 102 - (BC) introductory College Writing. ..... 4
ENG 301 - (IC) Intermediate Writing .....  3
MAT 180 - Elementary Functions ..... 4
0 T 205 - Therapeutic Activities. .....
OT 320 - Life Tasks .....  2
P S 101 - (Al) American Government. ..... 4
PHI 105 - (CI) Critical Thinking .....  .3
PHY 213 - (PS) General Physics .....  .4
PSY 102 - (LS) Elements of Psychology ..... 3
PSY 331 - Abnormal Psychology ..... 4
SOC 200 - (SS) Understanding Human Society ..... 3
SPB 101 - (OC) Oral Communication: Basic Speech ..... 3
SPC 520 - Group Communication and Human Interaction. .....  .3
UGE 100 - (GE) The University and its Libraries. ..... 1Total: 65
General Education Requirements: Candidates for the bachelor's degree must complete twelve credits in the following areas, to satisfy the remaining University requirements in general education (see page 20). While requirements in English, mathematics, and American government are fulfilled by courses cited in the preprofessional program above, the following areas are also required:

[^37]Foreign Culture (FC).............................................................................................. 3
Visual and Performing Arts (VP)............................................................................. 3
Philosophy and Letters (PL) ................................................................................... 3
It is expected that students will complete these requirements before entry into the professional program.

## Pre-Optometry

Satisfactory completion of University General Education Requirements, College Group Requirements, a major field, and the courses listed below lead to the bachelor's degree and qualify a student for consideration by most schools of optometry. Although some schools will accept students who have completed only two years of undergraduate work, preference is given to those who have earned the bachelor's degree.


Recommended electives include biochemistry and social sciences. Information about specific schools is available from the Association of Schools and Colleges of Optometry, 6110 Executive Blvd., Suite 514, Rockville, Maryland 20852.

## Pre-Pharmacy

Wayne State University's College of Pharmacy and Allied Health Professions offers a Bachelor of Science degree in pharmacy. Completion of program requires a minimum of five years. Students are registered for their first two years in the College of Liberal Arts (or some other accredited college) in which they must complete the courses listed below (or their equivalents) with grades of ' $C$ ' or better.

Admission to the first year Pharmacy curriculum in the College of Pharmacy and Allied Health Professions is competitive and selective (see Pharmacy Admission Requirements, pages 365-366). Students are admitted only for the fall semester.

Pre-pharmacy courses taken under the direction of the College of Liberal Arts:

## First and Second Years - Preprofessional Core

CreditsBl0 101 - (LS) Basic Biology ..... 4
B10 220 - Introduction to Microbiology. .....  .4
CHM 107-(PS) Principles of Chemistry I .....  4
CHM 108 - Principles of Chemistry II .....  5
CHM 224 - Organic Chemistry I. ..... 4
CHM 226 - Organic Chemistry II .....  4
CSC 101 - (CL) Introduction to Computing ..... 3
ECO 100 - (SS) Survey of Economics ..... 4
ENG 102 - (BC) Introductory College Writing .....  4
ENG 301 - (IC) Intermediate Writing ..... 3
MAT 201 - Calculus 1 ..... 4
PHY 213 - (PS) General Physics .....
PHY 214 - General Physics ..... 4
PS 101 - (Al) American Government .....  .4
(These requirements must be completed by the end of the Spring/Summer Term of the year for which admission is sought.

Exceptions may be made in extraordinary cases in which application of these requirements constitutes a great injustice.)

General Education Requirements: Students must elect additional liberal arts courses, including fulfillment of the University General Education Requirements (see page 20). Some pre-pharmacy courses, indicated by parenthetical prefixes to course titles in the list above, fulfill General Education Requirements. To complete the General Education Program, students must take one course in each of the following areas (contact Pharmacy Registrar for specific course recommendations):


## Pre-Physical Therapy

The program leading to the Bachelor of Science in Physical Therapy is offered by the College of Pharmacy and Allied Health Professions of Wayne State University in cooperation with the College of Liberal Arts and the School of Medicine.

The first two years are taken in the College of Liberal Arts. It is recommended that students interested in the professional program in physical therapy have the following high school courses: biology, chemistry, language, physics, geometry, and intermediate algebra. Freshmen and transfer students may obtain application forms for admission to the College of Liberal Arts from the Office of Admissions of the University. Students who already hold an undergraduate degree are eligible to receive a second bachelor's degree.

The professional program requires two and one-half academic years. Students must apply to the Department of Physical Therapy for information and application forms. Application must be received by January 15 of the year in which a student wishes to enter the professional curriculum. The professional program begins each year in the spring/summer semester only. Only thirty-six students are accepted. Students admitted to the program must have completed all prerequisite courses or their equivalents, have a minimum grade point average of 2.8 , be in good health, and possess the personal qualifications necessary for the professional responsibilities of a physical therapist. All applicants to the professional program are required to take the Allied Health Professions Admission Test (AHPAT) and a personal interview may be required.


BIO 101 - (LS) Basic Biology I.........................................................................................................

Advanced Biology (B1O 271 recommended).....................................................5
CHM 107 or CHM 105
-(PS) Principles of Chemistry I ........................................................ 4
-(PS) Introductory Principles of Chemistry.......................................... 6
BCH 101 or CHM 103

- Introductory Biochemistry (strongly recommended)............................. 2
- General Chemistry II........................................................................ 4

ENG $102-(B C)$ Introductory College Writing.................................................... 4
ENG 301 or ENG 303

- (IC) Intermediate Writing .............................................................................
- (IC) Writing the Research Paper ...................................................... 3
* Can be waived by passing a competency examination; Oral

206 College of Liberal Arts
Humanities elective. .....  3
MAT 180 - Elementary Functions .....  4
Introductory statistics (PSY 410 or EER 763 or PSL 767 suggested). .....  4
PHY 213 -(PS) General Physics .....  4
PHY 214 - General Physics .....  4
PSY 101 - (LS) Introductory Psychology .....
Psychology elective. .....  .4
Human development (PSY 240 or PSY 549). ..... 3-4
Political Science (P S 101 or P S 103 or HIS 103, or HIS 204 and
HIS 205, or HIS 516 and HIS 517) ..... 4.8
Electives. .....  3

## Pre-Radiation Therapy Technology

Radiation Therapy Technology is a health care discipline which utilizes ionizing radiation for the treatment of malignant diseases. The Bachelor of Science program prepares students for the technical, theoretical and psychological aspects of the job.

This program requires four years of study: two years of pre-professional courses and two years of professional courses, comprising a minimum of 133 credits. Upon completion of the program, students are eligible to take the national certification examination administered by the American Registry of Radiologic Technologists.

The pre-professional program is offered by the College of Liberal Arts. Application for admission to the professional program should be made in the sophomore year, and a completed application must be submitted by April 15 for the following year. Exceptions to this application deadline require approval by the Chairperson, Department of Radiation Technology.

Application forms and procedures can be obtained from the University Advising Center (577-2680) or the Department of Radiation Technology (577-1137). Students should refer to the requirements for application to the professional program as listed in this bulletin under the Department of Radiation Technology, College of Pharmacy and Allied Health Professions (page 396). Students are admitted to the professional curriculum by the College of Pharmacy and Allied Health Professions in the fall semester of each year.

Students in the pre-professional program are encouraged to contact the Department of Radiation Technology early in the curriculum for career counseling and scheduling a visit to a clinical radiation therapy facility. Course counseling for the pre-professional program taken in the College of Liberal Arts is provided by the University Advising Center.

High school students planning to enter this program are urged to enroll in as many high school English, mathematics, and laboratory science courses as possible. Courses in computer scuence and typing are also highly recommended. This will provide students with the best background for successful completion of the college requirements.

## First and Second Years

B10 101 - (LS) Basic Biology I .....  4
credits
B10 102 - Basic Biology II .....  .4
B10 271 - Comparative Vertebrate Zoology ..... 5
CHM 102 - General Chemistry I.
CHM 103 - (PS) General Chemistry II .....  4
CSC 100 or CSC 101

- (CL) Introduction to Computer Science. .....  3
- (CL) Introduction to Computing .....  3
ENG 102 - ( $B C$ ) Introductory College Writing. .....  .4
ENG 301 - (IC) Intermediate Writing .....  3
MAT 180 - Elementary Functions. .....  4
PHI 105 -(CI) Critical Thinking .....  .3
PHY 213 -(PS) General Physics ..... 4
PHY 214 - General Physics .....  .4
P S 101 - (AI) American Government .....  .4
PSY 101 - (LS) Introductory Psychology .....  .4
PSY 230 - Psychology of Adjustment .....  4
SPB 101 - (OC) Oral Communication: Basic Speech .....  3
UGE 100 - (GE) The University and its Libraries .....  .1
* Foreign Culture Elective .....  3
* Historical Studies Elective .....  3
* Humanities Electives .....  6
Total: 74

With the exception of the Writing-Intensive course in the major field, and the Social Science Group Requirement, all University General Education Requirements and pre-professional course requirements must be completed prior to admission to the professional program.

The Allied Health Admissions Test must be taken not later than March of the year in which the student wishes to apply.

## Pre-Social Work

The School of Social Work offers opportunity for study at the undegraduate level to prepare students for practice in the profession of social work. Sixty credits of course work or equivalent at the freshman and sophomore levels must be distributed according to the following pattern as an admission requirement to the professional program in the junior and senior years.
A. Social Sciences: The following distribution of courses is required.

1. (SS) Anthropology-3-4 credits*
2. (SS) Economics-3 credits (Principles of Macroeconomics, ECO 101, recommended)
3. History-3 credits (Not HIS 130)
4. (AI) Political Science- $3-4$ credits
5. (SS) Sociology-two courses
B. Natural Sciences: The following distribution of courses is required, including a laboratory course in one of the subject areas designated below.
6. (LS) Biology-3-4 credits
7. Psychology-three courses. Field practicum courses do not meet this requirement.
8. (PS) One course ( $3-4$ credits) to be selected from the following: Physical Science, Chemistry, Geology, Astronomy.
C. Humanities: The following distribution of courses is required.
9. (PL) Philosophy -3 credits (excluding logic)
10. (VP) Humanities ( 3 credits).
D. English: The following distribution of courses is required.
11. (BC) Freshman Composition-4 credits
12. (IC) English Elective ( 200 level or above)- 3 credits
E. (OC) Basic Speech-2-3 credits

## $F$. Electives

Additional Competency Requirements and Group Requirements must be satisfied either prior to or subsequent to admission to the professional program in social work.

The professional program begins in either September or January. Deadlines for applying for admission to the professional program are March 31 and August 31, respectively.

For details about regularly scheduled informational meetings concerning the professional program, please contact the School of Social Work at 577-4409.

The professional program leading to the Bachelor of Social Work consists of four semesters of study in the junior and senior years. It is required that the student enroll in the entire professional component during any one semester. Usually the four-semester professional program of class and field work requires full-time study extending over two successive academic years.

## Pre-Veterinary Medicine

Satisfactory completion of University General Education requirements, College Group Requirements, a major field, and the courses listed below lead to the bachelor's degree and qualify a student for consideration by the College of Veterinary Medicine at Michigan State University.


Other requirements in social sciences and humanities may be satisfied by meeting the Liberal Arts Group Requirements. Recommended electives include: comparative vertebrate zoology, microbiology, statistics, and psychology.

## TEACHER PREPARATION CURRICULA

Health examinations: At the beginning of the freshman year, all students entering the University who are considering teacher education work should take the health examination. Students may wish to avail themselves of the services of the Speech and Hearing Clinic if they feel that they have defects which might impair their effectiveness as teachers. A health re-check is required at the time of admission to the College of Education.

Most students preparing to teach in one of the fields listed below will register in the College of Liberal Arts for their freshman and sophomore years and transfer to the College of Education at the beginning of their junior year. During the first two years, they will see the academic advisers in the University Advising Center for general counseling. Application for entrance to the College of Education should be submitted after the completion of fifty-three credits.

[^38]
## Combined Curriculum for Academic Studies

## This curriculum leads to a bachelor's degree and a Michigan Secondary Provisional Certificate.

The Combined Curriculum for Secondary Teaching is offered in cooperation with the College of Education and prepares students for teaching major and minor subjects in the secondary school. In this curriculum, students take the first two years of work in the College of Liberal Arts. Courses in the third and fourth years are taken concurrently in Education and Liberal Arts. In electing courses during the first two years, students should acquire a broad general education while simultaneously electing courses that may be required by their future major department.

Students interested in this program should consult an academic adviser who will supply a curriculum outline, provide guidance, and direct them to the adviser in the major at the beginning of the junior year. Students may also see the Division of Academic Services, Room 489, College of Education, at any time during the first two years for consultation on professional programs they may be planning to pursue.

Degree in the College of Liberal Arts: Students remain registered in the College of Liberal Arts and elect departmental majors at the beginning of the junior year. Students then apply to the College of Education for official admission to the combined curriculum for secondary teaching and must be approved by the College of Education as candidates for teacher certification. During junior and senior years, student program requests will be signed by both a College of Liberal Arts major adviser and by the appropriate adviser in the College of Education.

Degree in the College of Education: Students apply for admission to the College of Education after completing fifty-three credits in course work, transfer to that College at the beginning of the junior year, and follow the degree requirements of the College of Education.

## K-12 Majors

Students wishing to major in Art Education should see an adviser in Room 163, Community Arts Building.

Students wishing to major in Physical Education should see an adviser in Room 264, Matthaei Building.

Students wishing to major in music education should consult an adviser in Room 105, Schaver Music Building.

## Secondary Teaching

Students planning to teach English, foreign language, mathematics, science, social studies or speech on the secondary level should complete in their first two years the following general education requirements:

University General Education Requirements: see pages 20-27.
College of Education general requirements: PSY 101, HEA 231 (or equivalent).

English Speech Group: four courses, including ENG 102, a 200-level English course, SPB 101 and an English or speech elective.

Social Studies Group: four courses from anthropology, economics, geography, history, political science, or sociology, including the American Society and Institutions requirement.

Science/Mathematics Group: three courses, one from each of the following areas: life science; physical science; and mathematics (MAT 150
or 180 ).
Pre-secondary students should also be electing courses in their proposed teaching major and minor. Major/minor worksheets may be obtained from the University Advising Center, or in Room 489, Education Building.

## Vocational Education Programs

These programs are designed to prepare teachers for vocational education programs in business and distributive education, home economics education, family life education, and industrial education. Satisfactory completion leads to secondary certification in any one of the above curriculum areas. Those students who have also completed the required work experience coupled with the appropriate major or minor receive vocational endorsement in a specific occupational area. Those students who major in Industrial Arts do not receive vocational endorsement.

Students who major in any of the industrial-technical areas usually complete their major at a community college. They also have the option of taking the Michigan Occupational Competency Examination if they feel that their experiences in a trade or technical area have given them the knowledge and skills required of a specialist. Successful completion of the Michigan Occupational Competency Examination meets the requirements of a major area for certification purposes.

Students pursuing a degree in vocational education are eligible for admission to the College of Education as freshmen. During the first two years, vocational students acquire a broad general education; courses required by the future major curriculum area are also taken. During this period, students are encouraged to consult with an adviser in their major in the College of Education. Students who are completing their major at a community college are particularly encouraged to consult with such an adviser. For additional information regarding professional education and the major, refer to the College of Education section of this bulletin.

Teaching Minor: One minor of twenty-four credits is required. The recommended minor for all vocational majors is social science (i.e., anthropology, economics, geography, history, political science, sociology and psychology). Students who wish to select a minor in an area other than social science should discuss their interests with a major adviser.

## Elementary Teaching

Pre-elementary majors should include in their first two years' work the following requirements:

University General Education Requirements: see pages 20-27.
College of Education general requirements: PSY 101, HEA 231 (or equivalent), and MAT 111.

English/Speech Group: ENG 102, a 200 level English course and SPB 101.

Social Studies Group: four courses: P S 101 or 103, PSY 101, GEG 110 and HIS 204 or 205.

Science Group: three courses, including at least one course from the life sciences and one course from the physical sciences. One of the three courses must include a laboratory section.

Pre-elementary students should also elect courses in their proposed teaching majors and minors. Major/minor worksheets may be obtained from the University Advising Center, or in Room 489, Education Building.

## Special Education

The curriculum in special education prepares teachers for work with exceptional children at all levels in day schools, residential institutions and diagnostic-clinical centers. The undergraduate majors are: visually impaired, mentally impaired, and speech impaired.

In the first two years of work, students should take courses to establish a twenty-four credit minor and the following general education requirements:

University General Education Requirements: see pages 20-27.
College of Education general requirements: PSY 101, HEA 233, MAT 111.

Special Education requirements: BIO 105 and 287 and SED 600 are required of all students prior to admission to the College of Education.

English/Speech Group: ENG 102, a 200-level English course and SPB 101.

A Planned (non-teaching) minor must be completed prior to admission to Education. Required courses include: PSY 230, SOC 200, ANT 210, P S 101, ELE 320, AED 512, and SED 600.

Students can obtain major/minor worksheets for Special Education in Room 489, Education Building.


## 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 20 . The following additions and amendments apply to the College of Liberal Arts.

## Attendance

Regularity in attendance and performance is necessary for success in college work. Attendance requirements will be announced by instructors at the beginning of each course.

## Normal Program Load

The requirements for graduation are based upon an average program of fifteen credits per semester for eight semesters. A normal load should not exceed eighteen credits.

Because two hours of outside preparation are normally expected for each class hour, a fifteen credit program calls for approximately forty-five hours of class attendance and study per week. Students who undertake such a program should expect to give it their full time and energy. A few hours of employment a week may be safely added by capable students.

## Extra Credits

Extra credits are credits taken in excess of the normal load of eighteen credits. Students with 3.0 (or above) honor point averages may take more than eighteen credits when their proposed programs carry the written approval of the adviser and the Dean.

## Retention of Records

Term papers and examinations shall either be returned to students or retained by the instructor for a minimum of six months. 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.

## Study Abroad

For more than a quarter of a century, the University has provided its students with the opportunity to study abroad for a year in order to experience the cultural, academic, and social life of a foreign country. Students in good academic standing may take, with the approval of their major departments, their junior year's work in Germany under the Junior Year in Munich or Freiburg Program. Four semesters of college German or the equivalent with an average of $B$ or better are prerequisite. Participants will earn credit for one academic year (September through July) as fully enrolled (matriculated) students at the cooperating Universities of Munich or Freiburg. Interested students should contact the Junior Year offices at 401 or 471 Manoogian, or phone 577-4605.

The Wayne at Gordes Summer Camp Program offers up to twelve credits in advanced French, which may be earned during a six-week summer session in the Renaissance village of Gordes in the south of France. French 310 or its equivalent is the prerequisite. Interested
students should contact Professor Donald Spinelli at 467 Manoogian, or telephone 577-6241.

Wayne in Italy is a summer program for beginners in Italian as well as for advanced students. Up to twelve credits may be earned during a six week session in Bologna, Italy. Interested students should contact Professor Andrea di Tommaso, 415 Manoogian, or telephone 577-6247.

Since 1980 Wayne has had an exchange ageement with the Jagiellonian University in Krakow, Poland. Up to nine students are selected for a six week summer program; students may earn three to four credits in Polish language and culture courses. Students selected to participate in this exchange program are responsible only for their travel costs; all tuition costs and room and board are covered by the exchange agreement. Interested students should contact the Polish Studies Program, 443 Manoogian, 577-3024.

Regarding other opportunities for study abroad, students should contact the University Advising Center, 577-2680.

## Honors Program

The Honors Programs of the College of Liberal Arts are designed for highly motivated students with superior abilities. Qualified students may elect Honors Program courses, honors sections of departmental courses, honors tutorial courses, honors option courses and honors independent studies offered through the College of Liberal Arts. Liberal Arts students, in consultation with a faculty honors adviser, may pursue a course of study that leads to graduation with University Honors (see page 28). Admission into a departmental honors program is at the discretion of each department. Departmental honors programs vary from one department to another, but they all require fifteen credits in honors designated course work, including independent research, a senior honors thesis or essay, and at least one 400 -level seminar offered through the College Honors Program. Honors-designated course work in any department of the College can be included in the required fifteen honors credits. A student who satisfactorily completes a departmental honors program will graduate with honors in that department. A student who completes both the University Honors Program and a Departmental Honors Program will receive dual recognition on the transcript and diploma.

Other features of the Honors Programs of the College include special faculty advising, the waiver of certain prerequisites, guest lectures, participation in regional and national meetings of the National Collegiate Honors Council, an honors study lounge, and an opportunity to participate in the Honors Student Association.

Students who are interested in the Liberal Arts Honors Program should contact the Honors Director at 577-3030. The Honors Program offices are located at 258 Mackenzie Hall. For information regarding courses, see pages 269-270.

## 'A Grade' - Accelerated Graduate Enrollment

Some departments of the College permit academically superior majors to petition for admission into the College's 'A Grade' program. 'A Grade' procedures enable qualified seniors in the College of Liberal Arts to enroll simultaneously in the undergraduate and graduate programs of the College and apply a maxium of fifteen credits towards both a bachelor's and master's degree in the major field. Students electing 'A Grade' programs may expect to complete the bachelor's and master's degrees in five years of full-time study.

An 'A Grade' applicant may petition the Graduate Committee of the major department for acceptance into the program no earlier than the
semester in which ninety credits are completed. Applicants must have an overall h.p.a. at the 'Cum Laude' level (approximately 3.4) and not less than a $3.6 \mathrm{~h} . \mathrm{p.a}$. in the major courses already completed. If the student's petition is accepted, the student's faculty adviser shall develop a graduate Plan of Work, specifying the 'A Grade' courses to be included in subsequent semesters.

For more details about the 'A Grade' program, contact the Director of the College's Honors Program (577-3030), the chairperson of the major department, or the Graduate Office of the College of Liberal Arts (577-2690).

## Phi Beta Kappa

Phi Beta Kappa, the Nation's oldest honor society, was founded at the College of William and Mary in Virginia on December 5, 1776. The one hundred and fifty-sixth chapter of the society, Gamma of Michigan, was installed at Wayne State University on January 16, 1953 under a charter granted to the College of Liberal Arts by the United Chapters of Phi Beta Kappa. Membership in the chapter is restricted to its charter members and to those members of the junior and senior classes of the College of Liberal Arts who have been elected to membership by the chapter and who have formally accepted election and participated in initiation ceremonies of this or some other cooperating chapter. In addition, all members of the University staff who have been elected to membership by other chapters of Phi Beta Kappa automatically become affiliated members of the local chapter for the duration of their stay at the University.

Election to membership is restricted to students with at least two academic years of residence in the College of Liberal Arts, and is based not only on high scholarship and integrity, but also on breadth and depth of program. Students who wish further information are urged to consult with the secretary of the chapter concerning requirements for membership.

## Graduation With Academic Distinction

Candidates eligible for the bachelor's degree may receive a special citation placed on their diplomas under the following circumstances: The designations of 'summa cum laude,' 'magna cum laude,' and 'cum laude' will be conferred upon graduating students whose cumulative honor point averages at Wayne State University fall within approximately the upper five per cent, the next five per cent, and the next ten per cent of the senior class, respectively. The honor points used to identify the lower limits for each designation will be based upon the honor points attained by seniors at these percentile levels during the preceding academic year. Only students who have earned sixty or more credits at Wayne State University are eligible to graduate with one of the above distinction citations.

## Dean's List

The Dean's List of academically superior students is compiled each fall and winter term based on the following criteria: A 3.6 honor point average for students registered for full-time programs of twelve credits or more which contribute to the honor point base; A 4.0 honor point average for students registered for between six and eleven credits. Students who receive marks of ' $I$ ' or ' $W$ ' or ' $X$ ' and grades of ' $N$ ' or ' $U$ ' are not eligible. (For explanation of these marks and grades, see page 33.)

## Academic Probation

Low Honor Point Average: Student's whose honor point average falls below 2.0 will be placed on academic probation and may be required to obtain permission from the Office of the Dean before registering. Such permission will be granted only after an interview during which some assurance is given that previous causes of failure have been ameliorated.

Lack of Progress: Students whose records reveal an excessive number of 'Withdrawal,' 'Incomplete' and ' X ' marks and who, as a result, make little or no progress towards earning a degree, will be placed on academic probation. Such students may be required to confer with an academic adviser in order to register. Students on academic probation are encouraged to use support services of the University.

Restriction: While on academic probation, a student may not represent the College in student activities.

Removal of Academic probation: Probation will be removed at the end of any term in which an over-all average of ' C ' or better for all degree work taken in the College or earned as cognate credit is achieved.

## Exclusion

Low Honor Point: Students on academic probation who incur serious deficiencies or fail to raise their honor point averages within a reasonable period of time, may be excluded from the College. Such an exclusion will be reviewed by the Probation Committee and the Dean upon the request of the student.

Lack of Progress: After having conferred with an academic adviser, students who make little or no progress towards a degree may be excluded from the College.

Readmission: After one year of exclusion, students may apply for readmission to the College. The decision to readmit will be based upon evidence which indicates that circumstances have changed during the year and that the probability of success has increased.

Cheating and Plagiarism: The principle of honesty is recognized as fundamental to a scholarly community. Students are expected to honor this principle and instructors are expected to take appropriate action when instances of academic dishonesty are discovered. An instructor, on discovering such an instance, may give a failing grade on the assignment or for the course. The instructor has the responsibility of notifying the student of the alleged violation and the action being taken. Both the student and the instructor are entitled to academic due process in all such cases. Serious acts of dishonesty may lead to suspension or exclusion. Information on procedures is available in the Office of the Dean.

## Academic Advising

Freshmen and sophomores are encouraged to consult advisers each time they register. A staff of academic advisers is available in the University Advising Center. Students should confer with advisers on all questions concerning degree requirements, academic regulations, course elections, and programs of study. It is of primary importance that students talk with an adviser when they are having difficulties in their academic work. Students may choose either to see a specific adviser or any available adviser. Freshman and sophomore students in some of the special curricula are required to consult departmental advisers or advisers in other colleges.

Juniors and seniors are assigned to advisers in their major departments, and their course elections in the last two years are arranged in consultation with these departmental advisers.

## College Directory

## Administration

Dean:
Dalmas A. Taylor ...................... 554 Mackenzie Hall; 577-2514
Associate Deans:
Louise M. Jefferson ................... 554 Mackenzie Hall; 577-2517
John P. Oliver................................. 554 Mackenzie; 577-2516
Claude Schochet ....................... 576 Mackenzie Hall; 577-2522
Assistant to the Dean - Administration
Susan Hutton........................... 566 Mackenzie Hall; 577-2514
Director of Development
Fred Mercieca ........................... 579 Mackenzie Hall; 577-0196
Assistant to the Dean:
Sherwin Collins
588 Mackenzie Hall; 577-2520
Administrative Assistant:
Mary A. Serowik ............................... 585 Mackenzie; 577-2513
Administrative Officer:
Wafia Matta.................................... 542 Mackenzie; 577-8007

## Service Areas

Bulletin and Scheduling..................... 592 Mackenzie Hall; 577-2542
Undergraduate and Graduate Office..... 567 Mackenzie Hall; 577-2690
Major/Curriculum Office .................. 567 Mackenzie Hall; 577-3117
College Grade Change Coordinator............. 567 Mackenzie; 577-8001
Undergraduate Degree Certification and
Educational Adjustment Committee...... 567 Mackenzie; 577-8001
Personnel Records ........................... 545 Mackenzie Hall; 577-2466

## Departmental Offices

|  |  |
| :---: | :---: |
|  |  |
| iological Scien |  |
| Black Studies ................................ 586 Student Center; 577-2321 |  |
| Chemistry......................................... 123 Chemistry; 577-2595 |  |
|  |  |
|  |  |
| al Justice . 709 Mack |  |
|  |  |
| English............................................. 431 |  |
| Geography and Urban Planning ................ 225 State Hall; |  |
|  | - |
| Greek and Latin ................................. 431 Manoog |  |
| History .................................... 838 Mackenzie Hall; |  |
|  | Mac |
| manities .................................... 631 Merri |  |
|  | 422 State Hall; |
| Mathematics............................... 646 Mackenzie Hall; 577-2479 |  |
|  |  |
| Nutrition and Food Science...................... 160 Old Main; 577-2500 |  |
| Peace and Conflict Studies, Center for ........ 5229 Cass Ave.; 577-3453 <br> Philosophy..................................... 767 Mackenzie Hall; 577-2474 |  |
|  |  |
|  | hysics and Astronomy ............................. 135 Physics; 577 -27 |
| Political Science ............................ 856 Mackenzie Hall; 577-2630 |  |
| Psychology .............................. 71 West Warren Ave.; 577-2800 |  |
|  | nance and Germanic Languages........... 487 Manoogian |
| Slavic and Eastern Languages ................. 443 Manoogian; 577-3024 |  |
| Sociology.................................. 762 Mackenzie Hall; 577-2930 |  |
| men's Studies ............................... 71 W . Warren; 577-28 |  |
|  | nt Name), College of |

## AMERICAN STUDIES

Office: 411 State Hall

## Advisory Committee

English: Ross J. Pudaloff (Director), Henry Golemba; History: Alan Raucher; Humanities: Sandra McCoy; Philosophy: William D. Stine; Political Science: Philip R. Abbott

## Degree Program

## Bachelor of Arts—with a major in American studies

American Studies is an interdepartmental program administered by an advisory committee composed of specialists on American culture, offering undergraduates an opportunity for a flexible and diversified major. By enrolling in a core of required courses and by choosing electives among the humanities and social sciences, majors concentrate on the study of the nature and development of American society and culture. Depending on individual interests, electives may be chosen from the departments of Anthropology, Art History, Economics, English, Geography, History, Humanities, Philosophy, Political Science, Sociology, and some interdisciplinary programs, such as Black Studies, Chicano-Boricua Studies, and Urban Studies. Interested students should consult the director or those committee members whose fields most closely approximate their own interests.

Admission Requirements: See the general requirements for undergraduate admission to the University, page 13.

DEGREE REQUIREMENTS: Candidates must complete 120 credits in course work including satisfaction of the University General Education Requirements (see page 20) and the College of Liberal Arts Group Requirements (see page 199), as well as the major requirements cited below. All course work must be completed in accordance with the regulations of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively.

Major Requirements: Major concentration in American studies consists of forty-five credits - twenty-seven credits in required courses, and eighteen credits in electives, distributed as follows:
American Studies: six credits, including A S 201 and A S 501 or A S 597.

English: at least nine credits, selected from among ENG 314 and 540 through 549.
History: at least ten credits, including HIS 204, 205, and 519.
Electives: Eighteen credits in course work pertaining to American culture and institutions in at least three departments. Selection of these courses, which may also meet the Liberal Arts College Group Requirements, must be made in consultation with the director of American Studies.

## COURSES OF INSTRUCTION ${ }^{1}$ (A S)

## 201. Introduction to American Culture. Cr. 3 or 4

Conflicts and changes in American values, ideas, heroes, and national self-definition introduced through the study of literature, art, films, and other cultural expression.
501. American National Character. Cr. 3 or 4

Inquiry into the values of American civilization as revealed in a wide variety of evidence from the beginnings of the American experience to the present, with a view to understanding the distinctive characteristics of the American people.
597. Seminar in American Studies. Cr. 3 or 4(Max. 8)

Reading, discussion, and individual research oriented toward a common theme or problem in the study of American culture. Topics to be announced in Schedule of Classes .


## ANTHROPOLOGY

## Office: 137 Manoogian

Chairperson: Mark L. Weiss

## Professors

Barbara C. Aswad, Marietta L. Baba, James B. Christensen (Emeritus), Bernice A. Kaplan, Bernard Ortiz de Montellano, Arnold R. Pilling, Victor A. Rapport (Emeritus), Mark L. Weiss

## Associate Professors

Gordon L. Grosscup, Helen E. Hause (Emeritus), Christine Obbo-Southall

## Adjunct Professors

Morris Goodman, Gabriel W. Lasker (Emeritus), Madeleine Leininger, Eugene Perrin

Adjunct Associate Professors
C.G.N. Mascie-Taylor, Guerin Montilus

Adjunct Assistant Professors
Elizabeth Briody, Karen Davis
Adjunct Instructor
Charles Martinez

## Degree Programs

Bachelor of Arts-with a major in anthropology
Bachelor of Arts-with a major in anthropology and sociology

- Master of Arts-with a major in anthropology
- Doctor of Philosophy - with amajor in anthropology and specializations in cultural anthropology, archaeology, ethnohistory, medical anthropology, physical anthropology, historical archaeology, urban anthropology, applied anthropology and development anthropology.

Anthropology is a comparative social science which seeks to uncover principles that govern human behavior. It is divided into the fields of cultural, physical, and linguistic anthropology, and archaeology. Wayne State's department offers a broad-based Bachelor of Arts in anthropology.

Undergraduate training in anthropology is designed for various groups of students: (1) those desiring scientific knowledge of the social and cultural determinants of behavior; (2) those preparing to enter a public service profession such as librarianship, social work, nursing, medicine, education, or law; (3) those preparing for employment in historical or natural science museums; (4) those preparing to serve the business and/or industrial community as a specialist in the ethnic market place; (5) those seeking to enter the fields of cultural resource management; (6) those expecting to work with the general public and,

[^39]therefore, requiring a broad grasp of the nature of society, group behavior and social change; (7) those looking forward to teaching anthropology or another of the social or behavioral sciences; (8) those preparing for a career in another country, in international studies, or in foreign affairs; (9) those planning to pursue careers in law enforcement, police science, or criminal justice; and (10) those who desire to pursue graduate studies in anthropology.

## Bachelor of Arts Degrees

The Department offers the Bachelor of Arts degree with a major in anthropology or a major in anthropology and sociology, for both of which the following admission and degree requirements apply.

Admission requirements for these degree programs are satisfied by the general requirements for undergraduate admission to the University; see page 13.

DEGREE REQUIREMENTS: Candidates must complete 120 credits in course work including satisfaction of the University General Education Requirements (see page 20) and the College of Liberal Arts Group Requirements (see page 199), as well as the departmental major requirements cited below. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-201, respectively.

## -With a Major in Anthropology

Major Requirements: Students majoring in anthropology are required to elect a minimum of thirty credits in anthropology, including Anthropology 210, 211,520,527, 531 or 532, and 638 or 639.

Limitations: Students may not elect more than forty-five credits in course work within the Department.

Cognate Requirements: Choices of cognate courses should be discussed with faculty in the Department of Anthropology.

Honors Program for Majors: see description of Honors Program, below.

## - With a Major in Anthropology and Sociology

Major Requirements: Students majoring in anthropology and sociology are required to take Anthropology 210, 211, 520, 527, 531 or 532 , and 638 or 639 ; Sociology $200,330,420,410$ and 405 or 605 or 606. They must complete a total of at least twenty credits in sociology and twenty credits in anthropology, but not more than forty-five credits in the two fields combined.

## Honors Program

This program is open to students pursuing a bachelor's degree with a major in anthropology who maintain an overall cumulative honor point average of at least 3.3 and a similar h.p.a. in anthropology courses. Honors majors must demonstrate the ability to do original work by writing an honors thesis during their senior year. The anthropology honors program leads to a degree designation 'With Honors in Anthropology'. Students in the Honors Program must satisfy the following requirements:

1. All requirements for a major in anthropology;
2. Overall h.p.a. of 3.3 or above;
3. Anthropology h.p.a. of 3.3 or above;
4. A minimum of three and a maximum of six thesis credits in anthropology (ANT 499);
5. An approved honors thesis;
6. One 400 -level honors seminar (HON 420-428) offered by the Liberal Arts Honors Program.
7. A total of fifteen honors-designated credits including ANT 499, the 400 -level Honors Program seminar, and other honors credits earned in Honors Program courses or in Honors sections of courses offered by other departments.

For further information about honors credits available each semester, see the Liberal Arts section of the University Schedule of Classes under 'Honors Program;' or contact the Director of the Honors Program. For additional information on the Honors Program in Anthropology, contact the Departmental Honors Adviser.

## Combined Degree

Students pursuing a degree at an approved school of dentistry, medicine, or law may obtain a combined degree with anthropology; see page 201.

## Minor Study in Anthropology

The election of a minor in anthropology is appropriate for students in a variety of disciplines who wish to add a comparative bio-cultural or cross-cultural perspective on the study of human beings to their area of specialization. The minor requires a minimum of eighteen credits in anthropology courses including ANT 210 and ANT 211 (each offered for three to four credits), as well as one of the following: ANT 520 , 527,531 or 532 (all offered for three credits). Students must take an additional nine credits in anthropology elective courses. Total credits, other than Anthropology 210, must equal at least fourteen for all students (including transfer students).

In order for students to gain maximum benefit from their minor in conjunction with their major, it is strongly recommended that they consult with an adviser in the department before electing courses. A list of elective anthropology courses recommended for combination with a variety of majors is available from the Department.

## COURSES OF INSTRUCTION¹ (ANT)

210. (SS) Introduction to Anthropology. Cr. 3-4

Biological evolution, human variability, prehistoric man and early cultures, ethnography, language and cultural growth, diffusion and independent invention, problems of the field.
211. (LS) Introduction to Physical Anthropology. (Lct: 3; or Let: 3; Lab: 2). Cr. 3-4
Prereq: sophomore standing. Role of hereditary and environmental factors, human genetics, meaning of "race" and racial classifications, fossil records, evolution of man.
215. Ethnicity: A World View. Cr. 3

Comparative overview of ethnicity and the concepts relevant to the subject as used by anthropologists and other social scientists.
250. Pre-Industrial Culture Systems. Cr. 3

Early human society and its evolution until the industrial period. Topics include early technological systems, small-scale economic and political systems, the development of agriculture and state systems, evolution and biology of early humans.

[^40]direction of the honors adviser. Research will lead to the completion of an honors thesis.
499. Honors Thesis. Cr. 3-6

Prereq: senior standing; 3.3 h.p.a.; 3.3 h.p.a. in anthropology. Open only to majors in anthropology. Research problem to be completed under the direction of a faculty member whose field or expertise is within the topic area. The thesis will be judged by the adviser and a second reader.
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 approaches to interrelationship of environmental, demographic and socio-cultural variables. A survey of relevant ethnographic reports and theoretical and methodological problems.
514. Biology and Culture. Cr. 3

Prereq: ANT 210 or 211 or consent of instructor. Interrelationships between the cultural and biological aspects of man; human genetic variability, human physiological plasticity and culture as associated mechanisms by which humans adapt to environmental stress.
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, body fluid identification.

## 519. Human Osteology. Cr. 3

Prereq: ANT 211.. Introduction to the identification and measurement of human skeletal material. Topics include: anatomical nomenclature, measurement and analysis of human skeletal parts (including aging and sexing), paleo-pathological diagnoses.
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.
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.
522. Women in Development. Cr. 3

Social change generated when theories, technologies, financial power and consumer goods from industrial nations come in contact with non-industrial ones. Societal ideologies, class issues and outside influences are critical to gender, economic and political issues.
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.
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)
531. Language and Culture. (LIN 531). Cr. 3

Prereq: ANT 210 or 520 or SOC 201 or consent of instructor. Introduction to the structure of language and to the ways that humans use language in the construction of human worlds. Diversity of the world's languages and universal properties of language; theories of language change.
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.

## 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.
540. Anthropology of Health and Iliness. 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.
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.
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.
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.
608. Studies in Folkiore. (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 .
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 the operation of evolutionary forces. Genetic adaptation to environmental stressors.
617. Political Anthropology. Cr. 3

Prereq: ANT 210 or 520 or SOC 201 or consent of instructor. Comparative political systems of traditional societies. Government, the state, warfare, law, and social control. Theoretical approaches with analysis of representative societies.
(I)
618. Theory and Problems of Emergent Countries. (SOC 694). Cr. 3(Max. 6)
Prereq: ANT 210 or 520 or S S 191 or SOC 201 or consent of instructor. Underdeveloped and developing countries. Emergent
nationalism and socio-cultural factors affecting change. Cultural, demographic, institutional, technological aspects.
623. Cultures of Subsaharan Africa. Cr. 3

Prereq: ANT 210 or S S 191 or SOC 201 or consent of instructor. Subsaharan African cultures and societies; emphasis on both çomplex and simple political systems.
629. Culture Area Studies. Cr. 3

Prereq: ANT 210 or 520 or SOC 201 or consent of instructor. Culture and social changes. Origins and functional interrelationships, regional variation in population, settlement, race contact, acculturation, migration, social institutions. Topics to be announced in Schedule of Classes .
636. (HIS 786) Oral History: A Methodology for Research. (L S 777). Сr. 3

Oral history as a methodology for research. Interviewing procedures and techniques of indexing, transcribing, and analyzing historical content of oral history interviews.
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.
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.
640. Ethnicity and Aging. Cr. 3

Prereq: SOC 501 or ANT 210 or ANT 520 or consent of instructor. An analysis of the position, function and role of the elderly in selected societies around the world.
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.
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.
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.
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.
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
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

## 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.
691. Internship in Public Archaeology. Cr. 3-6(Max. 6)

Prereq: junior standing; twelve credits in anthropology, including ANT 527 and 528. Internship in Michigan Department of State's Bureau of History, Lansing (or other setting for public archaeology), for at least 300 hours; tasks may include compiling statistics for planning, completing site forms.


# 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.

## Degree Programs

## Bachelor of Arts-with a major in art history

* Master of Arts - with a major in art history
* Certificate in museum practice

Students may elect to earn the Bachelor of Arts degree with a major in art history from either the College of Liberal Arts, or the School of Fine and Performing Arts. Those electing to earn the degree from the College of Liberal Arts must fulfill all requirements for undergraduate degrees in this College (see pages 199-202).

For information relative to Admission and Degree Requirements and for Courses of Instruction, see the Department of Art and Art History, School of Fine and Performing Arts; pages 158-169.

Students who elect to earn their degrees or certificates in the College of Liberal Arts should consult the Chairperson, Department of Humanities, 631 Merrick (577-3035), for clarification and further information.

[^41]
## BIOLOGICAL SCIENCES

Office: 309 Natural Sciences
Acting Chairperson: Stanley K. Gangwere
Academic Services Officers: Laura Hamdan, Linda R. VanThiel
Academic Associate: Laurie P. Brooks

## Professors

Walter Chavin, David R. Cook (Emeritus), Dominic L. DeGiusti (Emeritus), 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 (Emeritus), Claude M. Rogers (Emeritus), Harold W. Rossmoore, Albert Siegel, John D. Taylor, William L. Thompson

## Associate Professors

Robert Arking, Kuo-Chun Chen, Hector R. C. Fernandez, D. Carl Freeman, V. Hari, R. Anton Hough, Leo S. Luckinbill, Willis W. Mathews (Emeritus), Howard R. Petty, Ann Sodja, Robert S. Stephenson, Curtis J. Swanson

## Assistant Professors

Allen W. Nicholson, Allen J. Rosenspire

## Degree Programs

## Bachelor of Arts—with a major in biological sciences

## Bachelor of Science in Biological Sciences

## * 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 knowledge in biological sciences, while individually each offers in-depth training for its special area.

## Bachelor of Arts <br> With a Major in Biological Sciences

Students contemplating a major program in biological sciences should consult with the departmental undergraduate adviser no later than the beginning of the sophomore year. The major program incorporates all of the regular College Group Requirements.

Admission requirements for the College are satisfied by the requirements for general undergraduate admission to the University; see page 13. Admission to major status in this department requires completion of Biology 101 and 102 and hence is usually granted only after the freshman year.

[^42]Students must have an over-all honor point average of at least 2.0 (and at least a 2.0 average in previous biological sciences courses) before being admitted to the major program. A grade point average of $C(2.0$ h.p.a.) must be maintained for all work within the major field.

DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work including satisfaction of the College of Liberal Arts Group Requirements (see page 199) and the University General Education Requirements (see page 20), as well as the major requirements listed below. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-201, respectively.

Biology Core Requirements: Twenty-five credits beyond BIO 101 and 102 are required of the major, including B1O 340, 507, and 312 or 509. Courses through the 600 level may be elected providing the proper prerequisites have been taken. No course having ' 8 ' as the second digit may be used for departmental major credit. At least twelve of the twenty-five credits must be taken in residence.

Cognate Requirements: All students in biological sciences are required to take CHM 107 (or CHM 105) and CHM 108.

## Bachelor of Science in Biological Sciences

The Bachelor of Science degree is for those students who wish to follow a career in the sciences and/or those planning to enter post-graduate professional schools. The degree requirements for the Bachelor of Science, therefore, are different from those under the Bachelor of Arts degree. Students contemplating a major program in biological sciences should consult with the departmental undergraduate adviser no later than the beginning of the sophomore year. The major program incorporates all of the regular College Group Requirements.

Admission Requirements: See above, under Bachelor of Arts degree.
DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work including satisfaction of the College of Liberal Arts Group Requirements (see page 199) and the University General Education Requirements (see page 20), as well as the major requirements listed below. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively.

Major Requirements: Twenty-five credits beyond BIO 101 and 102 are required of the major, including BIO 340 , 507 , and 312 or 509. Courses through the 600 level may be elected providing the proper prerequisites have been taken. No course having ' 8 ' as the second digit may be used for department major credit. At least twelve of the twenty-five credits must be taken in residence.

Cognate Requirements for the B.S. Degree: A major in biological sciences must include CHM 224, 226 and 227, PHY 213 and 214 or PHY 217 and 218, and MAT 201 and 202 in his or her curriculum. Majors should take the placement examination of the Department of Mathematics as soon as possible upon entry into the freshman year.

Foreign Language Requirement: French, German, Italian, Russian, or Spanish are languages in which a substantial modern scientific literature exists, and any one of them may be selected to fulfill the language requirement for the Bachelor of Science program.

Suggested Program

| First Year |  |
| :---: | :---: |
| Fall Semester | Winter Semester |
| Biology $101 . . . .{ }_{\text {anc.a...................... } 4}$ | Biology 102 .................................. 4 |
| Chemistry 107.............................. 4 | Chemistry 108............................. 5 |
| ' Language................................... 4 | Language................................... 4 |
| English 102................................. 4 | English elective ............................. 3 |
| Total: 16 | Total: 16 |
| Second Year |  |
| Biology elective ............................ 4 | Biology 340 ................................ 3 |
| Chemistry 224............................... 4 | ${ }^{2}$ Chemistry 226 ............................... 4 |
| Language................................... 4 | Group Requirement........................ 3 |
| Mathematics 180 or $201 . . . . . . . . . . . . . . . . . ~ 4 ~$ | Mathematics 201 or 202 .................. 4 |
| Total: 16 | ${ }^{2}$ Chemistry 227 .............................. 2 |
|  | Total: 16 |
| Third Year |  |
|  | Biology 509 or |
| Physics 213 or 217......................... 4 | Biology elective............................. 3 |
| Mathematics 202 or elective ............. 4 | Physics 214 or 218 ......................... 4 |
| Group Requirement........................ 3 | Group Requirement......................... 4 |
| Total: 15 or 16 | Group Requirement .......................... 4 |
|  | Total: 15 |

## Fourth Year

| B10 312 or B10 elective..................... 4 |  |
| :---: | :---: |
| Biology elective ............................. 3 | Biology elective.............................. 3 |
| Elective ...................................... 3 | Electives.................................... 6 |
| Group Requirement......................... 4 | Group Requirement......................... 4 |
| Total: 14 | Total: 14 |

## - With Specialization in <br> Biophysics and Molecular Biology

The Bachelor of Science with a specialization in biophysics and molecular biology is offered as an alternative Bachelor of Science degree. As with the Bachelor of Science in biological sciences, the biophysics and molecular biology degree fulfills professional school requirements; it has the identical language requirements but the cognates differ.

Students contemplating a specialization in biophysics and molecular biology should consult with the departmental undergraduate adviser at the beginning of the freshman year or when transferring into the department. The major program incorporates all the regular College Group Requirements, including a foreign language, for the B.S. degree. Students are urged to include the departmental core subjects (see above) in the course of study.

Admission Requirments: See above, under Bachelor of Arts degree.
DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work including satisfaction of the College of Liberal Arts Group Requirements (see page 199) and the University General Education Requirements (see page 20), as well as
${ }^{1}$ Language: French, German, Italian, Russian or Spanish required.
${ }^{2}$ Required for pre-professional schools. Certain medical schools also require Chemistry 312, Analytical Chemistry.
the major requirements listed below. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively.

Major Requirements: Biological Sciences 101, 102, 602, 616, and an additional eleven credits in biology electives are required. No course having ' 8 ' as the second digit may be used for departmental major credit. In the senior year, students should enroll in at least one semester of Biological Sciences 596.

Cognate Requirements consist of the following:

1. Mathematics 201 202, 203, and 235 .
2. Physics 217 and 218 and an additional three credits in physics beyond 218 .
3. Chemistry $107,108,224,226,227,542$ and 544.
4. Computer Science 206, Biological Sciences 604, or equivalent. (If BIO 604 is elected, its credit will not count toward the required biology electives, above.)

## Suggested Program

The purpose of the undergraduate biophysics and molecular biology specialty is to encourage students to obtain a broader background in physico-chemical sciences which will prepare them for advanced studies in biophysics and molecular biology as well as other biological sciences. Students are strongly urged to complete the departmental core requirements (see above).

| First Year |  |
| :---: | :---: |
| Fall Semester | Winter Semester |
| Biology 101 ................................ 4 | Biology 102 ............................... 4 |
| Chemistry 107............................. 4 | Chemistry $108 . . . .{ }_{-}$....................... 5 |
| Language................................... 4 | Language.................................... 4 |
| English 102................................. 4 | English elective ............................ 3 |
| Total: 16 | Total: 16 |


| Second Year |  |
| :---: | :---: |
| Biology elective ............................ 4 | Mathematics 202 ........................... 4 |
| Mathematics 201 ........................... 4 |  |
|  | Chemistry 227 ............................... 2 |
| Language................................... 4 | Group Requirement........................ 3 |
| Total: 16 | Group Requirement......................... 4 |
|  | Total: 17 |

## Third Year

| Mathematics 203.......................... 4 | Mathematics 235 .......................... 3 |
| :---: | :---: |
| Physics 217............................... 4 | Physics 218 .................................. 4 |
| Biology 602................................. 4 | Biology elective............................ 3 |
| Biology elective ............................ 3 | Biology 604 ................................ 4 |
| Biology 390 ................................ 1 | Group Requirement.......................... 3 |
| Total: 16 | Total: 17 |


| Fourth Year |  |
| :---: | :---: |
| Chemistry 542 ............................ 3 | Chemistry 544 .............................. 4 |
| Physics 330................................. 3 | Biology 594 .................................. 1 |
|  | Biology 596 ................................. 2 |
| Biology 596................................ 1 | Group Requirement ......................... 4 |
| Group Requirement......................... 4 | Group Requirement.......................... 4 |
| Total: 14 | Total: 15 |

## Bachelor's Degree with Honors

in Biological Sciences
Honors students in the Department of Biological Sciences must satisfy the following requirements:

1. Enroll in honors sections of Biological Sciences 101 and 102, or 161 and 162.
2. Consult with Biological Sciences Honors Adviser during freshman year.
3. Complete Biological Sciences Core Courses, see above.
4. Complete BIO 390, Directed Study, minimum two credits (max. 4); BIO 590, Honors Directed Study, minimum two credits (max. 4); BIO 595 , Senior Honors Seminar, one credit; BIO 599, Terminal Essay, two credits.
5. Complete one semester of a Liberal Arts Honors Program 400-level seminar.
6. A minimum of fifteen credits in honors-designated course work, including the honors credits in Biological Sciences and Honors Program courses listed above, and other honors-designated credits earned in Honors Program courses or in honors sections of courses offered by other departments. For further information about other honors-designated courses available each semester, see the Liberal Arts section of the University Schedule of Classes under 'Honors Program,' or contact the Director of the Honors Program.

Students must maintain an over-all honor point average of at least 3.3 in the major to be awarded the Honor's Degree.

Students with a Biological Sciences h.p.a. of 3.5 may be accepted into the program without having had the Introductory Biology Honors sequence.

## Program Calendar

Year I: Completion of honors component in Biological Sciences 101 and 102; meeting with the Biological Sciences Honors Adviser, and selection of the student's sponsor.

Year II: Entry into Directed Study, BIO 390; completion of credits under the tutelage of the honors sponsor.

Year III: Continuation of Directed Study, BIO 390 (max. 4 credits); beginning of Honors Directed Study, BIO 590.

Year IV: Completion of one course in the sequence HON 420 through 425, three credits; BIO 590 (maximum four credits); BIO 595 (Senior Seminar, one credit); BIO 599 (Terminal Honors Essay, two credits). The essay must be approved by the student's sponsor and the honors adviser.

## Minor in Biological Sciences

Completion of the minor in biological sciences requires twenty-one biology course credits including the following: BIO 105 or 101, 102, 340,507 and 312 or 509.

Combined Degree with Dentistry and Medicine: Students majoring in biological sciences who are candidates for a combined degree must complete the same requirements listed above for biological sciences majors except that a minimum of sixteen credits are required in biological sciences beyond Biological Sciences 101 and 102.

Over-age Credits: A student attempting to complete a biological sciences major after a prolonged interruption of his/her education may find that some of the course work in biological sciences is out of date. In such cases, the record will be reviewed and the department may require the student to fulfill biological sciences course requirements existing at the time of his/her return.

Transfer Students should consult with the departmental undergraduate adviser during the semester prior to their transfer.

Transfer students contemplating a combined degree with dentistry or medicine must complete the same requirements listed above for biological science majors except that a minimum of twelve credits are required in residence in biological sciences beyond Biology 101 and 102.

Determination of course equivalency will be made by the departmental undergraduate adviser in conjunction with the College of Liberal Arts Educational Adjustment Committee. The Department reserves the right for the final determination of course equivalency.

Advanced Placement Credit: Advanced placement examinations for BIO 101, 102, and 105 can be arranged through the departmental advising office.

## COURSES OF INSTRUCTION ${ }^{1}$ (BIO)


#### Abstract

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.


101. (LS) Basic Biology I. (Lab: 3; Let: 3). Cr. 4

Prereq: high school science or BIO 105. For the science major and certain pre-professional programs. BIO 101 -BIO 102 sequence required of all biology majors. Material fee as indicated in Schedule of Classes. Factual and conceptual treatment of cell molecules, cell structure, metabolism, genetics, development and taxonomy.
102. Basic Biology II. (Lab: 3; Lct: 3). Cr. 4

Prereq: BIO 101 or 105 with consent of instructor. BIO 101-BIO 102 sequence required of all biology majors. Material fee as indicated in Schedule of Classes. Ecology and evolution, their principles, strategies and outcomes in both structure and function.

## 103. (LS) Human Environmental Biology.

(Let: 3; or Let: 3; Dse: 1). Cr. 3 or 4
Not for biology major credit. Offered for four credits to Honors students only. Introduction to life science in context of functions of human individuals and populations and their relationships with the environment, including biological consequences of population growth and technology on the environment.

## 105. (LS) An Introduction to Life. (Let: 3; or Let: 3; Let: 3). Cr. 3 or 4

For the non-biology major and certain pre-professional programs. Material fee as indicated in Schedule of Classes. For the non-science major. A factual and conceptual treatment of modern biology at the cell, organismal, and population levels of organization.
120. Microbes and Human Affairs. (Lct: 2). Cr. 2 Not for biology major credit. No credit after BIO 220. Role of microbes in food, agriculture, industry and medicine; novel uses in basic research. The evolution of infectious disease will be discussed

[^43]161. (LS) Honors Biology I: Basic Principles. Cr. 5

Prereq: high school chemistry and biology. Fundamentals of prokaryotic and eukaryotic cell biology: biomolecules, cell structure and function, bioenergetics, cell growth and cell division, genetics, control of gene expression, development; viruses. First half of integrated accelerated sequence.

## 162. Honors Biology II: Basic Principles. Cr. 5

Prereq: BIO 161 or consent of instructor. Principles of evolution: population biology and ecology, their strategies and outcomes in prokaryotes, and in the unicellular and multicellular eukaryotes. Second half of integrated accelerated sequence.
(W)
181. From Darwin to DNA: Evolution for Non-Majors. (Let: 3). Cr. 3
Modern concepts of evolution for non-majors; scientific, non-technical information about the history of life, including man. (I)
203. Human Ecology. (Let: 3; Dsc: 1). Cr. 4

Prereq: BIO 102. No credit after BIO 103. Interrelationships of human beings, as organisms and as a population, and the environment. Integration of human biology and environmental biology, including factors influencing population growth and its effects on the environment. Discussions, problem sets, and field trips comparing natural and industrial ecosystems.
211. Basic Biology I: Laboratory. Cr. 1

Prereq: college-level lecture course in introductory biology and consent of Biological Sciences' undergraduate officer. Experiments on biomolecules, enzymes, respiration, photosynthesis, genetics and genetic control; microscopy and study of cells.
220. Introductory Microbiology. (Lab: 4; Let: 3). Cr. 4

Prereq: BIO 101 or 105. Material fee as indicated in Schedule of Classes. Bacteria and their basic biology; the relationship of microorganisms to man and other living forms, including their ecological importance and their role in the causation of disease; laboratory exercises paralleling the above principles.
240. Plants and Human Affairs. (Let: 2). Cr. 2

The role of plants in human well-being and in the past development and present maintenance of civilization.
(I)
271. Comparative Vertebrate Zoology. (Lab: 6; Lct: 3). Cr. 5 Prereq: BIO 102. Material fee as indicated in Schedule of Classes. Morphological development of chordates. Dissection of vertebrate types to understand interrelations of adult structures in terms of inheritance, embryology, phylogeny.
287. Anatomy and Physiology. (Lab: 4; Lct: 3). Cr. 5

Prereq: BIO 105 or 101. Not for biology major credit. Material fee as indicated in Schedule of Classes. Systems, functions, organization of the mammal; emphasis on humans. Detailed study of skeletal and muscular systems, and life functions; digestion, circulation, respiration, reproduction, growth.
(F,W)

## 312. General Ecology. (Lab: 3; Let: 3). Cr. 4

Prereq: BIO 102. Material fee as indicated in Schedule of Classes. Analysis of the factors affecting the distribution and abundance of plants and animals.
340. Principles of Physiology. (Let: 3). Cr. 3

Prereq: BIO 102; CHM 107 and CHM 108 strongly recommended. Introduction to physiology at the molecular and cellular levels: bioenergetics, metabolism and regulation, membrane permeablity and excitability, motility and conractile elements, photosynthesis.

## 341. Principles of Physiology: Laboratory.

(Lab: 3; Let: 1; Dsc: 1). Cr. 3

Prereq. or coreq: BIO 340. Material fee as indicated in Schedule of Classes. Laboratory exercises demonstrate physiological phenomena at the molecular, cellular and organ levels: nerve and muscle function, osmotic and ionic regulation, respiration and photosynthesis.
385. Human Heredity. (BIO 585). (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.
390. Directed Study. Cr. 1-4(Max. 8)

Prereq: written consent of instructor and undergraduate officer of Department, arranged during semester preceding election of course. Only four credits may apply toward biology elective. Primarily for biology majors who wish to continue in a field beyond that covered in regular courses; to be taken under direction of Biological Sciences faculty.
500. Radiation Biology. (Let: 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).
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.
504. Biometry. (Lab: 2; Let: 3). Cr. 4

Prereq: MAT 201, MAT 221 or equiv. Student computer account required. Quantitative methods in biology. Statistical approach to data analysis and the design of experiments. Laboratory section permits actual analysis of selected statistical problems.
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.

## 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.
509. Evolution. (Lct: 3). Cr. 3

Prereq: BIO 507. Evidence for organic evolution; the nature and consequences of the process.
510. Limnology. (Let: 3; or Let: 3; Lab: 6). Cr. 3 or 5

Prereq: BIO 102; one course in chemistry or physics. Material fee as indicated in Schedule of Classes. Physical, chemical and biological properties of freshwater environments.
511. Biogeography. (Let: 3). Cr. 3

Prereq: BIO 102. Introductory study of principies and patterns of plant and animal distribution.
513. Biological Fine Structure. (BIO 713). (Let: 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.
518. Field Investigations in Biological Sciences. (Fid: 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.
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.
523. Environmental Microbiology. (Let: 3; or Let: 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.
525. Food Microbiology. (Lab; 4; Let: 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.
526. Pathogenic Bacteriology. (Let: 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.
531. Immunology. (Let: 3). Cr. 3

Prereq: BIO 220 and CHM 226. Antibody formation, antigen structure, antigen-antibody reactions.
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)
547. Plant Physiology Laboratory. (Lab; 6; Let: 1). Cr. 3

Prereq. or coreq: BIO 546. Laboratory experiments on basic physiological functions of higher plants at organ, cellular, subceliular and enzyme levels; hormones and growth, transpiration, water conduction, photosynthesis, respiration.
548. Plant Pathology. (BIO 748). Cr. 3

Prereq: BIO 102, 220. Principles of plant infection, structure and life cycle of plant pathogens, defense mechanisms, spread and control of plant disease.
550. Developmental Biology of Plants. (Let: 2; or Let: 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.
551. Plant Morphology. (Lab: 3; Lct: 2). Cr. 3

Prereq: BIO 102. Anatomy and general morphology of tracheophytes.
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.
560. Invertebrate Zoology. (Lab: 4; Lct: 3). Cr. 4

Prereq: BIO 102. Material fee as indicated in Schedule of Classes. Comparative and functional morphology, embryology; physiology and evolution of invertebrate animals.
561. Vertebrate Embryology. (Lab: 4; Let: 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.
562. Developmental Biology. (Let: 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.

## 563. Histology. (Lab: 4; Let: 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.
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.
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.
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 behavorial repertoire under natural conditions.
570. Natural History of Vertebrates. (Lab: 3; Let: 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.
571. Paleontology of Vertebrates. (GEL 571). (Lab: 3; Let: 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 global 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, adaptive radiation, patterns of growth and reproduction, physiology. Field trips.
575. Biology of Aging. (BIO 775). (Let: 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. (Let: 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.
590. Honors Directed Study in Biology. Cr. 2 (Max. 4)

Prereq: consent of instructor and department Honors adviser arranged during semester preceding election of course. Open only to junior or senior biology majors. To be taken under direction of Biological Sciences faculty.
594. Senior Seminar for Bachelor of Science Programs. (Smr: 1.5). Cr. 1(Max. 2)
Prereq: senior standing in biological sciences. Not a requirement for the Bachelor of Science degree. Aspects of current biological research presented by well-known speakers.
(F,W)
595. Senior Seminar: Honors Program. (Smr: 1). Cr. 1 (Max. 2) Prereq: consent of adviser; completion of core courses and a minimum of two credits in BIO 590. Open only to Honors students in biology.
(F,W)
596. Senior Research for Bachelor of Science Programs. Cr. 1-2(Max. 3)
Prereq: written consent of instructor and biology adviser. Not a requirement for the Bachelor of Science degree. Original research. To be taken under direction of Biological Sciences faculty.
599. Terminal Essay: Honors Program. Cr. 2

Prereq: consent of department and Honors adviser; senior standing and BIO 590. Preparation of a terminal essay, satisfactory completion of which assures Honors graduation, providing performance in preceding Honors courses has been at Honors level; to be taken under direction of Biological Sciences faculty.

## 600. Cell Biology. (Lct: 3; or Let: 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, Lybridomas, properties of nucleic acids, proteins and lipids.

## 602. Methods of Analysis in Life Sciences.

(Let: 2; or Lab: 6; Let: 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; Let: 2). Cr. 4 Prereq: BIO 513 and written consent of instructor. Material fee as indicated in Schedule of Classes. Use of the electron microscope, ancillary sectioning and darkroom equipment in present or future research efforts. Evaluation of publications which use these techniques.
606. Molecular Basis of Evolution. (Let: 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.
607. Human Genetics. (Let: 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.

## 608. Genetics of Microorganisms and Cells . (BIO 708). (Let: 3).

 Cr. 3Prereq: 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.
609. Evolutionary Genetics. (Lab: 3; Let: 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.
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. (Let: 2; or Lab: 6; Let: 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.
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.
620. General Bacteriology. (Let: 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.
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.
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.
635. Microbial Ecology. (Let: 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.
640. Evolutionary Ecology. (Let: 3). Cr. 3

Prereq: BIO 312 or 509 ; 507. The merger of ecology and evolution, principally reproductive strategies.
(I)
645. Aquatic Botany. (Lct: 3; Lab: 3). Cr. 4

Prereq: BIO 102. Material fee as indicated in Schedule of Classes. Systematics, physiology and ecology of algae and higher aquatic plants.
664. Advanced Ecology. (Lct: 3). Cr. 3

Prereq: BIO 312. Discussion and analysis of recent topics in ecological theory.
(I)
666. Neurophysiology. (BIO 766). (Lct: 3). Cr. 3

Prereq: BIO 340 and 610 , or consent of instructor. Physiology and biophysics of neuronal control systems.
(B)
667. Comparative Marine Animal Physiology and Biochemistry. (BIO 767). (Let: 2; Lab: 3). Cr. 5
Prereq: consent of instructor obtained in semester prior to registration; introductory biology and organic chemistry recommended. Intensified two-week program at a marine biological station. In-depth study of comparative physiology and biochemistry of marine animals. Daily field coilecting, laboratory sessions and evening lectures. Individualized research projects; presentation at concluding symposium.

## BLACK STUDIES

Office: 586 Student Center Building

Interim Director: Alvin Aubert

## Lecturers

Schavi M. Ali, Patricia W. Coleman-Burns, L. Todd Duncan
The Center for Black Studies addresses the need recognized by the University to include Black people and their cultural heritage in the conceptualization and execution of its academic and social functions. Through instructional programs, the Center offers knowledge of the Black experience as a cognate or co-major relevant to a wide variety of academic programs. Black studies course work provides preparation for several fields in contemporary society, including communications, teaching, counseling, human resource development, public and community service, urban planning and public relations. This curriculum also constitutes useful preparation for graduate work in any of the social sciences and humanities where focus on issues and problems of the Black community is particularly relevant.

## Co-Major Program

The Black Studies Co-Major is a degree designation which students earn by completing black studies-related core and elective courses as a supplement to the degree requirements of another bachelor's degree program offered in a college of Wayne State University.

Admission: Students may apply for acceptance to the Black Studies Co-Major Program by submitting a Declaration of Major Form to the co-major adviser at the beginning of their junior year. They may prepare for the Co-Major by completing 100 - and 200 -level Black Studies core courses during their first two years.

CO-MAJOR REQUIREMENTS: The co-major requires thirty credits of core and elective courses including those sponsored by the Center for Black Studies, as well as courses offered by a variety of other departments such as: English, History, Political Science, Art History, Sociology, Anthropology, and Geography. All course work must be completed in accordance with the academic procedures of the University (see pages 5-35) and those of the college sponsoring the major program taken as a cognate to the black studies curriculum.

## CORE REQUIREMENTS

Credits
BKS 101 - Dimensions of the Black Experience: An Introduction ... 3
BKS 201 - Afro-American Culture: Historical and Aesthetic Roots. 4

BKS 221 - Contemporary Black Social and Political Thought............................... 4
BKS 321 - The Black Community and Public Policy........................................... 3

## One of the following:

HIS 314 - The Black Experience in America I: 1619-1865................................... 3
HIS 315 - The Black Experience in America II: 1865 to the Present....................... 3

## One of the following:

BKS 301 - Afro-American Culture: Development and Transformation .

ENG 239 - (IC) Introduction to Afro-American Literature: Literature \& Writing.......... 4
SPC 504 - Communication in the Black Community............................................ 3

## COURSES OF INSTRUCTION¹ (BKS)

## 101. Dimensions of the Black Experience: An Introduction. (ID 201) Cr. 3

An interdisciplinary approach to black studies, exploring several broad issues, topics, theories, concepts and perspectives which describe and explain the black experience in America.

## 201. Afro-American Culture: Historical and Aesthetic Roots. (ID 201) Cr. 4

Core requirement for black studies co-majors. Examination of the historical and aesthetic bases of a variety of forms of cultural reflection - language, literature, music - of the black experience in America. (T)

## 221. Contemporary Black Social and Political Thought. (ID 221) Cr. 4

Prereq: BKS 101 or consent of instructor. Core requirement for black studies co-majors. Survey of major social and political themes in the black experience with emphasis on the Black Movement of 1950s-1970s from a dialectical and social movements model.
(T)

## 291. (SPA 291) Spanish American Literature and Culture. (CBS

 291). Cr. 3(Max. 9)Genres, writers, themes, trends. Topics to be announced in Schedule of Classes .

## 301. Afro-American Culture: Development and Transformation.

 (I D 301). Cr. 4Theoretical perspectives on development of Afro-American creative culture and expression; emphasis on modern transformations.
321. The Black Community and Public Policy. (I D 321). Cr. 3 Core requirement for black studies co-majors. Exploration of public policy issues-education, employment, equal opportunity, development of political and social institutions-which have significant impact on the black community. community.
511. Black Women in America. (ID 511). Cr. 3

Prereq: BKS 201 or 221 or consent of instructor. Historical, social, political and economic oppression of black women in America: racism, sexism, marriage, motherhood, feminism, the welfare system; implications for advancement in the black community.
513. The Black Family. (I D 513). Cr. 3

Prereq: one 200 -level Black Studies course, or consent of instructor. Survey and analysis of historical and social issues relative to the study of the black family.
531. Special Topics in Black Studies. (I D 531). Cr. 3

Prereq: BKS 201 or 221 or consent of instructor. Seminar investigating topics related to the black experience - such as the black family, the black woman, and male-female relationships among black people - which emerge from contemporary or historical conditions.
591. Field Work in the Black Community. (ID 591). Cr. 4-12

Prereq: two black studies courses and written consent of instructor. Offered for undergraduate credit only. Field placement in organizations dealing with the black community.
690. Directed Study in Błack Studies. (I D 690). Cr. 3-12

Prereq: BKS 201 or 221 and written consent of instructor. Reading and research projects.

[^44]
## 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 (Emeritus), Staniey 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

David M. Coleman, Colin F. Poole, James H. Rigby, Louis J. Romano, Ronald R. Schroeder

## Assistant Professors

Kim F. Albizati, Ashok S. Bhagwat, Joseph S. Francisco, Shahriar Mobashery, Charles H. Winter

## Adjunct Professors

Charles King, Erhard W. Rothe

## Adjunct Assistant Professor

Jeffrey Evelhoch

## Degree Programs

## Bachelor of Arts-with a major in chemistry

## Bachelor of Science in Chemistry

## - 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

The courses offered by this department are designed to serve the needs of three distinct groups of students: (a) those majoring in chemistry with the intention of entering the chemical profession, (b) those majoring in chemistry with the intention of entering other professional fields, and (c) those majoring in other subjects who desire to elect chemistry courses as part of their programs. Students intending to major in chemistry should refer to the bachelor's degree programs below.

Beginning Chemistry Courses: Students with no prior experience in chemistry may elect Chemistry 100 (for non-science majors); Chemistry 102 (for non-science majors and certain pre-professional students); or Chemistry 105 (for science majors and most pre-professional students continuing on to higher level courses). Students who have had a year or more of high school chemistry or the

[^45]equivalent may register for Chemistry 107 or 131 (for science and preprofessional majors) provided that they meet the other eligibility requirements outlined below. Election of any one of these courses will satisfy the University General Education Requirement for a physical science.

Chemistry 100 is a terminal survey course designed primarily to acquaint non-science students with the principles of chemistry in a format requiring minimal mathematical skills. When elected for four credits, this course includes a laboratory which satisfies the University General Education Requirement for a laboratory course.

Chemistry 102 and 103 represent a terminal sequence designed to introduce the basic principles of chemistry and survey the various fields of chemistry for non-science majors and certain pre-professional students such as pre-nursing, occupational health, engineering technicians and others.

Chemistry 105 is designed as the beginning chemistry course for science majors, pre-professional students, and other students who have had little or no prior experience in chemistry but desire to obtain a strong background in the fundamentals of this subject.
Chemistry 107 is designed as the beginning course for science majors and pre-professional students who have successfully mastered high school chemistry. Eligibility for Chemistry 107 must be established by passing a qualifying examination, covering basic high school material, which is administered by the Counseling Office of Testing and Evaluation, 343 Mackenzie Hall. The qualifying examination is administered several times prior to and during registration.

Chemistry 131 is designed as the highest level beginning course in chemistry and is usually elected only by students who have a strong science background and plan to take at least two years of college chemistry. To qualify for Chemistry 131, a student must receive a superior score on the Chemistry 107 Qualifying Examination, or receive a score of 3 or better on the National Advanced Placement Exam in Chemistry (see below), or show other evidence of superior academic potential (receipt of Wayne State Merit Scholarship, admission to the Honors Program, etc.).

The sequence of Chemistry 107 (or 105) and 108 , or 131 and 132, are prerequisite to all higher numbered courses in chemistry.

Credit for Advanced Placement: Advanced placement college credit in chemistry shall be awarded for scores earned in the chemistry qualifying examination as follows:
Score of 4 or 5: Credit awarded for Chemistry 107 and 108 (nine credits); student is eligible to enroll in Chemistry 224 as well as Chemistry 132 or 312.
Score of 3: Credit awarded for Chemistry 107 (4 credits); student is eligible to enroll in either Chemistry 108 or 131.

## Bachelor of Arts with a Major in Chemistry

This curriculum allows students to major with a maximum of fifty-five credits in chemistry while providing flexibility for exposure in other cognate fields. It is particularly recommended (a) for students in science-oriented pre-professional fields (pre-medical, pre-dental), (b) for individuals entering secondary science teaching, and (c) for individuals interested in pursuing careers in chemistry who are unable to complete all of the requirements for the Bachelor of Science in Chemistry degree. While providing a less rigorous background in chemistry than that of the B.S. curriculum, the B.A. curriculum generally qualifies a person to enter graduate programs in chemistry or
biochemistry or to enter industrial positions in chemistry following graduation. However, it is recommended that individuals in the latter categories fulfill the additional requirements for professional certification by the American Chemical Society outlined below.

Those interested in Phi Beta Kappa should consult with the secretary of the Wayne State University Chapter in order to determine the maximum amount of credits allowed in the major, as well as other general requirements.

Admission requirements for the College are satisfied by the general requirements for undergraduate admission to the University; page 13. Students planning to major in chemistry should consult with an adviser in the Chemistry Department not later than the beginning of their sophomore year.

DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work including satisfaction of the University General Education Requirements (see page 20) and the College of Liberal Arts Group Requirements (see page 199), as well as the major requirements cited below. All course work must be completed in accordance with the academic procedures of the University and the College; see pages $5-35,199-211$, and the section on Bachelor's Degree Requirements, page 202.

Major Requirements: Those who wish to follow the general curriculum in the College of Liberal Arts for the B.A. degree with a major in chemistry must complete the following courses:

1. Chemistry 107 (or 105 ), $108,224,226,227,302,312,542,555$, and at least one of the following: $516,544,551,560$, or 662 . A minimum of 12 credits in chemistry must be earned at Wayne State University. Qualified students may substitute 131 and 132 for 107,108 , and 312. Similarly, students may substitute 231 and 232 for 224 and 226.
2. Physics 217 and 218 or 213 and 214. (Whereas the latter sequence is acceptable for the B.A. degree, PHY 217 and 218 provide a stronger background for advanced chemistry courses.)

## 3. Mathematics 201 and 202.

ACS Certification: B.A. candidates may receive certification by the American Chemical Society upon graduation by completing Mathematics 203 and 204 (or 225) as well as the following chemistry courses in addition to those required for the B.A. degree: Chemistry 544,516 , and two additional advanced laboratory courses (551, 557, 599). No substitutions are permitted.

To receive certification, students must submit an application along with a transcript to the Chemistry Department Curriculum Committee prior to the end of the final term.

## Recommended Program

## First Year

| Fall Semester | Winter Semester |
| :---: | :---: |
| UGE 100.................................... 1 | Chemistry 108 (or 132)................... 5 |
| Chemistry 105 or 107 (or 131)......... 4-6 | English ........................................ 3 |
| English 102................................ 4 | Mathematics 201 or 202 ................... 4 |
|  | Group Requirement........................ 4 |
| Group Requirement........................ 3 | Total:16 |
| Total: 16-18 |  |
| Second Year |  |
|  |  |
| Physics 217 (or 213).................... 4.5 | Chemistry 227 ............................... 2 |
| Group Requirements .....................6-7 | Physics 218 (or 214).....................4-5 |
| Total: 14-16 | Group Requirement........................ 3 |
|  | Elective ..................................... 3 |

## Third Year

| Chemistry 312................................ 4 | Chemistry 302 ................................ 3 |
| :---: | :---: |
| Chemistry 542................................ 3 | Group Reguirements......................... 8 |
| Language 1 .................................... 4 | Language II .................................... 4 |
| Group Requirement.......................... 4 | Total: 15 |
| Total: 15 |  |
| Fourth Year |  |
| Chemistry Elective (or CHM 555)...... 2-4 | Chemistry 555 (or CHM elective)........2-4 |
| Language III................................... 4 | Electives...................................... 12 |
| Electives....................................... 3 | Total: 14-16 |
| Group Requirement......................... 4 |  |
| Total: 13-15 |  |

## - With Honors in Chemistry

1. All B.A. requirements in chemistry must be fulfilled including a full year of physical chemistry (CHM 542 and 544) plus one additional elective (CHM $516,551,560,662$, or 664 ).
2. Minimum h.p.a.: 3.3 overall; 3.3 in chemistry courses.
3. Minimum of four credits in independent research (Chemistry 299 or 599). Research should be commenced in the junior year (or earlier).
4. Completion of one semester of a Liberal Arts Honors Program $400-\mathrm{level}$ seminar (consult the Liberal Arts section of the Schedule of Classes under 'Honors Program'). This course may be used to partially fulfill college Group Requirements and can be elected in either the junior or senior year. Classes, under 'Honors Program.'
5. At least fifteen credits in honors-designated course work, including at least four credits in Chemistry 299 and 599; the recommended chemistry honors courses; the Honors Program 400-level seminar; and honors credits in other departments or from the Honors Program.
6. Submission of a B.A. thesis (covering the undergraduate research project) to the Honors Subcommittee in Chemistry which will act to accept or reject the thesis.
7. Presentation of a Public Lecture on the B.A. thesis. This may be followed by an oral examination by the Honors Subcommittee in Chemistry.
8. Chemistry $131,132,231$, and 232 are strongly recommended for students intending to earn an Honors degree in Chemistry.

## Bachelor of Science in Chemistry

This curriculum fulfills the requirements of the American Chemical Society Committee on Professional Training and is designed primarily for those planning to enter the chemical profession or those entering other professional fields (e.g., medicine, dentistry) who desire an exceptionally strong background in chemistry. Students may take a maximum of fifty-five credits in chemistry. (Note: Those interested in Phi Beta Kappa should consult with the secretary of the Wayne State University Chapter in order to determine the maximum number of chemistry credits allowed.)

Admission requirements are satisfied by the the general requirements for undergraduate admission to the University; see page 13. Students planning to major in chemistry should consult with an adviser in the Chemistry Department not later than the beginning of their sophomore year.

DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work including satisfaction of the University General Education Requirements (see page 20) and the College of Liberal Arts Group Requirements (see page 199), as well as
the major requirements cited below. All course work must be completed in accordance with the academic procedures of the University and the College; see pages 5-35, 199-211, and the section on Bacheior's Degree Requirements, page 202.

Major Requirements: Those who wish to follow the curriculum in the College of Liberal Arts for the B.S. degree in chemistry must complete the following courses:

1. Chemistry 107 (or 105 or 131 ), 108 (or 132), 224 (or 231 ), 226 (or 232), 227, 302, 312 (or 132), 502, 516,542, 544, 551, 555, 557 and any one of the following: $560,604,614,624,644,662$ or 664 . In the first semester of the senior year, the student must enroll for at least two credits in Senior Research in Chemistry (Chemistry 599). The student may elect to do work under the direction of any senior staff member of the Department of Chemistry. It is advised that the student consult with the faculty during the last semester of the junior year in order to choose the field and staff member under whose direction this research will be carried out during the senior year.
2. Physics 217 and 218.
3. Mathematics $201,202,203$, and 204 (or 225).
4. Language requirement: three semesters of German (preferred), French, or Russian.

At least twelve credits in chemistry plus Senior Research (Chemistry 599) must be earned at Wayne State University. Superior students may elect Chemistry 131, 132, 231, 232 in place of designated lower division courses. By reducing the number of required hours in chemistry, this will permit such students to elect chemical research (Chemistry 299) as early as the summer following the freshman year. Such students will also be allowed to register for Chemistry 599 in the junior year. With the consent of the Curriculum Committee, these students may write a B.S. Thesis and, upon satisfactory completion of other minimal requirements, may be certified to receive the degree of Bachelor of Science in Chemistry with Honors.

## Recommended Program

## First Year

| Fall Semester | Winter Semester |
| :---: | :---: |
| UGE 100.................................. 1 |  |
| Chemistry 105 or 107 or 131........... 4.6 | English ........................................ 3 |
| English 102............................... 4 |  |
|  | Group Requirement........................ 3 |
| Group Requirement......................... 3 | Total: 15 |
| Total: 16-18 |  |

## Second Year

| Chemistry 224 ................................ 4 | Chemistry 226 ................................. 4 |
| :---: | :---: |
| Chemistry 312 ................................ 4 | Chemistry 227 ................................ 2 |
| Mathematics 203........................... 4 | Chemistry 302 ................................ 3 |
| Physics 217................................... 5 | Physics 218................................... 5 |
| Total: 17 | Group Requirement .......................... 3 |

Total: 17

| Third Year |  |
| :---: | :---: |
| Chemistry 542.............................. 3 |  |
|  | Chemistry 555 ............................. 2 |
| Mathematics 204 (or 225)................. 3 | Chemistry 516 .............................. 3 |
| Language I ................................... 4 | Language II ................................... 4 |
| Group Requirement........................ 3 | Group Requirement........................ 4 |
| Total: 16 | Total: 17 |

## Fourth Year

| Chemistry 502................................ 2 | Group Requirements..................... 11 |
| :---: | :---: |
| Chemistry 557............................. 2 | Electives....................................... 5 |
| Chemistry 599........................... 2-4 | Total: 16 |
| Language III................................ 4 |  |
| Advanced CHM Course*................... 3 |  |
| Total: 13-15 |  |

Substitutions in B.S. Curriculum: In recognition of the diverse backgrounds required for various careers in chemistry, students may petition the Chemistry Curriculum Committee for approval to substitute advanced courses numbered 500 or above from another discipline (such as physics, mathematics, biology, engineering) for the following B.S. requirements: (1) Mathematics 204 (or 225); (2) Chemistry courses numbered 500 or above except $516,542,544$, and 555. Such petitions for substitutions must be submitted in writing accompanied by a detailed statement of justification and a current transcript, and must be approved prior to registration in the alternative courses. Decisions regarding approval of such requests will be based on their legitimacy in terms of the student's professional goals. It is suggested that students consult the Chairperson of the Chemistry Curriculum Committee before filing such a petition.

## - With Honors in Chemistry

1. All regular requirements for the Bachelor of Science in Chemistry degree must be fulfilied (no substitutions).
2. Minimum h.p.a.: $\mathbf{3 . 0}$ overall; $\mathbf{3 . 3}$ in chemistry courses.
3. Minimum of four credits must be earned in independent research (Chemistry 299, 599); this should be commenced in the junior year (or earlier).
4. Completion of one semester of a Liberal Arts Honors Program 400 -level seminar (consult the Liberal Arts section of the Schedule of Classes under 'Honors Program.' This course may be used to partially fulfill college Group Requirements and can be elected in either the junior or senior year.
5. Submission of a B.S. thesis (covering the undergraduate independent research project) to the Honors Subcommittee in Chemistry which will act to accept or reject the thesis.
6. Presentation of a Public Lecture on the B.S. thesis. This may be followed by an oral examination by the Honors Subcommittee in Chemistry.
7. Chemistry $131,132,231$, and 232 are strongly recommended for students intending to obtain an honors degree.

## Minor in Chemistry

Students majoring in other fields who desire to obtain a minor in chemistry must complete the following courses: Chemistry 107 (or 105 ), 108, 224, 226, 227, and at least nine additional credits earned at Wayne State University in Chemistry courses numbered above 300 except seminar and research courses (CHM 299, 485, 599, etc.). Typically, the latter nine credits could be satisfied by electing some combination of: Chemistry $302,312,502,516,542,560,644$, or 662. Qualified students may substitute Chemistry 131 and 132 for Chemistry 107, 108, and 312.

COURSES OF INSTRUCTION ${ }^{1}$ (CHM)

A minimum grade of ' $C$ ' is required in every prerequisite course. Most laboratory courses have a non-returnable materials fee and are sa indicated in the Schedule of Classes. The unused portion of breakage fees is refundable; students are financially responsible only for the repair or replacement of University materials lost, damaged, or destroyed in classroom procedures.
100. (PS) Chemistry and Your World. (Lct: 3; Lab: 3). Cr. 3-4 If elected for 4 credits, 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. Facts and theories from analytical, inorganic, organic, and physical chemistry, and from biochemistry; their consequences in life processes and the environment.
( $\mathrm{F}, \mathrm{W}$ )
102. (PS) General Chemistry I. (Lct: 3; Quz: 1; Lab: 3). Cr. 4 Prereq: intermediate high school algebra recommended. 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. High school chemistry not required. First course in the terminal sequence consisting of CHM 102 and CHM 103. Matter and energy in chemistry, chemical symbols and equations, structure and properties of atoms, introduction to chemical bonding; periodicity in chemistry, solids, liquids, gases, solutions, acids and bases, and equilibrium.
(F,W)
103. General Chemistry II. (Let: 3; Quz: 1; Lab: 3). Cr. 4

Prereq: CHM 102. 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. Organic and biological chemistry; brief introduction to organic chemistry, emphasizing classes of compounds important in biochemical processes; survey of biochemistry with applications to nutrition, physiology, and clinical chemistry; protein structure; intermediary metabolism; molecular biology; and metabolic regulation.
(W, S)
105. (PS) Introductory Principles of Chemistry. (Lct: 4; Quz: 2; Lab: 4). Cr. 6
Prereq: intermediate high school algebra. Only 3 credits after CHM 102. All fee cards must be obtained from cashier's office before attending first lab. Material fee as indicated in Schedule of Classes. Breakage fee as indicated in Schedule of Classes. Principles of chemistry and their applications, atomic and molecular structure, periodicity, states of matter, solutions, chemical bonds, principles of chemical equilibrium. This course is intended for students who have a weak, or no, background in high school chemistry.

## 107. (PS) Principles of Chemistry I. (Let: 3; Quz: 1; Lab: 3). Cr. 4

Prereq: completion of one year of high school chemistry; high school algebra; satisfactory score on qualifying examination in high school chemistry. Only 2 credits after CHM 102; no credit after CHM 105. All fee cards must be obtained from cashier's office before attending first lab. Material fee as indicated in Schedule of Classes. Breakage fee as indicated in Schedule of Classes. Principles of chemistry and their applications, atomic and molecular structure, states of matter, periodicity, solutions, chemical bonds, principles of chemical equilibrium, and thermochemistry.
(F,W)
108. Principles of Chemistry II. (Lct: 3; Quz: 1; Lab: 4). Cr. 5

Prereq: CHM 105 or 107 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. Acids and bases; chemical equilibria, especially those of acid-base, oxidation-reduction, complex formation, and precipitation reactions in aqueous solution; properties and reactions of inorganic substances; qualitative analysis of common inorganic ions; chemical thermodynamics and kinetics; electrochemistry; nuclear chemistry.
131. (PS) Chemical Principles and Analysis I. (Let: 3; Quz: 1; Lab: 4). Cr. 5
Prereq: one year of high school chemistry and algebra; evidence of superior potential (Merit Scholarship, Honors Program, superior performance on the CHM 107 Placement Examination or similar criteria). 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. Brief review of basic chemical principles and atomic and molecular structure; application of chemical principles in chemical phenomena with emphasis on chemical reactions in the gaseous and liquid states and in solution. The two-semester sequence of CHM 131 and CHM 132 covers the material in the three semester sequence CHM 107, CHM 108, CHM 312.
132. Chemical Principles and Analysis II. (Let: 3; Quz: 1; Lab: 4). Cr. 5
Prereq: CHM 131 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. Continuation of CHM 131. Qualitative and quantitative determination of selected elements in chemical samples. Chemical equilibrium concepts and calculations.
224. Organic Chemistry I. (Let: 3; Quz: 1; or Let: 4). Cr. 4

Prereq: CHM 108 or 132 or equiv. The sequence CHM 224, CHM 226, and CHM 227 meets requirements for premedical, predental, pharmacy and chemical engineering students. Required for chemistry majors. Structure, stereochemistry, and physical properties of all important classes of organic compounds. Introduction to organic spectroscopy. Reaction intermediates.
226. Organic Chemistry II. (Let: 3; Quz: 1; or Let: 4). Cr. 4 Prereq: CHM 224 or equiv. Continuation of CHM 224. Reactions of aliphatic and aromatic compounds. Reaction mechanisms; multi-step syntheses; heterocyclic compounds, amino acids, proteins, carbohydrates, nulceic acids.
(T)
227. Organic Chemistry Laboratory. (Let: 1; Lab: 5). Cr. 2 Prereq: CHM 224. 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. Experiments to familiarize students with important laboratory techniques, with methods of identifying organic compounds, with reactions of important classes of aliphatic and aromatic compounds, and with the scope and limitations of organic syntheses.
231. Organic Structure and Reactions. (Lct: 4). Cr. 4

Prereq: CHM 132 or superior performance in 108. No credit after CHM 224. Structure, stereochemistry, and reactions of organic compounds. The two semester sequence of CHM 231 and CHM 232 covers all of the material in CHM 224 and CHM 226. This sequence is recommended for all chemistry majors and honors students.
232. Organic Synthesis and Spectroscopy. (Let: 4). Cr. 4

Prereq: CHM 231; coreq: 302. No credit after CHM 226. Continuation of CHM 231. Synthesis and reactions of organic compounds. Introduction to spectroscopic methods in organic chemistry.
(W)

1 See page 433 for interpretation of numbering system, signs and
abbreviations
228
236. Organic Chemistry II: for Chemical Engineers. Cr. 2 Prereq: CHM 224 or equiv. Open only to chemical engineering students. Continuation of CHM 224 for chemical engineers. Reactions of aliphatic and aromatic compounds; reaction mechanisms.
299. Honors Research Problems in Chemistry. Cr. 2-4

Prereq: CHM 108 or 132 or equiv. and consent of departmental curriculum committee. Research projects under the direction of a senior faculty member.
302. Intermediate Inorganic Chemistry I. (Let: 3). Cr. 3 Prereq: CHM 224 or equiv. Emphasizes chemistry of the main group elements and includes basic coordination chemistry of the transition metals.
(W,S)
312. Analytical Chemistry. (Let: 3; Lab: 4). Cr. 4

Prereq: CHM 108 or equiv. No credit after CHM 132. 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. Theoretical and practical aspects of elementary quantitative determinations involving chemical methods and elementary instrumentation. Equilibrium calculations and statistics.
(F,S)
485. Frontiers in Chemistry. (CHM 885). Cr. 1 (Max. 2)

Prereq: junior or senior Chemistry major. Offered for S and U grades only. Fields of fundamental chemistry now under investigation, presented by invited specialists actively engaged in research. (F,W)
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.
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)
540. Biological Physical Chemistry. Cr. 3

Prereq: CHM 108 or 132 or equiv., MAT 201 and MAT 202 or equiv.; prereq. or coreq: PHY 213 or PHY 217 or equiv. Presentation of physical chemistry topics: thermodynamics, solution equilibria, chemical kinetics, quantum chemistry, spectroscopy, statistical mechanics, transport processes, and structure with biological applications.
(W)
542. Physical Chemistry I. Cr. 3

Prereq: CHM 138 or 132, MAT 202 or equiv.; prereq. or coreq: PHY 213 or PHY 217 or equiv. Chemical thermodynamics, phase equilibrium, solutions, surface chemistry, electrochemistry. (F,W)

## 544. Physical Chemistry II. Cr. 4

Prereq: CHM 108 or 132, MAT 202 or equiv.; prereq. or coreq: PHY 213 or PHY 217 or equiv. Required of B.S. and ACS-approved B.A. majors. Kinetic theory, empirical and theoretical kinetics, quantum
theory, atomic and molecular structure, molecular spectroscopy, statistical mechanics.
(F,W)

## 551. Chemical Synthesis Laboratory. Cr. 3

Prereq: CHM 227 and 302 or equiv. All fee cards must be obtained from cashier's office before attending first lab. Material fee as indicated in Schedule of Classes. Breakage fee as indicated in Schedule of Classes. Advanced techniques for the synthesis, purification and characterization of both organic and inorganic compounds.

## 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, and 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.

## 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.

## 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.
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.
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.
598. Honors Thesis Research in Chemistry. Cr. 2-4(Max. 8)

Prereq: consent of adviser. Open only to students in Liberal Arts Honors Program; elect no later than first senior semester. Original investigations under direction of senior staff member.
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.
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.

## 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.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.
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.
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.
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.
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.
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.
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.
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.

## 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.
690. Directed Study. Cr. 1-4(Max. 8)

Prereq: undergrad., consent of adviser; grad., consent of adviser and graduate officer.


# COMMUNICATION <br> DISORDERS AND SCIENCES 

Office: 555 Manoogian

Interim Chairperson: Dorothy E. Dreyer

## Professor

William R. Leith

## Associate Professors

Lynn S. Bliss, Mervyn L. Falk

## Assistant Professor

Dorothy E. Dreyer

## Lecturers

Mark Lehman, Kristine V. Sbaschnig, Cathy Williams, William Wolfolk

## Cooperating Faculty, Department of Audiology, School of Medicine

Doris V. Allen, James A. Kaltenback, William F. Rintelmann, Dale O. Robinson

## Adjunct Faculty

Herbert J. Bloom, Richard M. Cole, Richard Frankel, Donald I. Kapetansky

## Degree Programs

## Bachelor of Arts - with a major in communication disorders and sciences

* Master of Arts - with a major in communication disorders and sciences


## * Doctor of Philosophy - with a major in communication

 disorders and sciences
## Bachelor of Arts with a Major in Communication Disorders and Sciences

The mission of this department is to train students to work with speech-language handicapped children and adults in a variety of settings, including the public schools, hospitals, clinics, rehabilitation centers and private practice.

Undergraduate majors in this specialization should note that a master's degree in this area is required for clinical certification by the American Speech-Language-Hearing Association. Study in this field at the undergraduate level is considered to be pre-professional course work.

Admission Requirements are satisfied by the general requirements for undergraduate admission to the University; see page 13.

DEGREE REQUIREMENTS: Candidates for the Bachelor's degree must complete 120 credits of course work including satisfaction of the College of Liberal Arts Group Requirements (see page 199) and the University General Education Requirements (see page 20), as well as the major requirements listed below. All course work must be completed in accordance with the regulations of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-201, respectively.

It is expected that a major will complete at least thirty but not more than forty-six credits in CDS course work. Any credits elected over the maximum forty-six must have prior approval of both adviser and chairperson if the additional credits are to count toward the degree ( 120 credits) for transfer students. At least twelve credits are required in residence within the major. A proper distribution of courses approved by the student's adviser is important. It is desirable that students intending to major in speech communication begin their work in the Department in their sophomore year. Courses in the major should be selected in consultation with an adviser. Although students do not officially declare a major prior to the junior year, advising is available to freshmen and sophomores.

Major Requirements for a Bachelor of Arts degree in this discipline consist of the following courses: CDS 508,509, 514, 530,531,532,536, $544,638,660,661,662,664 ;$ SPM 540 and 542.

Bachelor of Science Option: Students majoring in this discipline also have the option of working toward the Bachelor of Science degree granted by the College of Education. It is recommended that such students earn the Michigan Teaching Certificate at the undergraduate level, although certification is not granted until completion of the Master's Degree, which is required before clinical certification is awarded. These students normally transfer into the College of Education at the beginning of the junior year.

An adviser should be consulted early in the student's program so that course work is taken in the proper sequence for both the B.S. degree in education and the Michigan Teaching Certificate, as well as the speech-language major program. For the Bachelor of Science degree the College of Education also requires a planned minor elected in consultation with an adviser in the College of Education. Inquiries should be directed to 555 Manoogian Hall (577-3337).

## COURSES OF INSTRUCTION¹

## Communication Disorders and Sciences (CDS)

## 180. Improving Intelligibility for Internationals. Cr. 2

 Offered for $S$ and $U$ grades only. Articulation, accent, and intonation patterns drilled on a group and individual basis for people learning English as a second language. Coursework in the English Language Institute should be completed of taken concurrently.508. Phonetics. (SED 532). Cr. 3

Multisensory study of sounds in the English language, emphasizing acoustic, physiologic, kinesiologic approaches.

[^46]509. Anatomy and Physiology of the Speech Mechanism. (SED 533). Cr. 3

General science of normal speech; anatomy, physiology and mechanics of respiration, phonation, resonation, articulation.(W)
514. Introduction to Speech Science. (SED 507). Cr. 3

Prereq: CDS 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.
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.
( $\mathrm{F}, \mathrm{S}$ )
531. Clinical Methods in Speech Pathology. (SED 531). Cr. 3

Prereq: CDS 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.
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.
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.
638. Diagnostic Tests in Communication Disorders. (SED 638). Cr. 3
Prereq: junior standing; CDS 508, 509, 514, 530, 532. Diagnostic tests and instruments used in the appraisal of speech-language disorders. Test protocol and administration procedure.
(W)
660. Introduction to Articulation Disorders. (SED 660). Cr. 3 Prereq: CDS 530. Introduction to basic concepts related to acquisition and manifestations of articulation disrorders in children and adults, including remediation.
661. Introduction to Stuttering. (SED 661). Cr. 3

Prereq: CDS 530. Introduction to basic concepts related to acquisition and manifestations of stuttering disorders in children and adults, including remediation.
662. Introduction to Voice Disorders and Cleft Palate. (SED 662). Cr .3

Prereq: CDS 530. An introduction to basic concepts related to acquisition and manifestations of voice disorders in children and adults and to resonance disorders as a result of oral clefting, including remediation.
664. Language Pathology: Etiology and Diagnosis. (SED 664) (LIN 664). Cr. 3
Prereq: CDS 530 and 532. Descriptions, etiology, methods of diagnosis of language disorders in children, including remediation.

## 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.
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.
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.
600. (AUD 600) Electrophysiological Procedures. Cr. 3

Prereq: AUD 540; graduate standing in audiology or consent of instructor. Two distinct electrophysiological tests, electronystagmography (ENG) and acoustic immittance; subtests. Assessment of vestibular system by ENG; assessment of auditory system by immittance testing.
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.
641. Pure-Tone and Speech Audiometry. (AUD 641). Cr. 3

Prereq: graduate status in audiology. Fundamental principles and clinical applications of pure-tone and speech audiometry. Laboratory assignments required.
642. Special Audiologic Procedures. (AUD 642). Cr. 2

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.
645. Clinjcal 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. .

# COMPUTER SCIENCE 

Office: 538 Mackenzie Hall
Chairperson: Vaclav Rajlich
Administrative Assistants: Patricia A. Stroker, Jeffrey R. Blust

## Professors

Michael Conrad, Karel Culik, William Grosky, Mortesa A. Rahimi, Vaclav Rajlich

## Associate Professors

Charles F. Briggs (Emeritus), Robert Reynolds, Ishwar Sethi, Nai-Kuan Tsao, Horst Wedde, Seymour J. Wolfson

## Assistant Professors

Farshad Fotouhi, Bogdan Korel, Jia-Guu Leu, Alexis Manaster-Ramer, Bernard Nadel, Satyendra Rana, Ambrish Vashishta

## Lecturer

Richard Weinand

## Adjunct Professors

Gregory Bachelis, Roberto Kampfner

## Degree Programs

Bachelor of Arts-with a major in computer science

## Bachelor of Arts-with a major in information systems

## Bachelor of Science in Computer Science

Post Bachelor Certificate in computer science

* Master of Arts-with a major in computer science
* Master of Science—with a major in computer science
- Master of Science in Electronics and Computer Control Systems-Interdisciplinary
*Doctor of Philosophy—with a Major in Computer Science

The Department of Computer Science teaches the principles of design and use of computing and information systems. Underlying concepts are stressed which give students the flexibility to manage the ever-increasing complexity of this rapidly-changing field. The objective of the Department is to provide a learning environment which fosters the development of computer scientists possessing strong fundamental concepts and good mathematical backgrounds. To facilitate this instruction, the Department has at its command an array of hardware resources. For details, see page 236.

## BACHELOR'S DEGREE PROGRAMS

Admission requirements for the College are satisfied by the general requirements for undergraduate admission to the University; see page 13.

Students planning to major in computer science should consult with a departmental adviser as soon as possible and no later than the beginning of their sophomore year. In general, the requirements in effect when a student declares a major in computer science will be those that the student must complete. In some cases, changes in the availability of courses may require the substitution of other courses. However, if the time period for completion of requirements is extended too long, a revision of the requirements may be necessary. Computer science is a rapidly changing discipline. Students should check frequently with the department for the latest information concerning the program and requirements.

Following an interruption in enrollment: A student attempting to complete a computer science major after a prolonged interruption of his/her education may find that some of his/her course work in computer science is out of date. In this case, the record will be reviewed and the department may require the student to fulfill computer science course requirements existing at the time of his/her return, and/or retake some of the courses.

Transfer students should consult with the undergraduate departmental adviser during the semester prior to their transfer. Determination of course equivalency will be made by the Transfer Credit Evaluation Unit in conjunction with the undergraduate departmental adviser. The department reserves the right of final determination of course equivalency.

Major course sequence outlines are available in the department for guidance in meeting degree requirements.

Introductory Course Work: The Department of Computer Science offers a number of courses introducing students to basic computer and computing concepts. Some of these courses also serve as prerequisites for more advanced study in computer science. Most of the introductory courses require mathematics preparation equivalent to MAT 095 or MAT 180. (See course descriptions regarding the required prerequisites, page 279.) CSC 102 is the preferred introduction for students planning to continue in computer science, and is generally required before taking more advanced courses. This course (CSC 102) presumes that a student has had previous exposure to computer programming. Those students who have not had such experience should enroll in CSC 101. CSC 100 is for non-major students who desire to learn BASIC; students who intend to major or minor in computer science will not normally take this course. CSC 206 is primarily intended for engineering students. ALL courses at or below CSC 210 are considered 'introductory' and may NOT be used to complete CSC elective requirements.

## Bachelor of Science <br> in Computer Science

The Bachelor of Science curriculum provides a strong academic foundation in computer science. The program is designed for students whose primary interest is in the study of computers and computer systems, and is the recommended preparation for those interested in pursuing graduate studies in computer science or for those who are interested in research. Mathematics is required to a level commensurate with the prerequisites of many advanced computer science courses.

Admission Requirements: See above.

[^47]DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work, including satisfaction of the University General Education Requirements (see page 20) and the College of Liberal Arts Group Requirements (see page 199). All course work must be completed in accordance with the regulations of the University governing undergraduate scholarship and degrees; see page 5-35 and 199-211, respectively.

## COURSE REQUIREMENTS:

1. Mathematics $186,187,201,202,203,221$, and 225.
2. Introductory programming courses Computer Science 102 and 203.
3. Computer Science courses beyond the introductory courses including the following:
(a) Computer Science 371, 441, 442, 450, and 451.
(b) Four additional Computer Science electives of at least three credits, all numbered above 210 and one above 510, excluding CSC 495 and 590.
(c) A minimum of twenty credits in computer science must be earned at Wayne State University.

Students deciaring their major should consult an adviser for a written assessment of curreent requirements.

## - With Honors in Computer Science

Students in the Honors Program are challenged by independent research work and by the close association and informal discussions with faculty and advanced graduate students.

The Honors Program is open to students seeking the Bachelor of Science in Computer Science degree. A cumulative honor point average of at least 3.3 is required for consideration for admission to and continuance in the program. Students are admitted on the recommendation of the Honors Program Adviser. Interested students should contact a departmental adviser and complete the Honors Plan of Work form when declaring computer science a major or at the beginning of the senior year. If a student has declared a major in computer science prior to entering the Honors Program, a new Declaration of Major must be completed, stating 'Bachelor of Science with Honors'.

## Admission Requirements: See page 233.

DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work, including satisfaction of the University General Education Requirements (see page 20) and the College of Liberal Arts Group Requirements (see page 199). All course work must be completed in accordance with the regulations of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively.

## COURSE REQUIREMENTS:

1. Mathematics $186,187,201,202,203,221$ and 225.
2. Introductory programming courses Computer Science 102 and 203.
3. Computer Science courses beyond the introductory courses including the following:
(a) Computer Science 371, 441, 442, 450, and 451.
(b) Three additional Computer Science electives of at least three credits, all numbered above 210 and one above 510, excluding CSC 495 and 590 .
(c) A minimum of twenty credits in computer science must be earned at Wayne State University.
4. One semester of a Liberal Arts Honors Program 400 -level seminar (consult the Liberal Arts section of the Schedule of Classes, under 'Honors Program').

## 5. Computer Science 595, Honors Thesis; three to six credits.

The thesis is a paper presenting the results of the student's independent research. The length of the thesis may vary according to the nature of the topic and method of approach. Registration for Honors Thesis must be made a minimum of two semesters prior to the student's expected graduation date. A minimum of two semesters should be allowed for completion of all of the thesis requirements. It is expected that the Honors Thesis will conform to the University master's thesis format (copies available from the Department).

The student will be assigned a faculty adviser to guide and direct the research. A grade is awarded for CSC 595 after approval by two faculty advisers.
6. An overall Wayne State cumulative honor point average of at least 3.3.
7. A minimum total of fifteen credits in honors-designated course work, including Computer Science 595, and the Honors Seminar listed above. For information about additional honors-designated course work available each semester, see the Liberal Arts section of the University Schedule of Classes under 'Honors Program,' or contact the Director of the Honors Program (577-3030).

## Bachelor of Arts

## with a major in Computer Science

The Bachelor of Arts degree is designed for those whose interests lie in the application of computers to non-scientific areas and is suitable for those who wish to take extensive additional work in other areas (for example, business, library science, psychology). It may also be suitable for students who decide to enter computer science late in their academic careers and who thus may not be able to complete the requirements for the Bachelor of Science in a reasonable length of time.

While providing a less rigorous background in computer science than the B.S. curriculum, the Bachelor of Arts program provides the minimum computer science and mathematics background for advanced courses and graduate admission. Graduate study in computer science usually requires more mathematics than is required for this degree; students planning to earn a graduate degree in this field are strongly urged to take as much additional mathematics and computer science as their programs allow, to provide an adequate background for graduate work.

## Admission Requirements: See page 233.

DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work, including satisfaction of the University General Education Requirements (see page 20) and the College of Liberal Arts Group Requirements (see page 199). All course work must be completed in accordance with the regulations of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively.

## COURSE REQUIREMENTS:

1. Mathematics $186,187,201$, and 221.
2. Introductory programming courses equivalent to Computer Science 102 and 203.
3. Computer Science courses beyond the introductory courses including the following:
(a) Computer Science 371, 441, 442, and 451.
(b) Three additional Computer Science electives of at least three
credits, all numbered above 210 and one above 510 , excluding CSC 495 and 590.
(c) A minimum of fifteen credits in computer science must be earned at Wayne State University.
Students declaring their major should consult an adviser for a written assessment of current requirements.

## - With a Major in Information Systems

This degree differs from the Bachelor of Arts with a major in Computer Science in that it prescribes carefully integrated study encompassing computer science and a specific area of application. The curriculum is designed to provide students not only with a good background in computer science but also with the essential concepts of systems analysis and design required for particular applications. A corequisite part of the program involves a fundamental orientation in the discipline in which the computer science skills are to be applied.

The cognate specialization is to be selected from other fields (for example, business, library science, the social or natural sciences, medicine) either within the College of Liberal Arts or from other University divisions. Coursework in the specific application area will be developed in consultation with the appropriate department and must be approved by the Computer Science Undergraduate Committee to assure a coherent plan of study properly integrating computer science and the intended field of endeavor.

## Admissions Requirements: See page 233.

DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work, including satisfaction of the University General Education Requirements (see page 20) and the College of Liberal Arts Group Requirements (see page 199). All course work must be completed in accordance with the regulations of the University governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively.

## COURSE REQUIREMENTS:

1. Mathematics $186,187,201$, and 221.
2. Computer Science 102, 203, 210, 371, 441, 442, 511, and 513 .
3. A minimum of eighteen credits of course work approved by the Computer Science Undergraduate Committee in a specific application area. It is expected that much of this coursework will be related to the intended application of computer technology to the applied area. The applied area need not be limited to subjects taught in the College of Liberal Arts.
4. A minimum of twenty credits in computer science must be earned at Wayne State University.

Students declaring their major should consult an adviser for a written assessment of current requirements.

## Work-Study Cooperative Program

Students who wish to enrich their education with practical computer science experience may enroll in the Cooperative Program. In this program, full-time study terms are alternated with full-time work assignments in cooperating industries. Usually students enter the program in either their junior or senior year and most of the work assignments are in the metropolitan Detroit area. A student may enroll for no more than one course with the approval of the College Co-op Coordinator during those terms in which he/she is on a work assignment. Each term a student is on a work assignment he or she must enroll the following term in Computer Science 495, Professional Practice in Computer Science. A report covering each work
assignment is required of the student and performance on the job is rated by the industrial supervisor. Salaries and other benefits are paid for the time spent on each work assignment. The student must be majoring in computer science. For details and enrollment procedures, contact the College Co-op Coordinator at the University Placement Services.

## Minor in Computer Science

The Minor Program provides a background in computer science for students who are majoring in other fields of study in the College of Liberal Arts.

## COURSE REQUIREMENTS:

1. Mathematics $186,187,201$, and 221 .
2. Introductory programming courses Computer Science 102 and 203.
3. Computer Science courses beyond the introductory courses, including the following:
(a) Computer Science 371 and 441.
(b) Additional computer science electives to complete the required number of credits, selected from courses numbered above 210 and excluding CSC 495 and 590.
(c) A minimum of nine credits in computer science must be earned at Wayne State University.

Students declaring their minor should consult an adviser for a written assessment of curent requirements.

Students may wish to modify the Minor Program to fit special needs. For any changes or adjustments to the above course requirements, students should contact one of the departmental undergraduate advisers for approval.

## Post Bachelor Certificate <br> in Computer Science

The Certificate Program in Computer Science is designed for students who have obtained an undergraduate or graduate degree in another area from an accredited university, and who now desire undergraduate-level competence in computer science skills. Students whose background includes the courses which satisfy Wayne State University's College of Liberal Arts Group Requirements will generally apply for a second bachelor's degree rather than the Certificate in Computer Science.

The Post Bachelor Certificate Program provides a certificate which verifies the completion of the technical courses required for the Bachelor of Arts with a major in Computer Science and provides the minimal course requirements for admission to the graduate program in computer science at Wayne State University; students planning to enter the graduate program in computer science are strongly advised to take as many additional mathematics and computer science courses as their programs will allow, to provide an adequate background for graduate work.

Admission: Students who have received their undergraduate degree from Wayne State University should apply directly to the University Advising Center. Two copies of the student's transcript must be submitted to the university adviser.

Students who have received their undergraduate degrees from another institution must complete the Application for Undergraduate Admission form and request that official transcripts from the college
or university granting the degree be sent directly to the Office of Admissions.

CERTIFICATE REQUIREMENTS: Candidates for this certificate must achieve a level of competence in mathematics and computer science equivalent to completion of fifty-seven credits in university course work as set forth in the following program. Prior preparation at the undergraduate level as evidenced in transcript notation or by demonstrable proficiency may be used to satisfy any of these requirements, except that twenty credits in computer science, either as transfer credit to this program or as Post Bachelor certificate credit, must be earned at Wayne State University. The content requirements for this program are as follows:

1. A bachelor's degree or its equivalent in some discipline other than computer science with an honor point average of at least 2.0 from an accredited institution.
2. Mathematics $186,187,201$, and 221 .
3. Introductory courses Computer Science 102 and 203.
4. Computer Science courses beyond the introductory courses, including the folowing:
(a) Computer Science 371, 441, 442, and 451.
(b) Three additional Computer Science electives of at least three credits, all numbered above 210 and one above 510, excluding CSC 495 and 590 .
(c) At least twenty credits in computer science course work must be taken at Wayne State University with an h.p.a. of at least 2.5 .
(d) CSC 450 is required for admission to the graduate program.

Students should consult an adviser for a written assessment of current requirements.

## 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. Furthermore, 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 Corporation MicroVAX 3600 operating as a Merit Network host;

A local area network consisting of SUN color, greyscale, and monochrome workstations;

A local area network consisting of Digital Equipment Corporation VAX Station II/GPX Advanced Color Workstations;

A vision laboratory consisting of a COMTAL Vision System 1/10 and a MAC II based programmable image processor;

Four VAX Station 2000 and one VAX Station 3500;
A Texas Instrument EXPLORER-LX, LISP machine;
A robotics laboratory centered on a Denning DRV-1 robotic vehicle.

The Digital Systems Laboratory, which provides the capabilities for microprocessor device construction and evaluation.

The Department operates an Information Processing Training Center which is used for training persons in the use, skill and manipulation of word processing equipment and office automation concepts. The Center conducts courses for University staff as well as special courses for the general public.

In addition to the general University interactive facilities, the Department owns a large number of terminals for the exclusive use of its faculty and students.

## COURSES OF INSTRUCTION ${ }^{1}$ (CSC)

## 100. (CL) Introduction to Computer Science. Cr. 3

Prereq: placement out of MAT 095 . No credit after any other programming course. Student computer account required. Survey of computer science on an elementary level. Introduction to using a terminal. Problem solving: analysis, structured algorithm development and programming, testing. Students run several problems on a computer in the BASIC language using arrays, functions and subroutines. File construction and manipulation using MTS and the editor.
101. (CL) Introduction to Computing. Cr. 3

Not open to students who have taken a previous computer programming course. Brief introduction to programming using Pascal. Use of text editors, formatters, spreadsheet programs, database programs; use of microcomputers and mainframes.

## 102. Computer Science I. Cr. 4

Prereq: placement out of MAT 180 and CSC 101 or equivalent knowledge of programming. Student computer account required. Introduction to computer science and programming using MTS and Pascal.

## 105. FORTRAN Laboratory for Engineers. Cr. 1-2

Prereq: MAT 180. Credit in College of Engineering only. Student computer account required. An informal introduction to computing; projects related to areas of interest.
203. Computer Science II. Cr. 4

Prereq: CSC 102 or equivalent knowledge of programming with Pascal. Student computer account required. Advanced programming concepts using Pascal.

## 206. (CL) Introduction to FORTRAN. Cr. 3

Prereq: placement out of MAT 180. No credit after CSC 102, CSC 105 or CSC 207. Student computer account required. Problem solving; problem formulation, analysis and design of algorithms; data representation: use of flow charts and the FORTRAN programming language in implementing algorithms; introduction to computer systems; use of MTS command language.

## 207. Programming with PL/I. Cr. 4

Prereq: placement out of MAT 180; at least two semesters of programming in COBOL, FORTRAN, or equiv. Student computer account required. Intensive course in PL/I for students with extensive prior programming background in other languages.
208. Computer Concepts for Engineers. Cr. 4

Prereq: CSC 105. Student computer account requited. Programming languages, description of a computing system, interrelationships in functional units, input preparation,

[^48] abbreviations
problem-solving and algorithm design applications. Introduction to data structures, storage methods and data base systems.
209. Computers and Mankind. Cr. 2-3

Offered for two credits to lecture students; offered for three credits to students electing lecture and laboratory. Material fee as indicated in Schedule of Classes. Basic concepts of computing including organization capability, control of computers, their use in the management of information, and the study of complex processes through simulation; application in various areas of government, industry, education and the arts; future direction of computing; and the impact of computers on society.

## 210. Introduction to COBOL. Cr. 3

Prereq: CSC 100 or 202 or equiv. Student computer account required. Problems in business applications: editing, transaction analysis, file update, report generation, tape and disk files. Structured use of the COBOL language.
314. Information Systems Design Using COBOL. Cr. 3

Prereq: CSC 203 or 210 . Student computer account required. COBOL specification and implementation of sequential, indexed, direct and relative file organizations and their related access methods in the context of typical information systems applications. Basic design alternatives analyzed; emphasis on information systems analysis and design methodology.
(W)

## 371. Data and File Structures. Cr. 4

Prereq: CSC 203, MAT 187. Student computer account required. Trees and graphs, characteristics of storage devices, representation of data structures internally and on external devices, topological sorting and advanced searching.
441. Introduction to Computer Systems. Cr. 4

Prereq: CSC 203 or equiv. Student computer account required. Machine languages and basic assembler languages for IBM 370 style computers; internal data representations and arithmetic: character, integer decimal, floating point; input and output using channels; storage protection; privileged operations; interrupts.
442. 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. (Formerly CSC 541)
450. Introduction to Theoretical Computer Science. Cr. 3

Prereq: CSC 371 or former 370 and MAT 191. Concepts of computation via finite automata, Turing machines, and decidability; formal languages; complexity theory; program correctness; topics from artificial intelligence.
451. 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. (Formerly CSC 531)
495. Professional Practice in Computer Sclence. Cr. 1(Max. 4) Prereq: junior or senior standing. Offered for S and U grades only. Open only to computer science co-op students. Must be taken after each full-time co-op work assignment. May not be used to satisfy undergraduate computer science elective requirements. Review of computer science practical experiences resulting from participation in the cooperative work-study program.
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.
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.

## 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.
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.
518. Introduction to Modelling and Simulation. (I E 518). Cr. 3 Prereq: CSC 203 or equiv. and MAT 202. Student computer account required. Introduction to main concepts: modelling objectives, system boundaries, model formalism, experimentation with models, simulation. Concentration on finite state, cellular space and simple continuous and discrete event models.
(I)
519. Computational Modeling of Complex Systems. Cr. 3

Prereq: knowledge of a programming language; MAT 201. Student computer account required. Introduction to computer methods useful for modeling complex systems which are refractory to traditional methods of analysis. Emphasis on problem formulation and concrete examples, especially examples drawn from biology.

## 520. Principles of Programming Languages. Cr. 3

Prereq: CSC 371 or former 370, and 441. Introduction syntax, semantics, defining syntax, BNF, context-free grammars, parse trees, data types, sccope and extent, parameter passing, functional programming, data adstraction, running time structures, concurrent programming, object-oriented programming.

## 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.
537. (ECE 562) Mini- and Microcomputers. Cr. 4

Prereq: CSC 451 or former 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.
542. Introduction to Computer Networking. Cr. 3

Prereq: CSC 442 or former 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.

## 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; aquisition 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, sigmented files, windowing and clipping, camera models, and 3-D transformations.

## 588. Principles of Natural Computing. Cr. 3

Prereq: senior or graduate standing. Introduction to basic principles of information processing in biological systerns; similarities and differences between biological systems and computer; implication of biological information processing principles and mechanisms for artificial intelligence.

## 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.
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.
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.
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.
632. (ECE 665) Fault-Tolerant Computer Architecture. Cr. 4 Prereq: CSC 451 or former 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.
638. Microprogrammed Computer Design. (ECE 565). Cr. 4 Prereq: CSC 451 or former 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 442 or former 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.

## 651. Theory of Computation. Cr. 3

Prereq: CSC 450. Finite state machines; automata; determinism and indeterminism; regular expressions; grammars and formal languages; Chomsky's hierarchy; parsing; pushdown automata; Turing machines.

## 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.

## 658. Analysis of Alogrithms. 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.

## 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; unsymmetic eigenvalue problems; the QR algorithm.
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.
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; knowiedge representation technique; discussion of applications in various areas.

## 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
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 .


## CRIMINAL JUSTICE

Office: 701-711 Mackenzie Hall
Acting Chairperson: Mary C. Sengstock
Professor
Louis L. Friedland (Emeritus)
Associate Professor
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Thomas M. Kelley
Lecturer
Thomas M. Mieczkowski
Degree Programs

## Bachelor of Science in Criminal Justice

* Master of Science in Criminal Justice

Criminal Justice is organized society's primary formal means of social control. Generally, it is the practice of public and private agencies and groups which seek to prevent, control, adjudicate, punish, correct, and defend juvenile delinquents, criminal suspects, and convicted offenders. The core of the criminal justice system is comprised of police agencies, prosecutors, defense attorneys, courts, and correctional agencies. This system enforces federal and state laws and provides numerous other services. Criminal justice is part of a larger administration of justice complex which involves court administration, juvenile justice, and public and private security.

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 the criminal justice system. Research courses give students the tools with which to independently analyze criminal justice and skills important for career development. Legal courses foster an awareness of the values of due process and the limits of governmental power in a democratic society.
Career opportunities in criminal justice include roles as police officers, supervisors, and executives; criminal justice investigators working for public defenders, prosecutors, fire departments, and insurance companies; correctional officers for whom a college degree is mandatory, such as probation officers, parole officers, and community corrections specialists. Other specialized roles in criminal justice include juvenile intake officers, juvenile probation officers, volunteer administrators, criminologists, forensic scientists, forensic psychologists, medical examiners, and policy analysts.

## Bachelor of Science <br> in Criminal Justice

The Bachelor of Science program stresses a broad undergraduate education designed to enhance the student's liberal arts background in the social sciences and humanities. Required courses expose a criminal justice major to all aspects of the justice system and foster a systemic view rather than a specialization in a single component of this field. Within this broad framework, courses which deal with specifie topics and pre-professional concerns are available. Concentrations within criminal justice may be fulfilled by electing $12-18$ credits of criminal justice electives in particular areas, such as security, corrections, juvenile justice, law enforcement, and pre-law studies. Practical field experience is desirable and may be arranged for up to eight credits under the guidance of the field placement coordinator.

Admission requirements for this program are satisfied by the general requirements for undergraduate admission to the University; see page 13.

DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work including satisfaction of the University General Education Requirements (see page 20) and the College of Liberal Arts Group Requirements (see page 199), as well as the major requirements listed below. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively.

Major Requirements: Students majoring in criminal justice must complete twenty-eight credits in criminal justice core courses and at least twelve, but not more than eighteen, credits in criminal justice elective courses. Required courses are as follows.

## CORE COURSES



Students must select five of the following six courses:
CRJ 230 - Penology: Punishment and Corrections................................................. 3
CRI 240 - Introduction to the Judicial Process ............................................................... 4
CRJ 241 - Introduction to Juvenile Justice and Delinquency ................................ 3
CRJ 260 - Police Role in the Criminal Justice System ............................................ 4
CRJ 351 - Introduction to Security: Persons and Property........................................ 4
CRJ 586 - Research Methods ............................................................................... 3

## Cognate Study in Criminal Justice

The introductory course on the criminal justice system (CRJ 101) is designed to acquaint all students with contemporary problems and operations of police, prosecutors, courts, correctional agencies and juvenile justice institutions. Other survey courses in these areas and in security administration (CRJ 230, 240, 241, 260, and 351) may be of interest to students in business administration, health care, social work, journalism, and other public service fields.

Minor in Criminal Justice: The Department offers a minor in Criminal Justice for which the notation of a minor appears on the student's transcript. The required Criminal Justice courses are:
Credits
CRJ 101 - Introduction to the Criminal Justice System ..... 3
CRI 230 - Introduction to Corrections and Penology ..... 3
CRJ 240 - Introduction to the Judicial Process ..... 4
CRJ 260 - Police Role in the Criminal Justice System ..... 4
CRJ 571 - Constitutional Aspects of Criminal Law ..... 4
Criminal Justice Elective ..... 3-4
TOTAL: 21-22

Students wishing to minor in criminal justice are encouraged to visit the Departmental Offices for information and counseling. A minor may be declared when filing for graduation.

Pre-Law Advising and Curriculum: Students wishing to major or minor in criminal justice and who are considering legal careers should notify the Department's adviser at the beginning of their junior year and arrange a conference with a pre-law adviser. For non-majors wishing to take a pre-law sequence of courses in criminal justice the following are recommended:

| CRJ 101 | em |
| :---: | :---: |
| CRJ 240 | Introduction to the Judicial Process |
| CRJ 326 | ................Investigation |
| CRJ 571 | Constitutional Aspects of Criminal Law |
| CRJ 572 | .....Criminal Law |
| J 595 | Criminal Justice |

Also see pre-law courses in Undergraduate Curricula, page 203.
Graduate Study: Graduating seniors who are planning graduate study in criminal justice may qualify to complete approved course work toward the Master of Science in Criminal Justice degree under the SENIOR RULE provision. Minimum requirements for Senior Rule study include: a 3.0 Honor Point Average for the jumior and senior years of study, and at least one (but not more than ten) credits remaining to be completed for the undergraduate degree. Additional limitations and requirements apply for this status and for continuing graduate study in criminal justice. Interested seniors should consult with their undergraduate adviser for further information.

A more complete discussion of the Master of Science in Criminal Justice degree program appears in the Wayne State University Graduate School Bulletin.

## Honors in Criminal Justice

The Honors Program in Criminal Justice is open to students of superior academic ability who are majoring in criminal justice. To be recommended for an honors degree from this department, a student must maintain a cumulative honor point average of at least 3.3. $\mathrm{He} /$ she must accumulate at least fifteen credits in honors-designated course work from various departments in the College, including honors requirements within Criminal Justice, and including at least one 400 -level Honors Program seminar (consult the Schedule of Classes under 'Honors Program'). The Honors student must demonstrate the ability to do an original Honors Thesis during the senior year. For information about the requirements of the department's honors curriculum, contact the Chairperson of the Department, or the Director of the Liberal Arts Honors Program (577-3030).

## COURSES OF INSTRUCTION ${ }^{1}$ (CRJ)

## 101. Introduction to the Criminal Justice System. Cr. 3

Survey of criminal justice system. Agencies and processes include: police, courts, bail, prosecution, defense, plea bargaining, trial, sentencing, community corrections, jails and prisons.
230. Penology: Punishment and Corrections. (SOC 384). Cr. 3 No credit after former CRJ 270. Description and analysis of legal, social and political issues affecting contemporary correctional theory and practice. Topics include: history of corrections; function and social structure of correctional institutions; institutional alternatives including diversion, probation and parole. Field trips to institutions and community correctional settings normally required.
240. Introduction to the Judicial Process. Cr. 4

An examination of the structure, powers, doctrines and judicial processes including the origin, nature and functions of judicial review in the criminal justice system.

## 241. Introduction to Juvenile Justice and Delinquency. Cr. 3

No credit after former CRJ 291. Overview of the juvenile justice system, interrelationships with other components of the criminal justice system. Evaluation of law enforcement approaches to police-juvenile contacts.

## 260. The Police Role in the Criminal Justice System. Cr. 4

 Role of the police officer in relation to the customs and problems of the community and to other elements in the criminal justice system. Comparative analysis of techniques being used by law enforcement agencies to deal with crime.324. Traffic Control. Cr. 3

Essentials of traffic law; organization of traffic functions. Enforcement policies and procedures. Identification and analysis of traffic problems. Experiments in traffic control.
326. Investigation. Cr. 3

Prereq: CRJ 101. Overview of the history of criminal investigation, the functions of police investigators, crime scene search and evidence processing, an introduction to criminalistics, locating and interviewing witnesses, examining the elements of proof required in specific criminal offenses and interrogation techniques (pre- and post-Miranda).
(Y)
333. Industrial Fire Protection. Cr. 3

Fire prevention and loss control. Essentials for security officers of fire causation, fire suppression and fire prevention.

## 334. Fire and Arson Investigation. Cr. 3

An integral part of the fire science curriculum in the field of criminal justice related to provisions for public safety.
351. Introduction to Security: Persons and Property. Cr. 4 No credit after former CRJ 231. Historical, philosophical and legal framework for security operations; detailed presentations of specific security processes and programs currently and historically utilized in providing security; operational view of specialized areas of security in loss prevention management.
385. (SOC 382) Criminology: Crime and the Criminal. Cr. 3 Criminality as a socio-legal phenomenon. Descriptive analysis of the criminal justice system: police, prosecution, courts, corrections. Interdisciplinary review of criminological thought and theory; methods of reporting and studying crime victimology, crimes of violence,

[^49]organized crime and white collar crime.
480. (SOC 480) Outsiders, Outcasts and Social Deviants. Cr. 3 Definition and characteristics of behaviors which have, at times, been considered deviant, such as: criminality, mental illness, alcoholism, drug addiction, abortion, prostitution, and pornography. Interdisciplinary theories introduced to facilitate understanding of those behaviors, their diagnosis, management, control, and prevention.
490. Directed Study. Cr. 1-3

Prereq: criminal justice major; written consent of instructor. Open only to Criminal Justice majors. Independent reading or research in a particular facet of criminal justice, culminating in an extended paper or research report prepared under direct supervision of faculty.
498. Honors Thesis in Criminal Justice. Cr. 3-6

Prereq: senior standing; 3.3 h.p.a. Open only to criminal justice majors. Research problem to be completed under the direction of a faculty member.
506. Comparative Criminal Justice Systems. Cr. 3

No credit after former CRJ 650. Selected criminal justice systems in other nations.
515. Introduction to Forensic Sclence. (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 may include: toxicology, forensic pathology, fingerprints, ballistics, analysis of the human skeleton, body fluid identification.
528. Pro-Seminar: Evidence. Cr. 3

Prereq: minimum of 9 credits in criminal justice. Admissability of evidence in courtroom proceedings, problems of hearsay, real, and administrative evidence, circumstantial and testimonial evidence; and application to law enforcement officers.
534. Community Based Corrections. Cr. 3

Prereq: CRJ 230. 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.
552. Advanced Securty 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.

## 554. Terrorism and the Urban Soclety. 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.
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.

## 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.
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.

## 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.
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.
586. Research Methods. Cr. 3

Planning and design for research in criminal justice and related fields. Application of selected methods.

## 594. (PCS 500) Dispute Resolution. Cr. 3

Overview of the processes and sectors in the field of dispute resolution including negotiation, mediation, arbitration, and conciliation.
595. Special Topics in Criminal Justice. Cr. 3 (Max. 9)

Prereq: CRJ 201. No credit for repeated section.
600. Field Studies. (U S 600). Cr. 1-8(Max. 8)

Prereq: written consent of adviser. A comprehensive internship program involving various criminal justice agencies. Placement may be made in court, corrections, police, juvenile justice, and other agencies at the state, county and local levels; work opportunities include agency procedure and policy, patrol, case analysis, report writing and research.
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.
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.
623. Advanced Law Enf orcement Administration. Cr. 3

Prereq: CRJ 101. Police-management problems; organization and objectives, planning and coordination, public relations and support.
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.

## 643. Counseling Strategies with Youthfui Offenders. Cr. 3

Prereq: CRJ 241. No credit after former CRJ 691. Application of causal theories to counseling strategies. Models for offender classification and treatment. Counselor attitudes and styles. Special issues in the treatment of delinquents. Individual and group models for
counseling. Evaluation models to assess counseling effectiveness. (B)
660. Social and Legal Dynamics of Child Abuse. Cr. 3

Prereq: CRJ 241. Dynamics and psychopathology of child abuse: its incidence and impact on the family, society, and the numerous social and legal agencies involved in the detection, processing, and treatment of both child abusers and the abused.
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.
686. (SOC 686) Organized Crime: Its History and Social Structure. Cr. 3
Prereq: CRJ 385 or SOC $\mathbf{3 8 2}$. 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.


## ECONOMICS

Office: 960 Mackenzie Hall

Chairperson: Allen C. Goodman

## Professors

David I. Fand, Thomas J. Finn, Jr., Allen C. Goodman, Michael R. Haines, Mark L. Kahn (Emeritus), Jay H. Levin, John M. Mattila (Emeritus), John D. Owen, Douglas S. Paauw (Emeritus), Lawrence H. Seltzer (Emeritus), Wilbur R. Thompson (Emeritus), C. Emery Troxel (Emeritus)

## Associate Professors

R. King Adamson (Emeritus), Ralph M. Braid, James L. Hamilton, Li Way Lee

## Assistant Professors

Anthony Owusu-Gyapong, Allen J. Scafuri, Stephen J. Spurr

## Lecturers

Bharati Bhattacharyya, Gautam Bose

## Visiting Associate Professors

Gautam Bhattacharyya, An-loh Lin

## Adjunct Professor

Paul J. Feldstein

## Adjunct Assistant Professor

Michael H. Thomson

## Degree Programs

## Bachelor of Arts—with a major in economics

* 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, and Master of Arts in industrial relations, in the Wayne State University Graduate School Bulletin)

Economists frequently describe their work as the study of how individuals and societies allocate limited resources to try to satisfy unlimited wants. Economics is a science of choices. Households and firms must decide what and how much to consume or produce and how much to pay for products and for the use of labor, land and capital. The federal government makes decisions affecting inflation and unemployment, taxation and expenditures, the monetary system and international trade. Together these public and private choices determine the nation's prosperity and shape the distribution of its wealth. Since every social relationship has economic aspects, an understanding of economic principles and systems is an integral part of a liberal education.

[^50]Economics majors have a wide choice of courses and careers. Many supplement their major with cognate courses to prepare for careers in business, journalism, health care administration or public service. Others find it excellent preparation for law school. Undergraduates who want to do graduate work in economics need a good mathematics background. Ph.D. graduates are in demand at universities, corporations, financial institutions and government agencies. M.A. graduates may teach at junior colleges but more typically go into business or public service.

## Bachelor of Arts in Economics

Admission requirements for the College are satisfied by the general requirements for undergraduate admission to the University; see page 13, as well as the instructions for declaring a major (page 200). The Economics Department assumes that all students in economics course have had at least two years of high school-level algebra and one year of geometry.

DEGREE REQUIREMENTS: Candidates for the Bachelor's degree must complete 120 credits in course work including satisfaction of the College of Liberal Arts Group Requirements (see page 199) and the University General Education Requirements (see page 20), as well as the major requirements listed below. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively.

Major Requirements: Students considering an economics major should take ECO 101 and 102 as soon as possible, preferably in the freshman year. They should also pass MAT 150 or 180 prior to the junior year or demonstrate eligibility for MAT 201 in the mathematics qualifying examination.

A major consists of thirty-two credits in economics. These must include Economics 101 and 102 (Principles of Macroeconomics and Microeconomics), Economics 500 and 505 (Intermediate Microeconomics and Macroeconomics), and Economics 410 and 510 (Statistics). The Department recommends that majors complete all of these courses by the end of their junior year.

Majors must elect at least one course in three of these fields: industrial organization, international economics, labor and human resources economics, public finance, economic history and development, money and banking, and urban and regional economics. Each student should consult his/her major adviser to choose the economics electives best suited to his/her intellectual and professional aims.

A maximum of four credits in accounting may be counted as credit in economics.

To satisfy the General Education Major Competency Requirement, Economics majors must have a cumulative honor point average of 2.0 in their economics courses.

English Proficiency: As part of the University's General Education Requirements, students must demonstrate that they can write effectively about topics in their field for an audience of professionals in that field. To enable the Department to evaluate their writing proficiency, economics majors must submit one term paper to the Department's Committee for Undergraduate Studies. Field course writing assignments are acceptable, as are term papers written in economics directed studies or seminars. Each paper submitted must be certified by the assigning faculty member as satisfying the writing proficiency requirement.

Cognate Courses: Economics majors should consult their adviser about cognate courses. Majors may earn as many as sixteen cognate credits in business courses. Courses in other social sciences and in computer science are also useful complements to economics. Majors
who plan graduate study in economics are encouraged to take the Mathematics 201 sequence as early as possible. Cognate credits contribute to the 120 credits required for graduation, but they do not count toward the required thirty-two credits in economics.

Combined Curriculum for Teaching Certificate: Economics majors wishing to enter secondary teaching should see page 208 for a description of the requirements and procedures for combining a degree in Liberal Arts with a teaching certificate. Students must complete the Economics major requirements as part of their program of study.

## Honors Program

Economics majors with strong academic records and an interest in research are urged to apply to the departmental undergraduate adviser for admission to the Honors Program. Applicants should have overall honor point averages of 3.3 or above.

Honors majors must take Economics 498, the Senior Honors Seminar, during their last two semesters before graduation. They conduct research for the seminar under the close supervision of an Economics faculty member and write their results as an honors thesis, the length of which depends on the nature of the research project. Honors majors also must elect at least one 400 -level seminar offered by the Honors Program. (See the Schedule of Classes under 'Honors Program' for seminar topics.) Finally, the student must accumulate at least fifteen credits in honors-designated course work, including Economics 498 and the Honors Program Seminar. These honors credits need not be in the Economics Department. Those who successfully complete these requirements and finish their undergraduate course work with an overall honor point average of 3.5 or above will graduate with the degree designation 'With Honors in Economics'. For additional information on other honors-designated course work available each semester, see the Liberal Arts section of the University Schedule of Classes under 'Honors Program,' or contact the Director of the Honors Program (577-3030).

## Minor in Economics

A minor consists of twenty-one credits in Economics. These must include ECO 101, 102, and two of the following three courses: ECO 410 (Statistics), 500 (Intermediate Microeconomics), and 505 (Intermediate Macroeconomics). Other courses are elective.

## The Samuel M. Levin Award

Economics undergraduates are eligible to enter in the annual essay competition for the Samuel M. Levin Award. Essays are judged by a faculty committee, which awards a cash prize of $\$ 1000$ provided that an entry of sufficient merit is received. The award fund is supported by private donations in honor of Samuel M. Levin, the Department's first chairperson, and is intended to encourage research and publication in economics.

## COURSES OF INSTRUCTION ${ }^{1}$ (ECO)

## Introductory Economics

## 100. (SS) Survey of Economics. Cr. 4

Not for major credit. Scope of economics and the task of the economist in modern society; the market economy - its evolution and development; non-market economies; economic problems and prospects in the contemporary world.

## 101. (SS) Principles of Macroeconomics. Cr, 3-4

Problems of unemployment and inflation; money, banking, the price level; public policies to promote stability and growth.

## 102. (SS) Principles of Micreeconomics. Cr. 3-4

Supply, demand, price at the level of the firm and industry; business institutions and their operation; determinants of wage and salary levels, interest rates, rent, profits, income distribution; public policy in relation to business and labor.

## 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 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.
(W)

[^51]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.

## Field B: Quantitative Methods

410. Economic and Business Statistics I. Cr. 3

Prereq: ECO 102; MAT 150 or MAT 180 or equiv. based on satisfactory score on mathematics placement examination. Introduction to statistical inference; probability, including subjective probability; expected value and variance; sampling distributions and elementary problems of estimation and hypothesis testing.
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.
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.

## Field C: Industrial Organization

## 320. Public Control of Business. Cr. 3

Prereq: ECO 102. Public policies to improve the social performance of industry. Industry structure and monopoly power; antitrust policies concerning monopoly power, mergers, and pricing; problems and policies in regulating industry.
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.
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.

## 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.
525. Economic Analysis of Law. Cr. 4

Prereq: ECO 100,101 , or 102 ; one year of calculus recommended. Applied price theory; economic analysis of substantive and procedural issues of law.

## 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.

## 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.

## Field E: Labor and Human Resources

441. Labor Institutions. Cr. 4

Prereq: ECO 102. The changing labor force; development, structure, and philosophy of United States unionism; collective bargaining; bargaining power and the role of the strike; substantive union-management issues; public labor policies.
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.
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.
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)

## Field F: Public Finance

## 550. Public Finance: Taxation. Cr. 3

Prereq: ECO 102 or consent of instructor. Role of taxation in a 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.
551. Public Finance: Expenditures. Cr. 3

Prereq: ECO 102 or consent of instructor. Role of government in a 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.
555. Economics of Health Care. Cr. 4

Prereq: ECO 100, 101, or 102. Allocation of health care resources, with respect to demand and supply of health care. Roles of hospitals, physicians, and health insurance; market imperfections and their role in economics of health care.

## Field G: Economic History and Development

361. Honors Comparative Economic Systems. Cr. 4 Prereq: ECO 101 or 102 or consent of instructor. Open only to Liberal Arts Honors students. No credit after ECO 561. Comparative analysis of capitalism, socialism, communism; emphasis on differences in pricing, allocation of resources, functional and personal distribution of income, economic planning.
362. Economic Development of the United States. Cr. 3

Prereq: ECO 101 and 102 or consent of instructor. Economic development and modernization of the United States from colonial times to the twentieth century; emphasis on economic, social and technical changes which accompanied industrialization.
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.
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.

## 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)

## Field I: Urban and Regional Economics

## 180. (SS) Contemporary Urban Problems. Cr. 3

No credit after ECO 100. Analysis of urban problems from an economic standpoint: basic economic theory applied to understanding urban problems; particular emphasis on Detroit.

## 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.

## Directed Readings and Special Courses

## 390. Directed Study. Cr. 1-3(Max. 6)

Prereq: senior standing with 12 or more credits in economics with grade A or B. For the student who shows evidence of ability and interest in economic study and who desires opportunity for advanced reading in a special field. Arrange with adviser.
398. Professional Practice in Economics. Cr. 1(Max. 4)

Prereq: junior or senior standing and consent of co-op coordinator. Open only to students in Economics Co-op Program. Offered for S and $U$ grades only. Review of practical experiences in economics as a result of participation in the Economics Co-op Program of work-study.
496. Research in Economics. Cr. 3-12(Max. 12)

Prereq: consent of department prior to registration; senior standing with 12 or more credits in economics with grade A or B. Economic research on an appropriate topic of the student's choice, conducted under faculty supervision.
498. Senior Honors Seminar. Cr. 4 (8 req.)

Prereq: economics honors program, senior standing, major in economics. Must be elected two successive semesters. Research methodology, reading and discussion in areas selected by the seminar instructor. A senior honors essay.


## 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 (Emerita), Chester H. Cable (Emeritus), Suzanne Ferguson, Samuel A. Golden (Emeritus), Arnold L. Goldsmith, C. Yates Hafner, Patricia E. Hernlund, Daniel J. Hughes, Orville F. Linck (Emeritus), Arthur F. Marotti, Ralph L. Nash, Joseph Prescott (Emeritus), John R. Reed, Herbert M. Schueller (Emeritus), Alfred Schwarz (Emeritus), Robert M. Strozier II, Marilyn L. Williamson, Beongcheon Yu

## Associate Professors

Michael J. Bell, Alexander Brede (Emeritus), Barbara A. Couture, Walter F. Edwards, Bradford S. Field, Jeanne A. Flood, Alva A. Gay (Emeritus), Henry L. Golemba, Joseph A. Gomez, Isabel Graham (Emerita), David S. Herreshoff (Emeritus), Jerry Herron, Terrance J. King, Janet C. Langlois, Steven Lapointe, Bernard Levine, Donald MacDonald (Emeritus), Jay W. McCormick (Emeritus), William E. Mockler (Emeritus), Ross J. Pudaloff, Amy K. Richards (Emerita), Michael H. Scrivener, Edward Sharples, Elizabeth S. Sklar, Paul Sporn, Travis E. Trittschuh (Emeritus), Stephen H. Tudor, Anca Vlasopolos, Renata M. Wasserman

## Assistant Professors

Ellen Barton, Robert Burgoyne, Bernyce Cleveland (Emerita), Gerald MacLean, Martha Ratliff, Ruth E. Ray

## Visiting Assistant Professor

Gesa Kirsch

## Lecturers

Todd Duncan, Dorothy Huson, Gloria Lewis, Michael Liebler, Phoebe Mainster

## Adjunct Instructor

Ronald Kar
Director, English Language Institute
Michael Lyons

## Degree Programs

## Bachelor of Arts-with a major in English

* 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

[^52]
## Bachelor of Arts <br> With a Major in English

The English Department offers courses in several areas of study: literature, creative writing, film, folklore, linguistics, and professional writing. The bachelor of arts programs in English offer concentrations in these areas, providing both a liberal education and fundamental preparation for numerous careers. English majors enter careers in business and governmental service, writing, journalism, and publishing, as well as professions such as teaching, law and medicine. Majors often take up graduate study in English and related fields.

Admission requirements for this program are satisfied by the general requirements for undergraduate admission to the University; see page 13.

Advising: The Associate Chairperson of the Department and designated members of the Undergraduate Studies Committee provide advising to English majors. As soon as possible, and no later than the end of the fourth semester, the prospective major should consult an adviser in the Department to discuss a course of study.

English majors and minors are not exempt from the English Proficiency Examination in Composition.

DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work including satisfaction of the College of Liberal Arts Group Requirements (see page 199) and the University General Education Requirements (see page 20), as well as the major requirements listed below. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-200, respectively.

Credit Limitations: NO MORE than forty-six credits in the major field may count toward degree requirements. With the adviser's approval, appropriate English 590 (Directed Study) credit may count toward a major.

Major Requirements consist of eleven English courses beyond the University General Education Competency Requirement (see page 21). and include nine courses beyond the 200 level. (For exceptions in combined degree programs, see below.) Specific requirements are as follows:

1. English 311: Survey of English Literature to 1700.
2. English 312: Survey of English Literature after 1700.
3. One course in English literature chosen from the group numbered 510 through 519: Medieval and Renaissance.
4. One course in English literature chosen from the group numbered 520 through 529: Eighteenth- and Nineteenth-Century.
5. One Survey course in American literature chosen from among 314, 541 , and 542.

Concentrations: The remaining six courses must complete one of the following concentrations:
-Literature: This is the traditional English and American literature major, a general liberal arts program. It is strongly advised for students considering graduate programs in English and is also a recommended pre-professional major. Students in this concentration take the following:

1. One additional course chosen from the group numbered 509 through 559.
2. Three courses at the 500 level. English 220 (Shakespeare) may be substituted for one of these.

## 3. Two elective courses at the 200 level or above.

4. Students in this concentration are advised to take a Shakespeare course, a course in minority literature and more than the mimimum number of required courses at the 500 level.
-Creative Writing: The creative writing concentration is designed for English majors who are seriously interested in writing fiction, poetry or drama. The following courses complete the concentration:

## 1. English 280 (Imaginative Writing).

2. One course from English 381 (Poetry Writing); 382 (Fiction Writing); or 383 (Play Writing).
3. Three courses from English 587 (Poetry Writing Workshop); 588 (Fiction Writing Workshop); 589 (Writing for Theatre, Film and Television); 680 (Advanced Creative Writing).

## 4. One elective.

-Film: This concentration is for students who wish to study the aesthetic, theoretical and historical aspects of film in the context of an English major. Students interested in a major in film should consult Film Studies listings for details (see page 253). Courses completing the concentration are:

1. English 245 (Film Studies 201), Introduction to Film, or English 246 (Film Studies 202), History of Film.
2. Four film courses from among English 504 (Film Criticism and Theory); 505 (Literature into Film); 506 (Styles and Genres in Film); 507 (Topics in Film). English 506 and 507 may be taken more than once.
3. One elective.
-Folklore: The folklore concentration is designed for students interested in the study of oral arts, customs and beliefs, and material expressions of traditional cultures in the United States and throughout the world. Students choosing the folklore concentration may wish to add electives in anthropology and related areas. Wayne State University's Urban Folklore Archive, located in Purdy Library, is the oldest and most extensive collection of urban folklore materials in the United States. The following courses complete the concentration:
4. English 260 (Introduction to Folklore).
5. Four folklore courses: English 360 (Survey of American Folklore); 560 (Studies in Folklore); 565 (Folklore and Literature); 567 (Topics in Folklore and Folklife).

## 3. One elective.

-Linguistics: This concentration is for students interested in the descriptive and analytical study of English and in understanding the formal and semantic principles inherent in all languages. The following courses complete the linguistics concentration:

1. English 272 (Basic Concepts in Linguistics); or 570 (Introduction to Linguistic Theory).
2. Four courses from among the following: English 572 (Topics in Language); 573 (Traditional Grammar); 574 (Theory of Syntax); 576 (American Dialects); 577 (Sociolinguistics).

## 3. One elective.

- Professional Writing: This concentration is for students who are especially interested in technical or professional writing and composition theory. The following courses complete the concentration:

1. English 301 (Intermediate Writing).
2. Four courses from among the following: English 501 (Advanced Expository Writing); 578 (Approaches to Technical and Professional Writing); 579 (Writing Theory); 308 (Writing from Evidence). English 303 or 305 (English 580) may be substituted for one of these four courses.
3. One Elective.

## Honors Program Requirements

The English Honors Program is designed for the student who can profitably undertake a program of independent study and seminar work. Ordinarily, the student will enter this program at the beginning of the junior year. The program has three parts to be completed in the English Department:

1. The Honors Seminar: A student in English Honors completes nine to twelve credits in English 491 (Honors Seminar), usually in the course of the junior and senior years.
2. Other Course Requirements and Independent Reading: The honors student is required to take English 311, 312, and 314 (or 541 and 542) to acquire a general background in the history of English and American literature and may choose to fulfill the general requirements for an English major; however, it is possible for an honors student to have a double major or even to major in another field and take only that portion of the English Honors Program that appeals to him or her.
3. The Honors Essay: Directed by a professor of the student's choice, and normally written during the first semester of the senior year, the honors essay should be a substantial study in literature, literary theory, linguistics, folklore, or film. The essay is considerably longer than a conventional term paper but usually shorter than a master's thesis. The honors essay should be completed by April 1 for a June graduation and by November 1 for a December graduation.
4. To receive a degree with honors, a student must complete at least fifteen credits in honors-designated course work, including the English Honors Seminar and one 400 -level Honors Program seminar (consult the Schedule of Classes under 'Honors Program').

Additional University requirements for a degree with Honors in English can be obtained from the Director of the English Honors Program, or the Director of the Liberal Arts Honors Program (577-3030).

Students contemplating entering the English Honors Program should meet with the Director of the English Honors Program during their second year of course work.

## Combined Curriculum Requirements

Combined Curriculum for Secondary Teaching: An English major who wishes to prepare for a career in secondary school teaching must complete either the regular program for majors or the Honors Program. Information regarding this curriculum is on page 208.

Combined Curriculum with Dentistry, Law, or Medicine: (See page 201.) Students who wish to major in English and receive the Bachelor of Arts degree at the end of their first professional year of study are asked to complete six courses in English beyond the General Education and Liberal Arts Group Requirements. At least four of these must be above the 200 level.

## Cognate Study in English

College and University Requirements: All students in the University must pass English 102 (Introductory College Writing), and all students in the College of Liberal Arts must pass one designated writing-emphasis literature course at the 200 level to fulfill the College English Group Requirement. Those students whose scores on the English Placement Examination, taken prior to matriculation, indicate need for instruction and practice in composition will be placed in English 101 (Basic Writing) before they take English 102. (To take the English Placement Examination, students must apply upon admission to: Testing and Evaluation, University Counseling Services.)

In addition, designated English courses may be used toward fulfillment of the College and University philosophy and letters requirement (see page 199).

Courses at the 200 and 300 level are open to all undergraduates who have completed 102. Courses at the 500 level are open to both undergraduates and M.A. students. Senior standing is prerequisite to undergraduates' admission to all 600 -level courses. Only graduate students may register for 700 -level courses.

Students should note that some English courses have general titles which are constant while specific sub-titles change each semester. Students may elect such courses more than once, up to the maximum number of credits allowed.

The Minor in English: The minor in English requires six courses beyond freshman composition for a total of at least eighteen credits:
a. at least one course from the following: ENG 311, 312, 314
b. at least one course from ENG 509 through 559.

The remaining four courses may be selected to develop individual interests, provided that at least two more are selected from: ENG 220, $311,312,314$, and 500 -level courses.

No 100 -level course and no more than two 200 -level courses will count toward the minor.

The minor in English permits study in literature, film and literature, folklore, creative writing, linguistics, and expository writing. Students are invited, though not required, to discuss the minor with an English adviser.

The English minor in folklore is for students interested in the analysis of the oral and material aspects of a traditional culture. It requires a minimum of six courses. In addition to English 260 (Introduction to Folklore), the student chooses four courses from among English 360, 560,565 , and 567 , plus a cognate course selected from appropriate offerings in English or other departments. Folklore minors should consult with the undergraduate folklore adviser to set up an appropriate program. No more than two courses at the 200 level will count toward the minor, and no 100 -level course will count.

## COURSES OF INSTRUCTION ${ }^{1}$ (ENG)

## 010. Developmental English. Cr. 3

Prereq: admission to Project 350 . No degree credit. Offered for S and $U$ grades only. Intensive work in reading and writing. Emphasis on production of paragraphs and short essays which use the reading matter both for content and models. Emphasis on recognition and use of Standard English.

[^53]050. English Language Institute. Cr. 1-6

Offered for $S$ and $U$ grades only. No degree credit. Intensive course in English for speakers of other languages. Includes reading, writing, grammar, listening comprehension, and speaking. Six eight-week sessions per year.
052. English Language Communication Skills. Cr. 2

Prereq: teaching assistant who has failed SPEAK test; others by consent of instructor. Not offered for degree credit. Offered for S and $U$ grades only. American English language skills to improve teaching effectiveness of non-native speakers of English. Pronunciation, stress, intonation, speaking rate; oral presentation practice; cultural factors in U.S. university classroom.
101. Basic Writing. Cr. 4

Offered for S and U grades only. No credit toward English group requirement. Only two degree credits. One hour arranged. Extensive practice in fundamentals of college writing and reading in preparation for ENG 102. Required of students qualifying on the basis of the English Placement Test.
102. (BC) Introductory College Writing. Cr. 4

Prereq: placement or passing grade in ENG 101. One hour arranged. A course in writing and critical reading, including at least one appropriately documented paper based upon outside sources.
105. (BC) Freshman Honors: English I. Cr. 4

Open only to Honors Program students. Freshman seminar in reading and writing about fiction, poetry, and drama.
108. Writing Workshop. Cr. 2

Prereq: ENG 102 or equiv. Offered for $S$ and $U$ grades only. Open only to those failing the English Proficiency Examination. Only two credits apply toward degree. May be repeated one time only. Review of basic skills in writing and critical reading. Students must demonstrate writing proficiency on final exam in order to receive credit. Achieving an S grade in English 108 satisfies the English Proficiency Examination requirement.
110. Good Books. Cr. 4

For the general reader interested in exploring and appreciating a variety of good books from the past and present. Emphasis on various imaginative responses to human experience.
115. Short Story. Cr. 3

Selected readings in the international modern short story.
128. Science Fictlon. Cr. 3

Science fiction as art form; emphasis on major works by twentieth century American writers, with some attention to historical development.
170. English Grammar. (LIN 170). Cr. 3

Intensive course in the rules of English grammar and spelling, especially those rules needed for written work in college. Explication of the linguistic principles inherent in the rules of usage.
205. (IC) Freshman Honors: English II. Cr. 4

Open only to Honors Program students. Continuation of ENG 105.
210. (IC) Introduction to Poetry: Literature and Writing. Cr. 3 Introduction to techniques and forms of poetry through critical reading of, and writing about, poems of various types and from many periods.
211. (IC) Introduction to Drama: Literature and Writing. Cr. 3 Introduction to techniques and forms of drama through critical reading of, and writing about, representative plays from various traditions and periods.
212. (IC) Introduction to Fiction: Literature and Writing. Cr. 4 Introduction to techniques and forms of fiction through critical reading of, and writing about, short stories and novels.

## 216. (PL) European Literature I: Classical Through Renaissance. Cr. 3

Comparative approach to European national literatures in the historical periods from 500 B.C. to 1650 A.D. From Homer, Vergil, and Beowulf, to Dante, medieval romances, Spenser, Shakespeare, and Milton.
217. (PL) European Literature II: Renaissance to Modern. Cr. 3 Prereq: ENG 102. Comparative approach to European national literatures in the period 1650 A.D. to the present.
219. (PL) Asian Literature in Translation. Cr. 3

Prereq: ENG 102. Study of major religious, philosophical, and literary classics of Asia, in English translation.

## 220. (PL) Shakespeare. Cr. 3

Emphasis on the dramatic and literary qualities of the plays: representative comedies, tragedies and histories.
221. (IC) Great English Novels: Literature and Writing. Cr. 3

Critical reading of, and writing about, a representative sample of important and pleasurable English novels from the eighteenth century through the modern period.
231. (IC) Major American Books: Literature and Writing. Cr. 3 Critical reading of, and writing about, representative texts in prose, poetry, and drama by such writers as Emerson, Twain, Dickinson, O'Neill, Ellison.
239. (IC) Introduction to Afro-American Literature: Literature and Writing. Cr. 4
Introduction to major themes and some major writers of Afro-American literature, emphasizing modern works. Reading and writing about representative poetry, fiction, essays, and plays.
245. (FLM 201) (VP) Introduction to Film. Cr. 4

Material fee as indicated in Schedule of Classes. Examination of film techniques and basic methods of film analysis.

## 246. (FLM 202) (VP) History of Film. Cr. 3

Material fee as indicated in Schedule of Classes. Critical study of the motion picture as a modern visual art; screening and analysis of representative fiction films to illustrate important historical periods and genres.
250. (PL) The English Bible as Literature. Cr. 4

The King James text as a literary masterpiece.

## 257. (IC)Literature By and About Women: Literature and Writing.

 Cr. 3Introduction to the major themes and issues of writing by and about women. Reading and writing about representative fictional and non-fictional works.
260. Introduction to Folklore. Cr. 3

Introduction to the study of the oral literatures, customs, traditional beliefs and practices of selected folk communities.
267. (P S 270) Introduction to Canadian Studies. (HIS 270) (GEG 270). Cr. 3

Survey of Canada in its cultural, literary, historical, geographical and political aspects; key concepts and social patterns that define the Canadian experience.
270. Introduction to Contemporary English. (LIN 270). Cr. 3 Ways in which use of language affects communication: denotation and connotation, analysis of language of advertising, business, government and education.
(Y)
271. Linguistic Approaches to Language Acquisition. (LIN 271). Cr. 3
Current models of child first-language acquisition and kinds of evidence supporting them; topics may include: debate over innateness, issues in adult second-language acquisition, relations between acquisition and adult language breakdown (aphasia).
272. (PL) Basic Concepts in Linguistics. (LIN 272). Cr. 3

Analysis of the structure and use of language, focusing on English, from the standpoint of current linguistic practice. Topics include: phonetics and sound structure, word structure, syntax, semantics, language origin and history, dialects, language learning and animal communication, and language in social interaction.
273. Languages of the World. (LIN 273). Cr. 3

Prereq: ENG 102. Survey of structure of major language families of the world, western and non-western; interrelationships of language and culture; universals and variations of universals in language and culture.
280. Techniques of Imaginative Writing. Cr. 4

Writing in various creative forms. Frequent individual conferences and student readings for class criticism.
299. (PL) Sophomore Honors Colloquium: Literature. Cr. 3

Prereq: ENG 102 or equiv.; consent of director of Honors Program. Literary theme, figure or genre with individualized study. Topics to be announced in Schedule of Classes .
301. (IC) Intermediate Writing. Cr. 3

Prereq: ENG 102 or equiv.; and proof of passing English Proficiency Examination. Intermediate course in writing and critical reading, building upon skills taught in ENG 102. Areas of emphasis may include: analyzing and synthesizing written material, writing essays in a variety of rhetorical modes, developing style, and improving research skills.
303. (IC) Writing the Research Paper. Cr. 3

Prereq: ENG 102 or equiv.; and proof of passing the English Proficiency Examination. Instruction in methods of academic research, including evaluation of sources and appropriate documentation. Requires at least one substantial research paper. (T)
305. (IC) Technical Communication I: Report Writing. (ENG 580). 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.
306. (OC) Technical Communication II: Writing and Speaking. (ENG 581). Cr. 3
Prereq: passing English Proficiency exam or ENG 108; 305. Continuation of technical reporting techniques introduced in ENG 305, 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.
308. Writing from Evidence. Cr. 3

Prereq: ENG 102 or equiv. Argumentative and persuasive writing; analysis and evaluation of factual and inferential proof.
311. (PL) English Literature to 1700. Cr. 3

Selected works from such writers as Chaucer, Spenser, Shakespeare, Donne, Milton. Required of English majors.
312. (PL) English Literature After 1700. Cr. 3

Selected works from such writers as Swift, Pope, Wordsworth, Dickens, Tennyson, Eliot, Hardy. Required of English majors. (T)
314. (PL) Survey of American Literature. Cr. 3

Historical survey of American literature from the colonial period through the twentieth century with emphasis on nineteenth and early twentieth centuries.
330. English and American Authors. Cr. 3(Max. 12)

Chief works of a major author or several authors. Literary techniques, innovations, themes and historical context. Authors such as Chaucer, Dickens, Faulkner, Twain, Woolf. Topics to be announced in Schedule of Classes .
340. Literary Themes and Genres. Cr. 3(Max. 12)

Literature in a topical or thematic context. Topics such as initiation, metamorphosis, politics and the novel, the epic, satire, recent experimental fiction. Topics to be announced in the Schedule of Classes .
347. Survey of Afro-American Literature. Cr. 3

Historical survey of Afro-American literature from Colonial times through the twentieth century.
350. Women's Lives. (HIS 377). Cr. 3(Max. 6)

Examination of women's writings in various forms: diary, journal, autobiography, biography, essay, interview and film.
(Y)
360. Survey of American Folklore. Cr. 3

Survey of the oral literatures, the tall tale, customs, traditional beliefs and practices of selected folk communities of the United States, Canada, Mexico and the Caribbean in relation to American culture and society.
381. Poetry Writing. Cr. 3

Prereq: ENG 280. Instruction and practice in the art of English and American poetic forms: patterns of sound, quantitative values, diction, metaphors and images.
382. Fiction Writing. Cr. 3

Prereq: ENG 280. Fundamentals of fiction, mainly the short story. Analysis of stories by established writers and by students. Frequent individual conferences.
383. Play Writing. Cr. 3

Prereq: ENG 280. Basic instruction in the development of plays for stage and television, or of movie scenarios. Attention to the writing of dialogue.
490. Directed Study: Honors Program. Cr. 3-6(Max. 24)

Prereq: consent of English Honors Committee.
491. Honors Seminar. Cr. 3-6(Max. 24)

Prereq: consent of instructor or English Honors Committee. Honors seminar.
492. Honors Essay. Cr. 3

Prereq: senior standing; written consent of departmental honors adviser. Study in literature, linguistics, folklore or film directed by member of English faculty.
501. Advanced Expository Writing. Cr. 3(Max. 6)

Prereq: grade of $\mathbf{B}$ or better in an intermediate writing course or consent of instructor. Advanced study and practice in various forms of expository prose, especially the essay.
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.
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.
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.
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.
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.
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.
510. Literature of the Middle Ages. Cr. 3

Major works and genres of Old and Middle English; mostly in translation.
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.
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 .
514. Introduction to Old English. (ENG 610). Cr. 3

The fundamentals of language and grammar and the literary analysis of Old English texts.
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
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.
518. Milton. Cr. 3

Emphasis on Milton's major poems, with some attention to his prose and to backgrounds.
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 .
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.
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.
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).
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).
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.
530. Twentieth Century British Literature. Cr. 3

Selected works in all genres from 1900 to the present.
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.
540. American Literature to 1800. Сr. 3

A survey of American literature from the beginning through the Federalist period; transition from English/European heritages to ideas uniquely American.
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.
542. American Literature: 1865-1914. Cr. 3

A survey of the major writers, themes, movements: Dickinson, Twain, Crane, Howells, James; the local colorists, social critics, early pragmatists.
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. (I)
545. Modern American Literature. Cr. 3

A survey of major writers, themes, movements since 1914: Stevens, Frost, Eliot, O'Neill, Anderson, Hemingway, Faulkner; the world wars, modernism and post-modernism.
546. Topics in American Literature of the Twentieth Century. Cr. 3 (Max. 9)
Twentieth century literature from specific perspectives, such as generic, historical, thematic. Topics to be announced in Schedule of Classes.
(I)
548. Topics in 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, form, creation, performance, transmission, and cultural, historical, psychological and literary significance.
565. Folklore and Literature. Cr. 3

Identification and analysis of the interrelations of folklore and literature.
567. Topics in Folklore and Folklife. Cr. 3(Max. 9)

Topics such as fieldwork; analysis of collected oral literature; study of separate genres of oral literature, social folk custom, and folk arts. Topics to be announced in Schedule of Classes.
570. Introduction to Linguistic Theory. (LIN 570). Cr. 3

Basic concepts and methods of modern linguistics and their application to the study of the English language.
572. Topics in Language. (LIN 572). Cr. 3(Max. 9)

Topics such as phonology, morphology, semantics, pragmatics, language change, history of English, pidgins and creoles, psycholinguistic approaches, text grammar. Topics to be announced in Schedule of Classes.
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.

## 574. Theory of Syntax. (LIN 530). Cr. 3

Prereq: LIN 570. The theory of grammatical systems examined through analysis of sentence and word formation in a variety of human languages. Diversity and universals in grammar discussed and various theories of syntax reviewed.
576. American Dialects. (LIN 576). Cr. 3

Survey of chief social and geographic dialects of American English and introduction to theory of language variation.
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.
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.
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.

## 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.

## 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.
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.
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.
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.
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, television and motion pictures; practice in writing an original script or essay on some phase of contemporary dramatic form.
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 .
610. (ENG 514) Introduction to Old English. Cr. 3

The fundamentals of language and grammar and the literary analysis of Old English texts.
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.

## FILM STUDIES

Offices: 585 Manoogian; 413 State Hall
Co-Directors: Joseph Gomez, John Spalding
Advisory Committee
ENGLISH: Robert Burgoyne, Joseph Gomez
ROMANCE AND GERMANIC LANGUAGES: Andrea diTommaso
SPEECH: Darryl Fox, John Spalding, Jeanne Williams

## Degree Program

## Bachelor of Arts—with a major in Film Studies

Film Studies is an interdepartmental program that offers undergraduate students the opportunity to examine cinema from a variety of perspectives: as a visual and narrative art form, as an important social and cultural force in the twentieth century, as an industry, and as a technologically based communications medium. Introductory film (FLM) courses focus on the historical development of film and provide students with the necessary technical vocabulary to discuss the nature of the film experience. Advanced courses from participating departments (English, Italian, and Speech) continue historical and aesthetic studies, but they are also concerned with theories of film, particular genres and directoral styles, and the multiple relationships between film and other art forms. Additionally, the study of techniques and skills of film writing and production is also available.

Many students take film studies courses as electives complementary to other majors. Students who major in the program may be preparing for careers as film teachers, film librarians and achivists, film critics, script writers, or workers in film production. Additional study at the graduate level is usually necessary to achieve these goals, and an adviser should be consulted regarding available graduate programs.

The film studies program is administered by an advisory committee composed of specialists in this field from the three departments noted above. Interested students should consult one of the Co-Directors or a committee member whose field most closely approximates the student's interests.

## Bachelor of Arts <br> with a Major in Film Studies

Admission Requirements for this degree program are satisfied by the general requirements for undergraduate admission to the University; see page 13.

DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work including satisfaction of the College of Liberal Arts Group Requirements (see page 199) and the University General Education Requirements (see page 20), as well as the major requirements listed below. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively.

Major Requirements: students majoring in film studies must complete a minimum of thirty-four credits, distributed as follows:

## CORE COURSES (Fourteen Credits)

Credits
FLM 201 - (VP) Introduction to Film .....  4
FLM 202 - (VP) History of Film ..... 3
SPF 540 - Techniques of Film/Video Production ..... 4
ENG 504 - Film Criticism and Theory .....  3
ELECTIVE COURSES (Twenty Credits)
ENG 505 - Literature into Film .....  3
ENG 506 - Styles and Genres in Film ..... 3
ENG 507 - Topics in Film. .....  3
FLM 390 - Directed Study ..... $1 \cdot 3$
ITA 515 - Advanced Study of Italian Cinema .....  3
SPF 502 - Studies in Film History .....
SPF 506 - Documentary and Non-Fiction Film. ..... 4
SPF 525 - Screenwriting. .....  3
SPF 546 - Motion Picture Animation Techniques ..... 3
SPF 544 - Film Production II .....  4

## Minor in film Studies

Completion of a minor in film studies requires nineteen credits including FLM 201 and any other selections from either the core or elective courses cited above under the Bachelor of Arts major program.

## COURSES OF INSTRUCTION ${ }^{1}$ (FLM)

## 201. (VP) Introduction to Film. (ENG 245). Cr. 4

Material fee as indicated in Schedule of Classes. Examination of film techniques and basic methods of film analysis.
202. (VP) History of Fijm. (ENG 246). Cr. 3

Material fee as indicated in Schedule of Classes. Critical study of the motion picture as a modern visual art; screening and analysis of representative fiction films to illustrate important historical periods and genres.

## 390. Directed Study. Cr. 1-3(Max. 6)

Prereq: consent of adviser; completion of minimum of twelve credits in film courses from FLM, ENG, or SPF.

# GEOGRAPHY AND URBAN PLANNING 

Office: 225 State Hall<br>Chairperson: Robert D. Swartz<br>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, Mel Ravitz (Emeritus), Sue Smock, L. Zimmerman

## Degree Programs

## Bachelor of Arts—with a major in geography

* 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.

## Bachelor of Arts <br> With a Major in Geography

Admission requirements for this program are satisfied by the general requirements for undergraduate admission to the University; see page 13.

DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work, including satisfaction of the College of Liberal Arts Group Requirements (see page 199) and the University General Education Requirements (see page 20), as well as the major requirements listed below. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively.

Major Requirements: A major in geography requires completion of thirty-two credits in the Department. Unless an exception is granted by the Department, courses taken should include: Geography 110, 200 or $310,302,580,642$ and Urban Planning 651.

Recommended Cognate Courses: The varied opportunities for specialization within geography warrant careful selection of cognate courses. Geography majors are encouraged to emphasize cognate courses in one or two disciplines. Choice of cognate courses should be discussed with faculty in the Geography Department.

## Honors Program

Superior students with an honor point average of 3.3 or higher may be admitted to the Honors Program in Geography. The honors major must elect one semester of a 400 -level Honors Program seminar and accumulate at least fifteen credits in honors-designated course work. Honors courses from any department in the College, including this one, all contribute to the fifteen-credit requirement. The honors major student is permitted to follow a course of study somewhat independent of standard requirements, through the election of Honors Directed Study (Geography 490). For information about other honors-designated coursework available each semester, including the required 400 -level Honors Program seminar, see the Liberal Arts section of the University Schedule of Classes, under 'Honors Program.'

## Minor in Geography

The discipline of geography compliments expertise and understanding in many other disciplines selected as majors. It specifically addresses the spatial processes and variations over space as they impact economic, social, political, historical, criminal, commercial and other phenomena. The courses listed below for a minor in geography are basic to all aspects of spatial analyses. It is strongly recommended that the student minoring in geography consult with faculty concerning the most appropriate selection of courses to complement his or her interests.

Requirements for a minor in geography are: twenty credits in geography including Geography 110 and 302.

## Internships

Students pursuing a Bachelor of Arts degree in geography and having at least twelve credits in geography may participate in an internship program: approximately fifteen to eighteen hours per week of work, for four credits. Students must register for GEG 660 . For details, contact the department chairperson.

## COURSES OF INSTRUCTION ${ }^{1}$ Geography (GEG)

## 110. (SS) World Regional Patterns. Cr. 4-5

Concepts and theory in analyzing areal relationships and distinguishing regional patterns of human activity; cultural factors and physical conditions (climate, landforms) as factors in regional delineations; comparisons and contrasts in regional economic development; analysis of concentrations/dispersals of human activity; local, national and regional phenomena in the interpretation of global patterns.

[^54]111. (U P 111) Urban Community. Cr. 3 or 4

Aspects of community growth and expansion, functions of cities, planning proposals, and social and physical development policy. (Y)
120. Earth Physical Systems. Cr. 4-5

The physical landscape as an ecologic assemblage: elements include landforms and surface processes, plate tectonics, soils, vegetation, and climate in lecture and laboratory.
200. 'SOC 250',' P S 200') $>$ Cr. 4

Prereq: sophomore standing. Urban phenomena both past and present, including the quality and nature of urban life; major concerns of urban areas; perspectives and techniques of various urban-related disciplines.
230. 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.

## 232. Historical Geography of the United States. (GEG 632). <br> 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 economics and inter-regional trade, and emergence of a national urban system.
270. (P S 270) Introduction to Canadian Studies. (HIS 270). Cr. 3
Survey of Canada in its cultural, literary, historical, geographical and political aspects; key concepts and social patterns that define the Canadian experience.
275. (FRE 275) Introduction to Quebec Studies. (HIS 275) (P S 275). Cr. 3

Survey of the French-speaking Province of Quebec in its cultural, literary, historical, geographical, and political aspects; key concepts and cultural patterns defining the Quebecois identity. Team taught in English.
300. Map Intelligence. Cr. 3

Map literature; visualization and reading topographic maps; functions of scale, graticule, military grid, orientation and use of maps as tools in field work.
301. Thematic Cartography. Cr. 4

Introduction to mapping skills in a series of exercises plus development of map compilation skills and techniques for portraying spatial data.

## 302. Spatial Organization: Concepts and Techniques. Cr. 3

Introduction to spatial organization concepts, survey research procedures and statistical techniques. Topics include: geographic problems, research design, models, data sources, sampling, questionnaire design and descriptive statistics.
(Y)
310. Economic Geography. Cr. 4

Basic principles of modern economic geography: population-resource foundations of the world's economic systems; spatial organization; locational theories and principles; problems of economic overdevelopment and underdevelopment.
313. (SS) Introductory Urban Geography. Cr. 4

An introduction to the geographer's view of cities, with emphasis on the North American city. Topics include the pre-industrial city, migration, evolution of the American urban pattern, city classification, city-regional relationships, and the city's internal structure (ethnic, residential, commercial, and industrial).

## 320. (SS) Western Europe. Cr. 3

Analysis of non-communist European countries. Emphasis on population changes, resource problems, industrial location, urbanization, regional development, and emerging economic and political unities.
340. The Physical Landscape. Cr. 4

Physical processes such as running water, glaciers, wave and wind action, plus the resultant erosional and/or depositional landforms.
390. Directed Study. Cr. 1-3(Max. 9)

Prereq: consent of adviser. Readings and research.
490. Directed Study: Honors Program. Cr. 2-12(Max. 16) Prerq: consent of chairperson.
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.
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.

## 580. Colloquium in Geography. Cr. 1

Prereq: eight credits in geography. Review and discussion of trends in the discipline and recent applied work.
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.
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.
624. Industrial Geography. (U P 552). Cr. 4

The location of industry in theory and practice, analysis of selected manufacturing industries and selected industrial regions. The role of 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 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.
630. Remote Sensing. (U P 630). 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.
632. (GEG 232) 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 economics 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 with 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 S and U grades only. On-the-job training, mostly in applied aspects of geography (retail location analysis, land use studies); some internships compensated. Internships are usually for one academic semester. (Y)

## 665. Computer Assisted Mapping. 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
Prereq: course in elementary statistics recommended. Introduction to computer software for spatial analysis, including spatial statistics, computer graphics, and computer cartography.
651. (U P 651) Urban and Regional Systems. Cr. 4

Theory course dealing with concepts, processes and organization of urban and metropolitan regions, primarily focusing on the western world experience. Some comparative prespective derived from non-western experiences. Primary focus on system structure and change.

## 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.

## 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.
531. Current Planning Practice. Cr. 3 or 4

Practical application of planning theory to current issues of planning and community development, including land use, economic development, and environmental concerns.

## 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.
621. Urban Design Elements. Cr. 3

Introduction to the role of urban design and the concept of design criteria, design variables, and terminology.
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.
651. Urban and Regional Systems. (GEG 651). Cr. 4

Theory course dealing with concepts, processes and organization of urban and metropolitan regions, primarily focusing on the western world experience. Some comparative prespective derived from non-western experiences. Primary focus on system structure and change.

## Urban Structure and 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.

## 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.

## 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 fot the elderly in commercial locations.
582. (ECO 580) Urban and Regional Economics I. Cr. 3

Prereq: ECO 101, ECO 102. Introducton 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.

## 602. Readings in Land Use Planning. Cr. 3 or 4

Analysis of development plans for new and existing communities; selected topics.
612. Planning Studies and Methods. Cr. 4

Economic base, population, and land use studies. Discussion of approaches used to solve selected community development problems.
632. Quantitative Techniques I. (GEG 642). Cr. 4

Statistical inference with emphasis on applications including control tendency, dispersion, hypothesis testing, correlation and regression.

## 652. Transportation and Planning. Cr. 4

Introduction to the role of transportation in the planning process involving both regional and urban considerations.

## 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.

## 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.
605. Financial Aspects of Urban Planning. Cr. 3 or 4

Costs and revenues of urban development in relation to land uses. Study of financial impact evaluations and methods of financial analysis.
665. Land Use Controls. Cr. 2-3

Techniques available to guide land development. Concepts in zoning, subdivision regulations, timing and sequence of land development.

## Other Courses

## 111. Urban Community. (GEG 111). Cr. 3 or 4

Aspects of community growth and expansion, functions of cities, planning proposals, and social and physical development policy. (Y)
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.
610. Studies in Urban Planning. Cr. 2-4(Max. 6)

Individual problems in urban planning.
630. (GEG 630) Remote Sensing. 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.
640. Planning Issues. Cr. 2-4(Max. 6)

Studies of urban policy issues as they affect land use. Social and economic determinants of the physical composition of urban areas.

## 662. Regional Planning Workshop. Cr. 4

Study and analysis of spatial differentiation. Examination of land use, demographic and other changes in emerging megalopolitan regions.

## GEOLOGY

Office: 201 Old Main<br>Chairperson: Robert B. Furlong

## Professors

Robert B. Furlong, Hugo Mandelbaum (Emeritus), Andrew J. Mozola (Emeritus), Willard H. Parson (Emeritus), Luciano B. Ronca

Assistant Professor
Jeffrey L. Howard

## Adjunct Associate Professor

Robert E. Mosher
Degree Programs
Bachelor of Arts-with a major in geology
Bachelor of Science—with a major in Geology

- Master of Science—with a major in Geology

Geology consists of studies of the materials of the earth and the processes to which they have been subjected, landscape features and their origins, and the history of the earth as recorded by rocks and fossils.

The courses in geology are planned to serve the needs of four groups of students: (1) those who desire a general knowledge of geology as part of a liberal education; (2) those who need geological information as a cognate subject in other professions; (3) those who wish to major in geology as part of a broad liberal education; and (4) those who plan to become professional geologists. Introductory courses are primarily general, but they also provide a foundation in geology for the student who desires to continue an intensive program of study. In addition, a variety of courses in various phases of geology is available to the general student. Intermediate and advanced courses are designed to develop the principles of geology beyond the elementary level and to give a firm technical foundation for advanced study.

Bachelor's Degrees: The Department of Geology offers undergraduate programs leading to a degree of Bachelor of Arts in Geology and Bachelor of Science in Geology. The Bachelor of Arts degree differs from the Bachelor of Science degree principally in the number and level of non-geology courses which the student is required to take. The Bachelor of Arts is designed primarily for students who intend to become secondary school earth science teachers, while the Bachelor of Science degree is suited to the student who intends to become a professional geologist and is required for those students intending to do graduate work in geology.

## Bachelor of Science <br> With a Major in Geology

Admission requirements for this program are satisfied by the general requirements for undergraduate admission to the University; see page 13.

[^55]DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work including satisfaction of the College of Liberal Arts Group Requirements (see page 199) and the University General Education Requirements (see page 20), as well as the major and cognate credits listed below. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively.

Major Requirements: Students must complete at least thirty-four credits in geology exclusive of the introductory courses (100-level) and including the following:

1. Twenty of the thirty-four credits from advanced courses (numbered 300 and above).
2. Geology $213,316,330,340,345$ or 410 , and 420 .
3. Six credits in field mapping and field techniques, to be fulfilled by completing six credits in Geology 365 offered as a summer field course, if such a course is available. If the Geology Department at Wayne State University does not offer a summer field course in any given year, students should complete the field mapping requirement by attending an approved field course at another university. In certain unusual circumstances the required six credits in field mapping and field techniques may be earned through an extended field-oriented research project when this project involves extensive field mapping and is under the direct supervision of a faculty member or other qualified field geologist throughout the duration of the field work.

Cognate Requirements: The program must include a year of calculus (Mathematics 201 and 202 or equivalent), a year of chemistry (or the equivalent of Chemistry 108) and a year of physics. The courses in chemistry should include Chemistry 105 for the student without high school chemistry, followed by Chemistry 108. For the student with some knowledge of chemistry, the Chemistry 107 and 108 sequence is satisfactory. It is recommended that the courses in physics include Physics 217 and 218 (both of these courses require introductory calculus). For those students who will not be able to complete introductory calculus prior to taking physics, Physics 213 and 214 will be acceptable. A foreign language is strongly recommended, but is not required.

Although there are no required cognate courses beyond those listed above, 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.

## Bachelor of Arts With a Major in Geology

This program is recommended as a background for secondary school earth science teacher preparation.

Admission requirements for this program are satisfied by the general requirements for undergraduate admission to the University; see page 13.

DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work including satisfaction of the College of Liberal Arts Group Requirements (see page 199) and the University General Education Requirements (see page 20), as well as the major and cognate requirements listed below. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively.

Major Requirements: Students must complete twenty-six credits in geology beyond Geology 102. These must include Geology 213, 316, $330,340,345$ or 410, and at least two credits in Geology 365.

Cognate Requirements: At least one college course in each of two of the following fields is required: biology, chemistry, or physics. Mathematics 180 and satisfaction of the Foreign Language Group Requirement are also required.

Geology majors should consult their adviser regarding additional recommended cognate courses. Depending on interest and future goals, supplementary courses in mathematics, physics and chemistry, as well as courses in computer science, civil engineering, and geography might be of particular value.

## Honors in Geology

The Honors Program in Geology is open to students of superior academic ability who are majoring in geology. To be recommended for an honors degree from this department, a student must maintain a cumulative honor point average of at least 3.3 . He/she must accumulate at least fifteen credits in honors-designated course work and must demonstrate the ability to do independent study and an original Honors Thesis during the senior year. For information about the requirements of the department's honors curriculum, contact the Chairperson of the Department, or the Director of the Liberal Arts Honors Program (577-3030).

## Minor in Geology

The Department offers a minor in geology for undergraduate students. The minor consists of twenty credits in geology (usually consisting of four courses). Although desirable courses for a student's minor program should be determined in consultation with Geology Department staff members, the following restrictions and recommendations should be noted: The minor must include Geology 101 and 102. Geology 100, 105,110 and 237 may not be applied for credit to a minor. At least four credits in the minor must be completed in courses at the 300 -level or higher. All minor programs must be approved by the Department Chairperson.

Anyone wishing to complete a minor in geology should contact one of the Department faculty members, or the Chairperson, as soon as possible, so that an appropriate program can be formulated.

## Assistantships and Awards

Student Assistantships: A limited number of undergraduate student assistantships are available for academically superior students after they have completed sufficient coursework to qualify (usually senior standing).

Awards: The Geology Undergraduate Student Merit Award is presented each year to an undergraduate 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 receipient's name permanently inscribed and displayed on a special display board in the office of the Department of Geology.

## COURSES OF INSTRUCTION ${ }^{1}$ (GEL)

## 100. Geology and the Environment. Cr. 4

Primarily for non-science majors. Geological aspects of man's use of his environment including geological hazards; water; waste disposal; occurrence, use and depletion of natural resources.

## 101. (PS) Geology: The Science of the Earth. Cr. 4

Material fee as indicated in Schedule of Classes. Introduction to continental drift and plate tectonic theory, geophysics and structure of earth's crust and interior; rocks and minerals; igneous and volcanic geology; work of running water, glaciers and ground water; geologic time; oceanography. One day field trip. Lecture and required laboratory.

## 102. Interpreting the Earth. Cr. 4

Prereq: GEL 101 or PHS 193 with a grade of C or better. Sedimentary rocks, sedimentary structures and fossils as tools for interpreting the history of the earth. Paleoecology of the geologic past and the structure of the earth are emphasized.
105. Oceanography. Cr. 4

Introductory course in oceanography; includes origin of the ocean basins; ocean currents, waves and tides; life in the oceans and marine ecology; food, mineral and energy resources of the sea.
213. Mineralogy. Cr. 4

Prereq: one course in high school or college chemistry. Material fee as indicated in Schedule of Classes. External morphology and internal arrangement of minerals. Identification of minerals by sight and simple physical and chemical properties. Properties and occurrences of major mineral groups.
316. Petrology. Cr. 4

Prereq: GEL 102 and 213. Material fee as indicated in Schedule of Classes. Origin, occurrence, alterations, classification, methods for determination of important rocks based on megascopic and microscopic characteristics.

## 330. Structural Geology. Cr. 4

Prereq: GEL 102 and high school trigonometry or equiv. Material fee as indicated in Schedule of Classes. Description and interpretation of features which result from the origin or deformation of rock masses.

## (F)

## 340. Principles of Sedimentology and Stratigraphy. Cr. 4

Prereq: GEL 102, 213 or consent of instructor. Material fee as indicated in Schedule of Classes. Processes which produce sediments, environments of deposition, changes after deposition. Relationship between tectonics and sedimentation. Origin of sedimentary strata. Facies and correlations.
345. Invertebrate Paleontology. Cr. 4

Prereq: GEL 102 or consent of instructor. Material fee as indicated in Schedule of Classes. Pateontology of invertebrates; evolutionary relationships between taxa and geological applications.
365. Field Geology. Cr. 1-10(Max. 16)

Prereq: consent of instructor. Field studies involving problems in individual geologic mapping and related techniques.
(W,S)
390. Directed Study. Cr. 2-6(Max. 10)

Prereq: consent of instructor, adviser, and chairperson. Primarily for honors students.
410. Fundamentals of Geophysics. Cr. 4

Prereq: at least one course in calculus and one in physics. Application of calculus to geological problems. Introduction to the geophysics of gravity, magnetism, seismology and heat transfer. Theory of radiometric dating. Methods and problems of exploration geophysics. Fundamentals of well logging.

## 420. Geomorphology. Cr. 4

Prereq: GEL 102. Material fee as indicated in Schedule of Classes. Principles underlying development of landforms by geologic agents.
496. Research. Cr. 3-4(Max. 8)

Prereq: consent of instructor, adviser, and chairperson. Primarily for honors students. Independent laboratory and field work.
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)
515. Soils and Soil Pollution. Cr. 3

Prereq: GEL 101, CHM 107, CHM 108. Physical, chemical and mineralogical properties and classification of soils. Behavior of pollutants in soils and methods for reclamation.

## 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.

## 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.
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.
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.
571. (BIO 571) Paleont ology 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.
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.
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, qualitiative and quantitative evaluations of aquifers.

## GREEK AND LATIN LANGUAGES AND LITERATURES

Office: 431 Manoogian Hall<br>Chairperson: Ernest J. Ament<br>\section*{Professor}<br>Richard W. Minadeo<br>\section*{Associate Professors}<br>Ernest J. Ament, Joel B. Itzkowitz, Kathleen McNamee, Kenneth R. Walters

## Senior Lecturer

Norma Goldman

## Lecturers

Ladislas Szymanski, Thomais Tsoutsou-Roussos

## Degree Programs

Bachelor of Arts-with a major in Classics
Bachelor of Arts-with a major in Greek
Bachelor of Arts-with a major in Latin
Bachelor of Arts-with a major in Classical Civilization

## - Master of Arts-with a major in Classics <br> * Master of Arts—with a major in Latin Graduate minor or cognate credit may be earned in Classics in English Translation and in Greek.

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. Additionally, service courses are available for students, such as the vocabulary-building courses Classics 123 - Word Origins: English Words from Greek and Latin; and Classics 124 - Etymology: Medical Terms from Greek and Latin.

* For specific requirements consult the Wayne State University Graduate
School Bulletin.


## Bachelor of Arts Degrees

Admission requirements for this program are satisfied by the general requirements for undergraduate admission to the University; see page 13.

A student who wishes to major or minor in the Department should plan his/her program with the Departmental major adviser as soon as possible after entering the University. Each program is arranged individually to combine the most varied advantages consistent with the student's interests and purposes, such as the desire to combine majors and minors for teacher certification, to acquire language skills needed for technical work in other areas of study, to enrich professional background, or to broaden general cultural development.

DEGREE REQUIREMENTS: Students must complete 120 credits in course work including satisfaction of the University General Education Requirements (see page 20) and the College of Liberal Arts Group Requirements (see page 199), as well as the major requirements cited below. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively.

Major Requirements in Classics: A major in Classics consists of twenty to twenty-four credits of concentration in either Greek or Latin, exclusive of Greek or Latin 101 and 102, plus sixteen credits of concentration in the other language. Recommended cognates are: CLA 220 and 240 , as well as those listed below.

Major Requirements in Greek: A major in Greek consists of thirty-two credits exclusive of Greek 101 and 102 and including any two Classics courses 300 level or above. Potential majors are also encouraged to elect Classics 101 (Classical Civilization) and 200 (Greek Mythology) during their freshman or sophomore year. For recommended cognates, see below.

Major Requirements in Latin: A Major in Latin consists of thirty-two credits exclusive of Latin 101 and 102 and including any two Classics courses, 300 level or above. Potential majors are also encouraged to elect Classics 101 (Classical Civilization) and 200 (Greek Mythology) during their freshman or sophomore year. For recommended cognates, see above.

Recommended Cognate Courses: All majors in the fields covered by the Department are strongly urged to take as much work as possible in the literatures of other languages, including English, as well as

| Art History 520. | Classical World: Minos to Alexander |
| :---: | :---: |
| Art History 521. | $\cdots$....... Hellenistic and Roman Art |
| History 533. | ................................Greece |
| History 534. | Rome |
| Philosophy 370 | .................... Philosophy of Art |
| Philosophy 541 | ................................Pato |
| Philosophy 542 | Aristotle |

Major Requirements in Classical Civilization: The major in Classical Civilization is an interdisciplinary study administered by this Department in cooperation with the Departments of Anthropology, Art History, English, History, Humanities, Philosophy, and Political Science. It is designed for students with particular interests in the development of the Classical tradition in Western culture. Without intensive work in the ancient languages, this major offers broad general education to students with graduate aspirations in the humanities or professions such as law and medicine. The breadth of the major also allows completion of a second major simultaneously, or heavier concentration in specific areas included in this program. Also, this major includes completion of the Liberal Arts Foreign Language Requirement. Interested students should contact the Department Undergraduate Adviser or the Department Chairperson.

## Core Requirements:

1. Fulfillment of the Foreign Language Group Requirement in either Greek or Latin ( 12 credits maximum).
2. Four Classics courses, from CLA 219 or above. ( $12-16$ credits)
3. Art History 520 (Classical World: Minos to Alexander) and 521 (Hellenistic and Roman Art). (6 credits)
4. History 533 (History of Greece) and 534 (History of Rome). (6 credits)
5. Philosophy 210 (Ancient and Medieval Philosophy) or Classics 300 (The Greek Philosophers). ( 3 credits)

Electives: 10-18 credits, with courses required from at least two departments, to be chosen from the following:


Total Credit Requirements for the Major: 37-49 credits, exclusive of the Foreign Language Requirement, with 27 credits required in the core area and $10-18$ credits in electives.

Combined Curriculum for Secondary Teaching: Students who are preparing to teach Latin in the secondary schools and who wish to obtain a B.A. degree with a major in Latin must complete the major in Latin as outlined above and the requirements for this curriculum set by the College of Education. For further information on this curriculum, see 'Secondary Teaching' in the Undergraduate Curricula section of this bulletin, page 208.

## Honors Program

Qualified majors may apply for participation in the departmental Honors Program. Only the student who has demonstrated superior ability in the field of Classical languages and/or literature and who shows promise of acquiring greater breadth and depth of knowledge through tutorial study will be admitted to the program. As preparation for admission, the student is required, during the freshman and sophomore years, to acquire basic knowledge of one of the languages (ideally, of both) and is encouraged to elect Classics 101 (Classical Civilization) and 200 (Greek Mythology).

Once the Honors candidate has been admitted to the program (normally at the end of the sophomore year) he/she shall fufill the normal requirements for the elected major. In the senior year students should elect a minimum of eight credits in Classics 490 , which will prepare and guide them in the writing of a Senior Honors Essay. One of the 400 -level interdisciplinary seminars offered by the Honors Program must also be completed, and the student must have acquired at least fifteen credits in honors-designated course work, including Classics 490 and the Honors Program seminar. Finally, written and oral comprehensive examinations must be successfully completed in the senior
year. The diploma of a successful honors candidate will read 'Graduation with honors in Classics' (or 'Greek' or 'Latin' or 'Classical Civilization').

Eligible students who are interested in the program should consult the department honors adviser. For information about additional honors-designated course work available each semester, contact the Director of the Honors Program (577-3030) or see the Liberal Arts section of the University Schedule of Classes under 'Honors Program.'

## Minors and Cognate Study

Minor Requirements in Classics: A minor in Classics consists of twelve to sixteen credits of concentration in either Greek or Latin, exclusive of Greek or Latin 101 and 102, plus twelve credits of concentration in the other language. Recommended cognates are: CLA 220 and 240, as well as those listed for majors in the Department; see above.

Minor Requirements in Greek: A minor in Greek consists of twenty credits exclusive of Greek 101 and 102 and including one Classics course, from CLA 219 or above. Potential minors are also encouraged to elect Classics 101 (Classical Civilization) and 200 (Greek Mythology) during their freshman or sophomore year. For recommended cognates, see those listed above for majors in the Department.

Minor Requirements in Latin: A minor in Latin consists of twenty credits exclusive of Latin 101 and 102 and including one Classics course, from CLA 219 or above. Potential minors are also encouraged to elect Classics 101 (Classical Civilization) and 200 (Greek Mythology) during their freshman or sophomore year. For recommended cognates, see those listed above for majors in the Department.

Minor Requirements in Classical Civilization: A minor in Classical Civilization consists of twenty-three to twenty-six credits distributed as follows:

1. Greek or Latin 101 and 102 (eight credits).
2. Two Classics courses, from CLA 219 or above (six to eight credits).
3. Art History 520 (Classical World: Minos to Alexander) or 521 (Hellenistic and Roman Art) (three credits).
4. History 533 (History of Greece or 534 (History of Rome) (three credits).
5. Philosophy 210 (Ancient and Medieval Philosophy) or Classics 300 (The Greek Philosophers) (three to four credits).

## Foreign Language Group Requirement

The student may satisfy the Foreign Language Group Requirement (see page 200) by passing the first three courses of either Ancient or Modern Greek or Latin, or by a special examination through which one might place out of the requirement. Students continuing the study of any of the above languages begun in high school or in another college should consult with Department undergraduate advisers to determine the level of study at which to continue in the Department (phone: 577-3032).

The satisfaction of the Liberal Arts Foreign Language Group Requirement also satisfies the University General Education Foreign Culture (FC) Requirement.

## University and College of Liberal Arts Group Requirements

As noted above, the first three semesters of ancient or modern Greek or Latin satisfy both the College of Liberal Arts Foreign Language Requirement and the University General Education Foreign Culture Requirement. Classics 101, 210, and 220 satisfy the Philosophy and Letters portion of the University and College Humanities Requirement; and Classics 200 satisfies the College of Liberal Arts Cultural Studies Requirement.

## Modern Greek Studies Scholarship

The Ministry of Culture and Science of the Hellenic Republic annually makes available one scholarship to a student of Modern Greek language and literature. The purpose of the scholarship is to enable the student to acquire a firsthand knowledge of Greece, its people and their way of life, and to establish personal contacts with cultural and scientific personalities in Greece. The annual summer program includes tours of archeological sites in Greece, visits to some of the Aegean Islands and attendance at such cultural events as the Epidauros Festival and the Athens Festival. For further information, consult with the department advisers.

## Intercollegiate Center for Classical Studies in Rome

The University is a member of the Intercollegiate Center for Classical Studies in Rome, a consortium of American colleges and universities set up to provide undergraduate students with an opportunity to study Greek and Latin literature, ancient history and archaeology, and ancient art in Rome. Students-preferably in their third year-are eligible to apply to study at the Center for a period of one or two semesters. The Department will help students who are accepted at the Center seek financial assistance if necessary and credit gained from study there will be accepted by the University. For further information, consult with the department chairperson or undergraduate adviser.

# COURSES OF INSTRUCTION ${ }^{1}$ <br> Classics in English Translation (CLA) 

NOTE: All of the Classics courses listed below are taught in English translation, with no knowledge of Greek or Latin required.

## 101. (PL) Classical Civilization. Cr. 3-4

Survey of the culture and civilization of Ancient Greece and Rome, in particular those aspects that laid the political, social, and cultural framework of the modern world.
123. Word Origins: English Words from Greek and Latin. Cr. 3-4 Vocabulary-building course designed to enlarge English vocabulary and increase understanding and spelling proficiency through a study of Greek and Latin roots of English words; aspects of interpreting and remembering legal, medical, and scientific vocabularies included. (T)
124. Etymology: Medical Terms from Greek and Latin. Cr. 3-4 Principles for recognizing and analyzing the basic components of medical terms derived from Greek and Latin. For students interested in medicine, dentistry, nursing, and allied scientific fields. No knowledge of a foreign language required.
200. Greek Mythology. Cr. 3-4

Typical myths related to religion, custom, ethics, philosophy, art, literature.

## 210. (PL) Honors Classical Origins of Western Thought. (HON 210). Cr. 3

Open only to Honors Program students. Classical foundations of contemporary Western Thought. Topics include: relations between the sexes, democracy, slavery, war, social criticism, rationality, relations between parents and children, literature and performing arts.
219. Daily Life in Arcient Rome. Cr. 4

Unit studies reconstructing the development and physical, social and moral milieu of Greco-Roman society at various periods.
(W)
220. (PL) Introduction to Greek Tragedy. Cr. 3-4

Dramatic and literary qualities of representative plays of Aeschylus, Sophocles and Euripides. The origin and development of Greek tragedy related to the enduring quality and contemporary relevance of these dramas.
240. Heroic Poetry: Homer and Vergil. Cr. 4

The hero, heroism, and other themes reflected in the epics of Homer and Virgil. Other ancient or modern authors may be read for comparison.
300. The Greek Philosophers. Cr, 3-4

Origin and development of Greek philosophical thought from the pre-Socratics through the age of Aristotle. Selected authors and works.
310. Law and Ancient Society. Cr. 3-4

Historical development from the Twelve Tables (fifth century B.C.) to the Digest of Justinian (sixth century A.D.); appraisal of the Classical Law (first century A.D. to third century A.D.), including status, slavery, property, contracts, and testamentary law; special attention to procedures. No special legal knowledge required.
325. Urban Study of Ancient Rome. Cr. 4

Development of Rome as an ancient urban center from the late Stone Age to the fourth century A.D., based on literary, historical and archaeological evidence.
490. Senior Honors Tutorial. Cr. 3-16(Max.16)

Prereq: consent of departmental honors adviser. Open only to students in departmental honors program. Independent study under the direction of the honors adviser, including research for Senior Honors Essay.
590. Directed Study. Cr. 1-4 (Max. 8)

Prereq: undergrad., at least two classics courses and written consent of chairperson; grad., written consent of chairperson and graduate officer. Directed independent research in-depth on a topic or author treated in the regular classics offerings, culminating in a course paper.

Greek (GRK)

## Ancient Greek

## 101. Elementary Greek. Cr. 4 <br> Basic vocabulary, forms, grammar.

102. Elementary Greek. Cr. 4

Prereq: GRK 101. Continuation of GRK 101 with increasing emphasis on reading ability.
201. (FC) Classical Greek Prose. Cr. 4

Prereq: GRK 102. Selections from various classical Greek prose authors such as Plato and Lysias.
260. Homer. Cr. 4

Prereq: GRK 201 or equiv. or consent of instructor. Reading of selected passages from the Iliad and the Odyssey ; study of the fundamentals of Homeric Greek.
301. New Testament. Cr. 2-4

Prereq: GRK 201 or equiv. or consent of instructor. Typical examples of textual and interpretive variants; emphasis on reading ability.
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.
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.
590. Directed Study. Cr. 1-4(Max. 8)

Prereq: undergrad., written consent of chairperson; grad., consent of chairperson and graduate officer.
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 .

[^56]
## 625. Greek Comedy. Cr. 4

Prereq: GRK 360 or equiv. or consent or instructor. Representative comedies from Old, Middle or New Greek Comedy to show the origin, development and social implications of the genre.

## Modern Greek

111. Elementary Modern Greek. Cr. 4

Material fee as indicated in Schedule of Classes. Training in pronunciation, conversation and reading.
112. Elementary Modern Greek. Cr. 4

Prereq: GRK 111 or equiv. Material fee as indicated in Schedule of Classes. Continuation of GRK 111.
211. (FC) Intermediate Modern Greek. Cr. 4

Prereq: GRK 112 or equiv. Material fee as indicated in Schedule of Classes. Review of grammar, practice in oral and written modern Greek, based on readings in modern Greek literature.
261. Readings in Modern Greek Literature. Cr. 4

Prereq: GRK 211 or equiv. Selections from major contemporary authors.
310. Survey of Modern Greek Literature: From the Beginnings to the Twentieth Century. Cr. 4
Prereq: GRK 261 or equiv. Selected readings of major Greek writers from the tenth century through the Fall of Constantinople down to the twentieth century; language and stylistic analysis.
361. Kazantzakis and Seferis. Cr. 4

Prereq: GRK 261 or equiv. Representative selections of the prose writings of Nikos Kazantzakis and the poetry of George Seferis.
371. (FC) Modern Greek Literature and Culture. Cr. 4

No knowledge of modern Greek required for this course; all readings in English translation; satisfies humanities group requirement; does not satisfy foreign language requirement. Survey of the culture and civilization of modern Greece through a study of their literature, customs, festivals and popular art.

## Latin (LAT)

101. Elementary Latin. Cr. 4

Basic vocabulary, forms, grammar.
102. Elementary Latin. Cr. 4

Prereq: LAT 101. Continuation of LAT 101, with increasing emphasis on reading ability.

## 201. (FC) Latin Literature. Cr. 4

Prereq: LAT 102. Representative selections of Latin prose and poetry.
260. Latin Poetry. Cr. 4

Prereq: LAT 201 or equiv. or consent of instructor. Representative selections of the poetry of Catullus, Virgil, Horace, Ovid, Martial and Latin elegy.
315. Cicero. Cr. 4

Prereq: LAT 201 or 260 or equiv. Selections from the basic philosophical and rhetorical writings of Cicero and from his letters.
poetry of Virgil.
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.
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.
583. Lucretius. Cr, 4

Prereq: LAT 260 or equiv. or consent of instructor. Study of the De Rerum Natura .
586. Horace. Cr. 4

Prereq: LAT 260 or equiv. or consent of instructor. Representative selections from the poetry of Horace.
590. Directed Study. Cr. 1-4(Max. 8)

Prereq: undergrad., written consent of chairperson; grad., written consent of chairperson and graduate officer.

330. Virgil. Cr. 4

Prereq: LAT 201 or 260 or equiv. Representative selections from the

## HISTORY

## Office: 838 Mackenzie Hall

## Chairperson: Alan Raucher

## Professors

Thomas N. Bonner, William J. Brazill, Jr., R. V. Burks (Emeritus), Milton Covensky (Emeritus), Corinne Gilb, C. Norman Guice (Emeritus), Edwin C. Hall, Finley A. Hooper (Emeritus), Christopher H. Johnson, Harry Magoulias, Philip P. Mason, T. F. Mayer-Oakes (Emeritus), Alan Raucher, Monica Schuler, Samuel F. Scott, Melvin Small, Goldwin Smith (Emeritus)

## Associate Professors

Effie Ambler, John Bukowczyk, Charles K. Hyde, Marc Kruman, Richard Place, Stanley D. Solvick

Assistant Professors<br>Stanley Shapiro, Tyrone Tillery

## Lecturers

Thomas Anderson, Sandra Van Burkleo

## Degree Programs

Bachelor of Arts-with a major in history

* Master of Arts—with a major in history
* Doctor of Philosophy—with specializations in

Europe, America, archival administration

* Graduate Certificate in Archival Administration

Historical studies have long been one of the cornerstones of a liberal education. Through the record of our own past and that of other cultures, we learn who we are and how our institutions developed. We study history to learn about the past, to understand the present, and perhaps, to discover clues as to what the future may hold. A broad discipline, history deals with all of humankind's activities, including war and peace, regions, nations, communities and individuals, technology, science, culture, the arts, and religions. With its emphasis on reading in the primary sources and good writing, the study of history in the undergraduate years is good preparation for careers in business or government, and for law and other graduate schools.

## Bachelor of Arts <br> with a Major in History

Admission requirements for this program are satisfied by the requirements for undergraduate admission to the University; see page 13.

DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work including satisfaction of the College of Liberal Arts Group Requirements (see page 199) and the University General Education Requirements (see page 20), as well as the major requirements listed below. All course work must be completed in accordance with the academic procedures of the University and the College; see pages 5-35, 199-211, and the section on

[^57]Bachelor's Degree Requirements, page 202. The minimum requirement for a major in history is thirty-three credits, distributed as follows:

1. at least one survey sequence, or the equivalent, from among the following: History 110-120; 130; or 204-205;
2. at least six HIS courses numbered 300 and above;
3. at least two courses in the pre-1789 period and at least two courses in the post-1789 period;
4. at least one course in American and one course in European history;
5. majors are recommended to take also at least one course in non-western history.

Department advisers will help each student plan a program to fit his/her particular needs and background. A maximum of sixteen credits satisfying the major requirements may be transferred from other institutions.

Recommended Cognate Courses: Among recommended cognates for history majors are courses in anthropology, economics, English, geography, humanities, political science and sociology. The history of philosophy, the history of art, and the history of music are also appropriate electives.

Cognate in Business: Many history majors pursue careers in business and industry. It is possible to arrange a coherent cognate of several courses in the School of Business Administration that enhances the preparation of history majors for potential employment in business and industry, and also may serve as background for an M.B.A. program. Interested students should consult advisers in the School of Business Administration for assistance in constructing the cognate.

Pre-Law Program: Students who plan to apply for admission to Law School should complete many of the following courses: History 110, 120, 130; 204 and 205; and six advanced courses. The following courses are strongly recommended for pre-law students: History 516, 517 , and 528 (see also suggested pre-law curriculum in the Liberal Arts Undergraduate Curricula, page 203).

## Honors Program

The History Department offers a Bachelor of Arts degree 'With Honors in History'. Qualified students planning post-baccalaureate work in history or in a professional school are especially encouraged to obtain an Honors degree. Honors majors must have a 3.5 honor point average (h.p.a.) in history courses and a 3.3 cumulative h.p.a. in all courses, as well as a grade of ' B ' or better in the History Honors Seminar (History 595). To be admitted to the Honors Seminar, the student must have completed twenty-four credits in history courses, nine of which must be at or above the 300 level, and must have a 3.2 h.p.a. in history courses and a 3.3 cumulative h.p.a. Students are expected to write an approved Honors Thesis as part of this seminar. Honors majors must also take at least one 400 -level seminar offered by the College's Honors Program, and accumulate at least fifteen credits in honors-designated course work, from any of the departments of the College, including History 595 and the Honors Program Seminar. For additional information on honors-designated course work available each semester, see the Liberal Arts section of the University Schedule of Classes under 'Honors Program,' or consult the Director of the Honors Program (577-3030).

## Minor in History

The minimum requirement for a minor in history is eighteen credits of which at least fourteen must be from classes at the 300 level or higher.

## Honors and Awards

Phi Alpha Theta: Undergraduates and graduate students who demonstrate excellence in their history courses are eligible for election to the chapter of Phi Alpha Theta sponsored by the Department. The international honor society in history, Phi Alpha Theta offers annual cash prizes to student members, sponsors conferences, and publishes a scholarly journal, The Historian. History majors and other history students interested in joining should inquire at the Department.

## COURSES OF INSTRUCTION ${ }^{1}$ (HIS)

103. (AI) History of American Political Institutions. Cr. 4

A historical survey of the development since colonial times of American municipal, state, and national government. Special attention to federalism, separation of powers, citizenship, and the two-party system.

## 105. (AI) American Civilization since World War II. Cr. 3-4

Recent American ideas, institutions, and social movements within the broad context of global change and conflicts.
110. (HS) The Ancient Worid. Cr, 3-4

From prehistory to the break up of Mediterranean unity.
120. (HS) The Medieval World. Cr. 3-4

Medieval civilization from the barbarian invasions to the Renaissance.
130. (HS) The World and the West: 1500-1945. Cr. 3-4

No credit after HIS 287 or HIS 190. The rise of the modern West and the response of the non-West from the age of Columbus to the age of Hitler: the foundations of the contemporary world.
140. (HS) The World Since 1945. Cr. 3-4

No credit after HIS 104. Selected topics in world history since 1945, including: impact of World War II on Europe and European empires; bipolar division of the world between the United States and the Soviet Union; the international order and relations between the industrial nations (First World) and the developing nations (Third World). (T)
160. (HS) African Civilizations to 1800. Cr. 3

No credit after HIS 240. Africa from ancient Egypt to the Atlantic slave trade. Emphasis on state building; regional and international commercial network and their role in economic, political, and socio-cultural change.
161. (HS) African Civilizations Since 1800. Cr. 3

No credit after former HIS 241. The origins of contemporary Africa, nineteenth century state-building, spread of Islamic religion, establishment of European empires, independence struggles, problems of independence.
171. East Asian Civilizations since 1840. Cr. 3

Introduction to the traditional societies of China, Korea, and Japan, and their responses to the Western challenge.

[^58]314. The Black Experience in America I: 1619-1865. Cr. 3-4

African origins of the American black; transition from freedom to slavery; status of the black under slavery.

## 315. The Black Experience in America II: $\mathbf{1 8 6 5}$ to the Present. Cr. $3-4$

The black in national life since emancipation.

## 319. History of Amevican Business. Cr. 3

Major innovators and leaders as entrepreneurs, as corporate managers, and as business statesmen from colonial era to present. Special attention to relationship, American values, and government policies.

## 325. The Family in History. Cr. 3-4

Only Honors Program students may elect for four credits. Comparative survey emphasizing the transformation from traditional patterns of family life to family and kin in modern industrial society; students research their own family histories.

## 330. Technology in America. Cr. 3-4

Technological change in the United States from European settlements to the present; impact of technology in American society; meaning of technology in American culture; history of technologies used in agriculture, manufacturing, transportation, communication, and warfare.
335. (HS) Revolution in the Modern World: 1750 to the Present. Cr. 3
Comparative survey of modern revolutionary upheaval focusing on liberal-democratic revolutions of the eighteenth and nineteenth centuries, socialist revolutions of the first half of the twentieth century, and Third-World revolutions of the post-1945 era.
340. The Automobile and Society: Europe, America, and Japan. Cr. 3
History of the design, production, and use of the automobile in Europe, the United States, and Japan, from 1885 to the present; impact of automobile on society and culture.
350. (HS) Explorers' Age: 1400-1750. Cr. 3

Spanish, English and French experiences in America and the Native Americans who faced them, seen in context of European and American cultures and backgrounds.
377. (ENG 350) Women's Lives. Cr. 3(Max. 6)

Examination of women's writings in various forms: diary, journal, autobiography, biography, essay, interview and film.
395. Special Topics in History. Cr. 1-4(Max. 8)

Specialized and topical studies in historical events, personalities and themes. Topics to be announced in Schedule of Classes .
396. Topics in African History. Cr. 1-4(Max. 8)

Topics to be announced in Schedule of Classes .
397. Topics in European History. Cr. 1-4(Max. 8) Topics to be announced in Schedule of Classes.
398. Topics in American History. Cr. 1-4(Max. 8)

Topics to be announced in Schedule of Classes .
490. Directed Study. Cr. 1-6

Prereq: consent of chairperson.
497. Internship in Historical Museums. Cr. 3

Prereq: consent of chairperson. Open only to majors. Offered for $S$ and $U$ grades only. Training in local historical museums and agencies in all aspects of museum administration and service.
500. The French Empire in Americs. (HIS 700). Cr. 3 Descriptive analysis of the French activity in North America;
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, war, 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 with 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.
(B)
505. The Emergence of Modern America: 1877-1917. (HIS 705). Cr. 4
Emphasis on the rise of big business, social and intellectual change, protest movements and government policies before the twentieth century.
506. Modern America: 1917-1945. (HIS 706). Cr. 4

Analysis of economic and social problems, politics, and government policies.
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 twentienth-century health delivery.
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.
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.
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.
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.

## 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.
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.

## 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."
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.
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.
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.
533. History of Greece. (HIS 733). Cr. 3

Ancient Greek culture, emphasizing political events, social and economic institutions, cultural achievements.
534. History of Rome. (HIS 734). Cr. 3

Institutional and cultural development.
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.
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.
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.
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.
539. Europe in the Age of Reformation. (HIS 739). Cr. 3 Protestant and Catholic reformation seen in the context of social, economic, and political conditions of the sixteenth and seventeenth centuries.
540. Europe Under the Old Regime: 1660-1789. (HIS 740). Cr. 3 Analysis of monarchical institutions and society; examination of the economic, social and intellectual changes that foreshadowed the age of revolution.
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.
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.
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.
549. Russian History through the Revolution. (HIS 749). Cr. 4 Development and transformation of state power, with particular attention to those economic and social elements peculiar to Russia.
550. The Soviet Union. (HIS 750). Cr. 4

Bolshevik seizure of power, collectivization of agriculture and forced-draft industrialization, Nazi German invasion, Khrushchev and deStalinization, predominence of the new middle class, nationality problems, problems of detente.
552. Uses of Terror: History of the Police State. (HIS 752). Cr. 4 History of the police state as a form of political organization in the twentieth century. General analysis of the phenomenon; case studies.
(B)
553. History of World War I and II. (HIS 753). Cr. 4

A military history of the two world wars of the twentieth century.
559. Byzantine History I: 284-867. (HIS 759). Cr. 4

From Diocletian and Constantine I to the Macedonian Dynasty.
560. Byzantine History II: 867-1453. (HIS 760). Cr. 4 From the Macedonian Dynasty to the fall of Constantinople.

## 562. The Rise of the European Working Class: 1750-1850. (HIS

 762). Cr. 3The 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.
563. Socialism and the European Labor Movement. (HIS 763). Cr. 3
Comparative labor history from 1850 to the present; Utopian socialism, Marxism, anarchism, syndicalism, communism, fascism; contemporary trends.
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.
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.
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.
595. Honors Seminar. Cr. 3.
Prereq: consent of chairperson; honors standing in history.
600. Studies in Comparative History. Cr, 2-4 Topics to be announced in Schedule of Classes .
601. Studies in American History. Cr. 2-4(Max. 9) Topics to be announced in Schedule of Classes .
602. Studies in European History. Cr. 2-4(Max. 9) Topics to be announced in Schedule of Classes .


## HONORS PROGRAM

Office: 258 Mackenzie Hall
Director: Francine Wehmer
Adviser: Elizabeth MacBride
See page 210 for a general description of the honors program.
Students who are candidates for a degree with University Honors will pursue a course of study, in consultation with a faculty adviser, which must consist of at least thirty credits of honors designated course work including: (1) one 400 -level seminar offered by the Honors Program (HON 420-427) and (2) at least three credits in a senior honors essay or thesis. These students will normally achieve many of their honors designated credits in courses which fulfill University General Education and College of Liberal Arts Group Requirements. Honors option courses and honors seminars given by departments for students majoring in their respective disciplines are other sources of honors credits applicable to a degree with University honors.

Students who are pursuing a degree with Departmental Honors must contact that department or the Honors Program Office for specific curricular requirements; however, all departmental honors programs require (1) at least fifteen credits of honors designated course work; (2) a senior essay or thesis; (3) at least one 400 -level seminar offered through the Honors Program; and (4) a specified honor point average for graduation.

## Honors Sections

The following courses offer honors sections which (when scheduled) will be listed under the Honors Program in the University Schedule of Classes; however all of the courses listed below will not be offered each semester. Departmental honors courses intended exclusively for individual departments' honors majors are listed only under the respective departmental headings in this bulletin and the Schedule of Classes. For a description of the following courses, see the appropriate departmental sections of this bulletin.


| .........Calcu |  |
| :---: | :---: |
|  |  |
| MAT 235 ......................................................Elementary Differential Equations |  |
| 221 |  |
| 102 .....................................(PL) Honors Introduction to Philosophical Systems |  |
|  |  |
| PHI 186 ..................................................................................ors Symbolic Logic |  |
| PH1 232 ............................................................(PL) Introduction to Ethics |  |
| PHI 233 ...........................................Introduction to Social and Political Philosophy |  |
| PHI 360 ............................................ Space, Time and the Philosophy of Physics |  |
| PS 101 <br> (Al) American Government <br> PS 281 World Politics |  |
|  |  |
| PSY 101............................................................(SS) Introductory Psychology |  |
|  |  |
| PSY 331...................................................................Abnormal Psychology |  |
| PSY 407...................................................... Psychology of Drugs and Behavior |  |
| SOC 558........................................................Ethnic Groups in Urban America |  |
| SOC 587...................................................................Violence in the Family |  |
|  |  |

## COURSES OF INSTRUCTION ${ }^{1}$ (HON)

## 210. (CLA 210) (PL) Honors Classical Origins of Western Thought. Cr. 3

Open only to Honors Program students. Classical foundations of contemporary Western Thought. Topics include: relations between the sexes, democracy, slavery, war, social criticism, rationality, relations between parents and children, literature and the performing arts.
420. Seminar in Philosophy and Letters. Cr. 3 (Max. 9)

Prereq: junior or senior standing. Open only to Honors Program students. Analysis of meanings given to human experience through study of philosophy or letters. Topics to be announced in Schedule of Classes.
(Y)
421. Seminar in Social Science. Cr. 3

Prereq: junior or senior standing. Open only to Honors Program students. Analysis of major institutions in society and roles in those institutions. Topics to be announced in Schedule of Classes.
(Y)
422. Seminar in Life Science. Cr. 3

Prereq: junior or senior standing. Open only to Honors Program students. Analysis of aspects, methods, and important issues in various areas of the life sciences. Topics to be announced in Schedule of Classes.
423. Seminar in Physical Science. Cr. 3

Prereq: junior or senior standing. Open only to Honors Program students. Analysis of modern theory and data, implications and possibilities in the physical sciences. Topics to be announced in Schedule of Classes.
424. Seminar in the Visual and Performing Arts. Cr. 3 (Max. 9) Prereq: junior or senior standing. Open only to Honors Program students. Analysis of ways the visual or performing arts may be appreciated, evaluated, and criticized. Topics to be announced in Schedule of Classes.
425. Seminar in Historical Studies. Cr. 3 (Max. 9)

Prereq: junior or senior standing. Open only to Honors Program students. Studies of periods of history in which there has been major transition and change. Topics to be announced in Schedule of Classes.
(Y)
${ }^{1}$ See page 433 for interpretation of numbering system, signs and abbreviations
426. Seminar in Foreign Cultures. Cr. 3 (Max. 9)

Prereq: junior or senior standing. Open only to Honors Program students. Humanistic or social science investigation of peoples and institutions in other cultures. Topics to be announced in Schedule of Classes.
427. Seminar in Ameerican Society and Institutions.

$$
\text { Cr. } 3 \text { (Max. 9) }
$$

Prereq: junior or senior standing. Open only to Honors Program students. Study of American society, its institutions and social change. Topics to be announced in Schedule of Classes.
490. Directed Study. Cr. 2-4(Max. 16)

Prereq: written consent of director.
498. University Honors Thesis. Cr. 3-6

Prereq: junior or senior standing. Open only to University honors students. For students not concurrently in departmental/college Honors program.


## HUMANITIES

Office: 631 Merrick

Chairperson: Martin M. Herman

## Professors

Bernard M. Goldman (Emeritus), Martin M. Herman, Sara E. Leopold, Alexandra McCoy, Jay Vogelbaum

## Associate Professors

Ramon J. Betanzos, Marc Cogan, Richard P. Studing, Nola H. Tutag (Emerita)

## Degree Programs

## Bachelor of Arts-with a major in humanities

The Humanities curriculum focuses on the symbolic ways in which human beings represent their experience. By means of a multidisciplinary and interdisciplinary approach, it examines relationships among such diverse humanistic disciplines as art, music, literature, history, language and philosophy from both topical/theoretical and historical perspectives. Courses are designed to serve four curricular needs:

1. Designated courses may be taken to fulfill portions of the University General Education Program (see pages 20-27), and the College of Liberal Arts Group Requirements (see page 199).
2. Some may serve as electives or cognates for students majoring in other disciplines.
3. Various combinations provide a major in Humanities.
4. Various combinations may be approved for students pursuing a master's degree.

## Bachelor of Arts

## with a Major in Humanities

Admission to this program is satisfied by the general requirements for undergraduate admission to the University; see page 13.

DEGREE REQUIREMENTS: Candidates for the Bachelor of Arts degree in humanities must satisfactorily complete 120 credits in course work. Courses taken must fulfill all University General Education Requirements (see page 20), College of Liberal Arts Group requirements (see page 199), and Departmental Major Requirements (see below). All course work must be completed in accordance with the academic procedures of the University and the College which govern undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively.

Major Requirements for the Bachelor of Arts degree in humanities consist of satisfactory completion of twenty-four credits in specified course work in the Department of Humanities (see below), supplemented and complemented by one of the following options:

1. Satisfactory completion of all major requirements in another department or program; or
2. Satisfactory completion of a twenty-four credit concentration in a single discipline other than humanities; or
3. Satisfactory completion of a coherent period or area study: a twenty-four credit concentration in course work chosen from the
offerings of appropriate departments and programs.
Students who are interested in this major should consult a Departmental Adviser for further information.

All majors are required to complete the following courses in the Department of Humanities:

Humanities 102. (VP) Experiencing the Arts
Humanities 210 $\qquad$ (PL) Humanities and the Western Tradition I
Humanities 211 . (PL) Humanities and the Western Tradition II
Humanities 221. Medium, Form and Meaning in the Arts
Humanities 222. $\qquad$ (PL) Constructs of Human Experience Two Humanities courses at the 500 level

To insure a coherent program, one with adequate breadth and depth, each major must decide, in consultation with a Departmental adviser, on an appropriate Plan of Work. A copy of this Plan must be filed with the Department Chairperson by the end of the semester in which a major is declared.

## Minor in Humanities

To minor in Humanities, a student must satisfactorily complete eighteen credits, consisting of: HUM 102, 210, 211, 221, and 222. Students with substantial experience in various humanistic disciplines may, with the consent of the Chairperson, substitute Departmental offerings at the 300 level or 500 level for one or several of these courses.

## Honors in Humanities

The Honors Program in Humanities is open to students of superior academic ability who are majoring in Humanities. Honors students must demonstrate the ability to study independently and to complete an original Honors Thesis during the senior year, and must maintain a cumulative honor point average of at least 3.3. Honors majors must also take at least one 400 -level seminar offered by the College's Honors Program, and accumulate at least fifteen credits in honors-designated course work from any of the departments of the College, including Humanities 498 and the 400 -level honors seminar. For information about the requirements of the department's honors curricula, contact the Chairperson of the Department, or the Director of the Liberal Arts Honors Program (577-3030).

## COURSES OF INSTRUCTION ${ }^{1}$ (HUM)

101. (VP) Introduction to Art and Music in Western Civilization. Cr. 4
No credit for humanities majors: Carefully selected examples from the visual arts and music placed in appropriate contexts from antiquity to the present. Museum and listening assignments supplement the lectures.
102. (VP) Experiencing the Arts. Cr. 3-4

Developing the skills to experience (look, listen, read) such artistic media as art, music, and poetry. Considering how such skills relate to the manner in which meaning is communicated. Specific media to be announced in Schedule of Classes .

## 103. (VP) Exploring the Arts in Detroit. Cr. 4

Examination of the role played by urban institutions in creating, preserving, and transmitting humanistic concepts and the imaginative

[^59]products of the human mind. Systematic survey of those institutions in metropolitan Detroit which have assumed or been assigned responsibility for transmitting these ideas to succeeding generations and for providing continued access to such artifacts. A lecture-field work format assures maximum opportunity for direct access and experience.
113. Practicum in Humanities. (Fld: 1). Cr. 1(Max. 3)

Prereq. or coreq: HUM 101, 102, 103, 210, 211, 221 or 485. Attending and reviewing assigned performances and exhibitions related to HUM 101, HUM 102, HUM 103, HUM 210, HUM 211, HUM 221 or HUM 485.
200. (IC) Reading and Writing About the Arts. Cr. 3

Prereq: ENG 102. Examination of ways in which various modes of expression (e.g., painting, music, drama) and related examples of expository (critical) prose communicate meaning for the purpose of improving analytical skills and writing ability.
210. (PL) Humanities and the Western Tradition I: Antiquity to the Renaissance. Cr. 4
Examining relationships among the arts and connections between the arts and ideas from antiquity to the Renaissance.
211. (PL) Humanities and the Western Tradition II: Renaissance to the Present. Cr. 4
Examining relationships among the arts and connections between the arts and ideas from the Renaissance to the present.
220. (PL) Sophomore Honors Colloquium in Humanities. Cr. 4 (Max. 8)
Prereq: sophomore standing. Open only to students in Honors program. Topics to be announced in Schedule of Classes .
221. Medium, Form and Meaning in the Arts. Cr. 3

Major works of poetry, drama, art and music serve to demonstrate how medium, form, meaning and message act in concert.
222. (PL) Constructs of Human Experience: Histories, Novels, Philosophies. Cr. 3-4
Examination of texts selected from the major categories of prose writing: history, narrative fiction and philosophy. Critical exploration and comparison of these categories as a means to fuller understanding.
250. Images of Labor in the Arts and Literature. (LBS 250). Cr. 4
Examining the diverse images of the labor movement presented in the popular arts (films, songs, stories, and graphics) and exploring the contrasting perspectives which shape these images.
265. Topics in Humanities. Cr. 3(Max. 6)

Specific topics, subjects, themes in the humanities from multidisciplinary and interdisciplinary perspectives. Topics to be announced in Schedule of Classes.

## 301. The Persistence of Tradition. Cr. 3

Studies in myth and mythopoeic thought. Myth as artistic and cultural symbol of perennial human concerns.
303. (VP) Music - Theatre - Cinema: Imitation, Adaptation, Transformation. Cr. 3
Prereq: HUM 102 or 221 or equiv. Examining cycles of thematically related works for the purpose of studying the process of adaptation as it takes place through time and across artistic media.

## 310. (HS) Historical Epochs in Contrast. Cr. 3

Prereq: junior standing or above. Two historical-cultural periods are compared and contrasted from multidisciplinary and interdisciplinary perspectives: views of theology (God and religion) and human nature, artistic achievements, and concepts of history. Primary materials
emphasized; examination of historical periodization and methodology.

## 390. Directed Study. Cr. 1-3(Max. 3)

Prereq: written consent of chairperson. Open primarily to junior and senior humanities majors. Advanced study in a particular area of the humanities.
485. Humanities and Education. Cr. 4

Study of major traditions in Western art, literature and philosophy as they relate to education.
498. Honors Thesis in Humanities. $\mathrm{Cr} .3-6$

Prereq: senior standing; 3.3 h.p.a. Open only to humanities majors. Research problem completed under direction of faculty member. (T)
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 or 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 forms of knowledge or experience as history, philosophy, religion, and science.
537. Western Culture in the Baroque Period. Cr. 3

Prereq: HUM 210, 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.
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.
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.
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.
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 compared and explored.
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.

## LINGUISTICS

## Office: 414 State Hall

Acting Director: Steven Lapointe

## Participating Faculty

Richard B. Angell, Professor, Philosophy
Ellen Barton, Assistant Professor, English
Lynn Bliss, Associate Professor, Speech Communication
Walter Edwards, Associate Professor, English
Helen Hause, Associate Professor Emerita, Anthropology
Joel Itzkowitz, Associate Professor, Greek and Latin
Steven Lapointe, Associate Professor, English
Sara E. Leopold, Professor, Humanities
Alexis Manaster-Ramer, Assistant Professor, Computer Science
T. Michael McKinsey, Associate Professor, Philosophy

Martha Ratliff, Assistant Professor, English
Hilary Ratner, Associate Professor, Psychology
Aleya Rouchdy, Associate Professor, Near Eastern Languages Eli Saltz, Professor, Psychology
Gary Scavnicky, 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

## Degree Programs

## Bachelor of Arts-with a major in linguistics

## * Master of Arts in Linguistics

Linguistics is devoted to the scientific study of language structure and use. The Linguistics Program at Wayne State offers an interdisciplinary approach to this field, permitting students to explore a wide range of topics and issues in language research. The program offers courses from the major areas of the field, including (a) the structural aspects of sentences (syntax), words (morphology), and speech sounds (phonology), (b) the historical development of language, (c) the semantic and pragmatic basis of language interpretation in sentences and discourses, (d) language variation and use in social contexts (sociolinguistics), (e) the processing and acquisition of language (psycholinguistics), and (f) the application of language to other areas of human knowledge.

Training in linguistics prepares students for advanced work in linguistic research, as well as for employment in teaching English and foreign languages; computer programming (especially in natural language processing); civil service and diplomatic work; broadcasting, mass media and public relations; and generally any profession requiring the precise use or the analysis of speech or writing. The Linguistics Program is administered by a director and an advisory committee of faculty members drawn from the Departments of Anthropology, Computer Science, English, Greek and Latin, Humanities, Near Eastern Studies, Philosophy, Psychology, Romance and Germanic Languages, and Speech Communication and Journalism.

## Bachelor of Arts <br> With a Major in Linguistics

Admission Requirements for this program are satisfied by the requirements for general undergraduate admission to the University; see page 13.

DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work including satisfaction of the University General Education Requirements (see page 20), the College of Liberal Arts Group Requirements (see page 199), and the following major requirements. All course work must be completed in accordance with the regulations of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively.

The bachelor of arts program consists of a core of linguistics courses which all majors must complete. In addition to the core courses, the student must pursue one of the following concentrations: a) Linguistics and a Language; b) Formal Linguistics: Syntax and Semantics; c) Psycholinguistics; d) Sociolinguistics; e) Individualized Program.

A student must complete a minimum of twenty-eight credits in core and concentration courses to satisfy the major requirements.

Core Courses

|  | credits |
| :---: | :---: |
| LIN 529 - Structure of Language: Phonology |  |
| LIN 530 - Theory of Syntax |  |
| LIN 570 - Introduction to Linguis |  |

## Concentrations

## A. Linguistics and a Language

The student must complete fifteen credits in advanced language skills or in the linguistics of the chosen language beyond the basic courses. In addition, the student must elect an appropriate course in historical linguistics. The fifteen credits in advanced language skills should be planned in consultation with the adviser.
B. Formal Linguistics: Syntax and Semantics Required Courses:
LIN 185 - Symbolic Logic .....
LIN 257 or LIN 557

- Introduction to Philosophy of Language ..... 3
- Philosophy of Language ..... 4
Elective courses to complete 28-credit major requirements:
ENG 576 - American Dialects. ..... 3
CSC 652 - Automata Theory .....  .3
PHI 520 - Modal Logic. ..... 4
PHI 535 - Logical Systems 1. ..... 4
PHI 539 - Logical Systems II. ..... 4
PHI 563 - Twentieth Century Analytic Philosophy I ..... 4
PHI 564 - Twentieth Century Analytic Philosophy II ..... 4
PSY 671 - Psycholinguistics ..... 3
C. Psycholinguistics
Required Courses:
PSY 671 - Psycholinguistics ..... 3
PSY 209 - Cognitive Processes ..... 4
Elective courses to complete 28 -credit major requirements:
PSY 240 - Developmental Psychology ..... 4
PSY 609 - Higher Mental Processes .....  3
PSY 410 - Statistical Methods in Psychology .....  .4
PSY 490 - Directed Study and Research (credit max. 9). ..... $2-4$

2-4

[^60]SPC 501 - Psychology of Human Communications .....  3
SPD 508 - Phonetics .....  3
PSY 610 - Research Methods in Cognitive Psychology .....  .3
PSY 620 - Development of Memory .....  3
PSY 699 - Special Topics in Psychology (elect with consent of adviser) .....  3
D. Sociolinguistics
Required Courses :
LIN 531 or LIN 576
-Language and Culture .....  3
-American Dialects .....  3
LIN 532 or LIN 577
-Language and Society .....  3
-Sociolinguistics. .....  3
Elective courses to complete 28 -credit major requirements:
SPC 504 - Communication in the Black Community .....  3
SOC 410 - Social Psychology .....  3
SOC 525 - Social Statistics ..... 3
PSY 567 - Psychology of Interpersonal Communications .....  3
PSY 671 - Psycholinguistics .....  3
ANT 520 - Social Anthropology .....  3
ENG 560 - Studies in Folklore ..... 3
UN 576 - American Dialects .....  3
LIN 577 - Sociolinguistics .....  3

## E. Individualized Program

Under exceptional circumstances a student may design concentrations to meet an individualized program. Plans of work for special concentrations must be approved by the Committee for the Linguistics Program before the student has completed a maximum of twelve credits in the major.

## Minor in Linguistics

The minor in linguistics requires at least six courses for a total of eighteen credits. These courses must include:


The other three courses must be either (a) all from one of the four areas of concentration (A, B, C, or D, above); or (b) all LIN courses from one of the departments in the College of Liberal Arts.

## COURSES OF INSTRUCTION ${ }^{1}$ (LIN)

## 170. (ENG 170) English Grammar. Cr. 3

Intensive course in the rules of English grammar and spelling, especially those rules needed for written work in college. Explication of the linguistic principles inherent in the rules of usage.
185. (PHI 185) Symbolic Logic. Cr. 4

The logic of propositions; the general logic of predicates and relations; identity and description; a brief introduction to set theory.
186. (PHI 186) Honors Symbolic Logic. Cr. 4 Open only to Honors students. See LIN 185. abbreviations
209. (PSY 209) Cognitive Processes: Language, Thinking and Problem Solving. Cr. 4
Prereq: PSY 101 or PSY 102. Material fee as indicated in Schedule of Classes. Fundamental theories, concepts, and empirical findings in the study of human cognition. Topics include thinking, problem solving, language comprehension and production, the acquisition and use of knowledge, memory, attention and consciousness. Laboratory investigations of cognitive processes.
(F,W)
257. (PHI 257) Introduction to the Philosophy of Language. Cr. 3
A survey of philosophical problems concerning such topics as: the concepts of language and linguistic convention; the nature of meaning, reference, and truth; the relations between language, thought, and the world.
270. (ENG 270) Introduction to Contemporary English. Cr. 3 Ways in which use of language affects communication: denotation and connotation, analysis of language of advertising, business, government and education.

## 271. (ENG 271) Linguistic Approaches to Language Acquisition.

 Cr. 3Current models of child first-language acquisition; kinds of evidence supporting them. Topics may include: debate over innateness, issues in adult second-language acquisition, relations between acquisition and adult language breakdown (aphasia).
272. (ENG 272) (PL) Basic Concepts in Linguistics. Cr. 3 Analysis of the structure and use of language, focusing on English, from the standpoint of current linguistic practice. Topics include: phonetics and sound structure, word structure, syntax, semantics, language origin and history, dialects, language learning and animal communication, and language in social interaction.
273. (ENG 273) Languages of the World. Cr. 3

Prereq: ENG 102. Survey of structure of major language families of the world, western and non-western; interrelationships of language and culture; universals and variations of universals in language and culture.
401. (ARB 401) Arabic Linguistics. Cr. 3

Prereq: ARB 202 or consent of instructor. Continuation of intermediate grammar exercises in translations, reading in selected modern texts.
504. (SPC 504) Communication in the Black Community. (S E 537). Cr. 3

Sociolinguistic and rhetorical analysis of speech and language behavior among Afro-Americans; linguistic history and development of black
English. Related issues concerning the education of black children.
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.
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.
530. (ENG 574) Theory of Syntax. Cr. 3

Prereq: LIN 570. The theory of grammatical systems examined through analysis of sentence and word formation in a variety of human languages. Diversity and universals in grammar and theories of syntax.
531. (ANT 531) Language and Culture. Cr. 3

Prereq: ANT 210 or ANT 520 or S S 191 or SOC 201 or consent of instructor. An introduction to the structure of language and to the ways that humans use language in the construction of human worlds. Diversity of the world's languages and universal properties of language will be discussed. Theories of language change will be introduced.
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.
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.
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.
563. (PHI 563) Twentieth Century Analytic Philosophy 1. Cr. 4 Prereq: PHI 185 or PHI 186 and any philosophy course from the Philosophical Problems group or consent of instructor. Major works, movements, and writers in the analytic tradition in the twentieth century up to the 1940s. Frege, Russell, Moore, the early Wittgenstein, Carnap.
(B)
570. (ENG 570) Introduction to Linguistic Theory. Cr. 3 Basic concepts and methods of modern linguistics and their application to the study of the English language.
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.
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.
576. (ENG 576) American Dialects. Cr. 3

Survey of chief social and geographic dialects of American English and introduction to theory of language variation.
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)
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.
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.


## MATHEMATICS

Office: 646 Mackenzie Hall<br>Chairperson: Bertram M. Schreiber<br>Academic Services Officer: Mary C. Parks

## Professors

Gregory F. Bachelis, Lawrence J. Brenton, Leon Brown, Pao-Liu Chow, Bertram J. Eisenstadt, Karl W. Folley (Emeritus), David Handel, Chorng-Shi Houh, John M. Irwin, Judith Q. Longyear, D. Clarence Morrow (Emeritus), Togo Nishiura, Owen G. Owens (Emeritus), Jingyal Pak, Choon-Jai Rhee, Claude L. Schochet, Bertram M. Schreiber, Tze-Chien Sun, Martin T. Wechsler, Paul Weiss (Emeritus), Clarence W. Wilkerson

## Associate Professors

Robert D. Berman, John C. Breckenridge, 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, Steven M. Kahn, Morris W. Katz, Marc Konvisser, Leonid Makar-Limanov, Peter Malcolmson, Charles A. McGibbon, Jose L. Menaldi, Harold T. Slaby, Stephen A. Williams

## Assistant Professors

Andrzej Kozlowski, Gail Letzter, Edmond Nadler, Gang Yin

## Adjunct Associate Professors

David E. Bindschadler, Lance K. Heilbrun

## Degree Programs

Bachelor of Arts-with a major in mathematics
Bachelor of Science-with a major in mathematics

* Master of Arts-with a major in mathematics
*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, life or social sciences, in business administration, in engineering, and in education; they provide a route by which students may achieve a level of competence to do research 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.

[^61]
## Bachelor's Degrees

Admission Requirements for the College are satisfied by the general requirements for undergraduate admission to the University; see page 13. Undergraduates will be accepted as mathematics majors only after an interview with a departmental adviser. After a student's acceptance as a major, all of his or her course elections must be signed by a departmental adviser.

## Degree Requirements

Candidates for the bachelor's degree must complete 120 credits in course work including satisfaction of the College of Liberal Arts Group Requirements (see page 199) and the University General Education Requirements (see page 20), as well as the major requirements of one of the following programs. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively.

Bachelor of Arts: The candidate must complete the Basic Sequence and then continue with option A, B, or C as described below. Students intending to go on to graduate study in mathematics are advised to elect option A.

Bachelor of Science: The candidate must complete the Basic Sequence and elect mathematics option A (see below), complete Physics 217 and 218, and satisfy the Liberal Arts group requirement in foreign language by choosing French, German or Russian. A candidate for the Bachelor of Science degree in another department who wishes to include mathematics as a second major may substitute option B for option A. All mathematics majors must plan their programs with the help of an adviser from the Mathematics Department.

## Mathematics Qualifying Examinations

Mathematics 150: Students must qualify for entry into Mathematics 150 by either (a) successfully completing Mathematics 095 or 098 with the recommendation of their instructor to enter Mathematics 150, or (b) by receiving a satisfactory score on the Mathematics 150 Qaulifying Examination given during the testing period immediately preceding the semester in which they plan to enroll. This examination will cover topics in arithmetic and first year high school algebra. A student may take the examination only once during one testing period.

Mathematics 180 or 201: Designated minimum scores on the Mathematics Qualifying Examination must be achieved within the previous two semesters in order to (a) enroll in Mathematics 180 (except for certain students from Mathematics 095 or 098 who are recommended by their instructors) or (b) enroll directly in Mathematics 201 without first passing Mathematics 180. All transfer students, including those who have had the equivalent of Mathematics 180 at another institution, are required to take the qualifying examination before enrolling in Mathematics 201.

This examination is administered each semester. If possible, a student should take the qualifying examination two semesters before electing a mathematics course. This will permit the student with a deficiency in preparation to remedy it before scheduling to elect the required course. It is important for the student to review thoroughly the basic notions and operations of elementary mathematics before taking the examination. A student may take the examination only once during one testing period.

The Mathematics Qualifying Examination for Mathematics 180 or 201 tests proficiency. Parts A and B of the examination are used to determine eligibility for Mathematics 180 . The level of this part corresponds to the competence gained in two and a half years of
college preparatory mathematics including topics from elementary algebra and geometry. Candidates for Mathematics 201 must take the full examination of about two hours duration. The second part of the examination is on a level indicated in the discussion of the Basic Sequence below.

## Basic Sequence

The sequence consists of mathematics courses 201, 202, 203, 225, and 235. While it is designed to meet the needs of students majoring in mathematics, engineering or the exact sciences, it is often the best set of courses in mathematics for students with other objectives.

To enter the Basic Sequence a student must pass Mathematics 180 or obtain a satisfactory score on the Mathematics Qualifying Examination (see above) which is based on three and one-half to four years of college preparatory mathematics including topics from algebra, plane and solid geometry and trigonometry. Students are not allowed to enroll in Mathematics 201 without this educational background or its equivalent. Courses designed for other purposes (e.g., general mathematics, consumer mathematics, business mathematics, shop mathematics) do not constitute adequate preparation for this sequence.

## OPTIONS

Total Credits in Major: Students may take no more than forty-six credits in mathematics and no more than forty-six credits in computer science.

Honor Point Average: For majors, the honor point average in mathematics (MAT) courses must be at least 2.0 .

## - Option A

This option is for students with a strong interest in theoretical mathematics and requires:

1. The Basic Sequence (Mathematics 201, 202, 203, 225, and 235).
2. Advanced Calculus (MAT 507).
3. Algebra I and II (MAT 542 and 543).
4. Analysis I and II (MAT 560 and 561 ).

## 5. Probability (MAT 570).

6. One additional course chosen from (a) mathematics courses numbered 500 or above and applicable to degree work in mathematics or (b) computer science courses: CSC 518 (Discrete System Simulation), 661 and 662 (Computational Algorithms). Mathematics service courses may not be used to satisfy this requirement. Students in the combined curriculum for secondary teaching should take MAT 614.
7. Completion of the Liberal Arts foreign language requirement with French, German, or Russian.

## - Option B

This option is for students interested in a broad range of topics and requires:

## 1. The Basic Sequence.

## 2. MAT 507.

3. MAT 542 or 560 .

## 4. MAT 570.

5. Either (a) three courses chosen from mathematics courses numbered 500 or above and applicable to degree work in mathematics, or (b) two mathematics courses numbered 500 or above and applicable to degree work in mathematics and one of the following: CSC 518, 661, or 662 . Mathematics service courses may not be used to satisfy this requirement.
6. Satisfaction of the Liberal Arts foreign language group requirement (French, German or Russian recommended).

## - Option C

This option is available only to students in the Combined curriculum for Secondary Teaching.

1. The Basic Sequence.
2. Mathematics 507.
3. Mathematics $560,614,615$ and 616 .
4. Mathematics 540 or 542 or 561 .
5. Two additional courses selected from (a) mathematics courses numbered 500 or above and applicable to degree work in mathematics, or (b) computer science courses numbered 500 or higher, except Computer Science 503. Mathematics service courses may not be used to satisfy this requirement.
6. Satisfaction of the Liberal Arts foreign language group requirement (French, German or Russian recommended).

## Curricular Alternatives

Combined Curriculum for Secondary Teaching: Under the Combined Curriculum (see Teacher Preparation Curricula, pages 207-208), it is possible to earn a bachelor's degree in mathematics and, at the same time, a secondary teaching certificate. Students in this curriculum may satisfy the mathematics part of their degree requirements by any of the degree programs specified above. Those students who are admitted into and complete the Combined Curriculum for Secondary Teaching may satisfy the mathematics requirements for the Bachelor of Arts degree with a major in mathematics by electing option C (above). It is stressed, first, that students in the combined curriculum with education are the only ones who may use option C , and, second, that these students are not restricted to option C but may use options A, or B if they choose.

Language Recommendations: The department recommends that its majors take at least two semesters of foreign language beyond the group requirement. This additional work could be in a second foreign language.

Double Major: Students whose field of concentration is closely related to mathematics and who have an independent interest in mathematics should consider the declaration of a double major with mathematics. It is usually possible to combine the work of a mathematics major with one in physics or chemistry. The growing use of mathematical methods in life sciences, the social sciences, and in the operation of large government and industrial organizations makes the mathematics major program a rewarding educational experience for students interested in these fields.

## Honors Program

In order to graduate with honors in mathematics, students must satisfy the following criteria:

1. Completion of the requirements for a Bachelor of Science degree.
2. An overall honor point average of 3.3 or above at graduation.
3. Completion of at least fifteen credits in honors-designated course work, including at least one 400 -level Honors Program seminar; and other courses such as: all or part of the honors calculus sequence, honors courses which fulfill general distribution requirements, and honors option courses (see Honors Program, page 210).
4. Completion of a Senior Task, for which a student registers under Mathematics 490, Directed Study, Honors Program. These MAT 490 credit honorss count toward the fifteen-credit requirement.

Honors Sections in the Basic Sequence: Honors sections in Mathematics 201 and 203 are taught in the fall semester and in Mathematics 202 are taught in the winter semester. A 3.0 or higher grade point average in Basic Sequence courses already taken is required for admittance.

## Minor in Mathematics

Requirements for a Minor in Mathematics consist of the Basic Sequence (MAT 201, 202, 203, 225, and 235), Mathematics 507, and two additional Mathematics courses numbered 500 or above and applicable to degree work in mathematics. Mathematics Service Courses may not be used to satisfy this requirement.

## Scholarships and Awards

The Department of Mathematics has undergraduate scholarships for entering freshmen, designed primarily for students talented in mathematics who may not be able to attend college without assistance. In addition, the Farmers Insurance Group $A$ ward is a scholarship available to mathematics majors after their freshman year.

Each year the Department also presents awards and gifts to its outstanding undergraduate majors and graduate students.

## Introductory Courses for Non-Majors

It must be emphasized that students who, for any purpose, desire a foundation in elementary college level mathematics adequate for continuing with more advanced mathematics should elect the Basic Sequence; see page 277. On the other hand, for undergraduate or graduate students who need an introduction to college level mathematics but do not expect to take advanced courses, the Mathematics Department has designed a variety of service courses. These courses are collected in a separate list entitled 'Service Courses' which appears at the end of the Courses of Instruction; see page 281. Ordinarily, the courses in this list are not suitable for degree work in mathematics. Courses in the Service Course list are not intended as preparation for more advanced mathematical study. Therefore, they should not be elected by students in any area who plan a continuing education in mathematics.

Pre-Business Administration: Mathematics 150 (or equivalent for transfer students) is required in this curriculum. Mathematics 180 also satisfies the requirement and is recommended by the Department.

Pre-Education: The student in elementary education normally elects the sequence, Mathematics $111,112$.

## Advanced Courses for Non-Majors

Because of the fundamental role that mathematics plays in all types of scientific and technical endeavor, the advanced course offerings of the Mathematics Department must serve a group considerably larger than those preparing for a career in mathematics exclusively.

Economics, Business Administration and Computer Science: The following basic subjects are recommended to master's degree candidates as preparation for work in their profession; they also provide a solid background for students who intend to pursue doctoral studies after completion of the master's program:

Algebra 1
MAT 542
Linear Programming and Operations Research.......................................MAT 577, 586
Probability and Stochastic Processes................................................................. 570
Statistical Methods, Applied Time Series
and Design of Experiments: MAT 582,583

Engineering and Physical Applications: The Mathematics Department has several sequences in applied mathematics which provide experienced engineers and scientists from industry and government the means to acquire and maintain the technical competence needed to work at the frontiers of their fields:
Applied Analysis
MAT 522, 523
Probability Theory and Random Processes. MAT 570, 770, 771
Graph Theory and Combinatorial Mathematics................................................... 640,641
Differential Geometry .MAT 553

High School Teachers: The following courses should deepen the understanding of general concepts and techniques in algebra, geometry, probability and statistics:

Elementary Theory of Numbers.......................................................................MAT 540 Topics in Mathematics
for High School Teachers
MAT 614, 615, 616
Students who feel that they eventually would like to pursue mathematical studies beyond the level of the above sequences should make every effort to take the mathematics sequences which begin with Mathematics 560 , and 542 , respectively, and MAT 660 . These courses will help them to understand and work with abstract concepts in advanced courses.

## Statistics

Beginning students are referred to Statistics 102 . Those whose work demands a good foundation in mathematical statistics are referred to Mathematics 570 and 582 . Mathematics 583 is useful for students interested in applied statistics.

## COURSES OF INSTRUCTION ${ }^{1}$ (MAT)

$A$ minimum grade of ' $C$ ' is required in every prerequisite course.

## Undergraduate Courses

91. (MC) Basic Concepts in Mathematics. Cr. 3

Prereq: ENG 102; failure in mathematics proficiency test. Offered for S and U grades only. No degree credit. Introduction to the study of algebra, geometry, probability and statistics. (Former MAT 108.)
095. Algebra. Cr. 3

Prereq: passing a standardized basic arithmetic test administered in class (failure requires transfer to MAT 098). Offered for $S$ and $U$ grades only. No degree credit. Real number system, operations with algebraic expressions, exponents and radicals, linear equations, systems of two linear equations, solutions of quadratic equations by method of factoring; elementary geometry. For students who need a review of high school algebra and geometry.
098. Mathematics Workshop. Cr. 1-3

No degree credit. Offered for S and U grades only. Remedial, individualized workshop in mathematics. Students complete computer modules in Mathematics Tutoring Center. Individual programs must be approved by Mathematics Department at beginning of term.
180. Elementary Functions. Cr. 4

Prereq: satisfactory score on Qualifying Exam. No credit after former MAT 0178 or 0179; only 2 credits toward graduation after MAT 150. The properties and graphs of polynomials, rational functions, trigonometric functions, exponentials and logarithms; properties and graphical representation of complex numbers.
186. Discrete Mathematics for Computer Science I. Cr. 4 Prereq: MAT 180. Logic, sets, induction, relations, sequences, matrices, combinatorics, functions, applications to computer science.
(T)
187. Discrete Mathematics for Computer Science II. Cr. 4

Prereq: MAT 186. Analysis of algorithms, relations, combinatorics, graphs, Boolean algebra, application to computer science.
201. Calculus I. Cr. 4

Prereq: MAT 180 or satisfactory score on qualifying exam. No credit after MAT 151. Concept and interpretation of the derivative and integral; differentiation of rational and transcendental functions; the definite integral; area under a curve; the indefinite integral.
202. Calculus II. Cr. 4

Prereq: MAT 201 or equiv. Vectors; partial derivatives; differentiation of vector functions; techniques and applications of integration.
203. Calculus III. Cr. 4

Prereq: MAT 202 or equiv. Multiple integrals; sequences and infinite series; Taylor Series; vector analysis.
221. Elementary Probability and Statistics. (MAT 615). Cr. 4 Prereq: MAT 201. No credit after MAT 570. Counting techniques, discrete sample spaces and probability, random variables, mean and variance, joint distributions, the binomial and normal distributions, the central limit theorem, estimation and hypothesis testing.
225. Elementary Linear Algebra. Cr. 3

Prereq: MAT 202 or equiv. Topics include: systems of linear equations, matrices, vector spaces, inner products, linear transformations and eigenvalues. Applications presented.

## 235. Elementary Differential Equations. Cr. 3

Prereq: MAT 203 or equiv. Topics include: first order equations, higher order linear equations, Laplace transforms, linear systems. Applications presented throughout the course.

## 490. Directed Study: Honors Program. Cr. 1-4(Max. 8) <br> Prereq: admission to Honors Program by Mathematics Honors Committee.

## Undergraduate and Graduate Courses

## 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.

## 507. Advanced Calculus. Cr. 4

Prereeq: MAT 203, and $\mathbf{2 2 5}$ or 235 . Limits; continuity; sequences and series of functions; uniform convergence; advanced topics in power series; Fourier series; transformetions, the Jacobian; implicit and inverse function theorems; improper integrals and functions defined by improper integrals; Lagrange multipliers.

## 510. Numerical Methods. Cr. 3

Prereq: MAT 203, 225 and CSC 102 or familiarity with a programming language. Topics include: numerical errors, solutions of nonlinear equations, interpolation, approximation, numerical integration and differentiation, and matrices and systems of linear equations. (Y)

## 522. Partial Differential Equations and Boundary Value Problems. Cr. 4

Prereq: MAT 507. Boundary value problems of mathematical physics; Sturm-Liouville problems; eigenvalues and eigenfunctions; Green's functions; variational principles; the Rayleigh-Ritz method.

## 523. Complex Variables and Applications. Cr. 4

Prereq: MAT 507. No credit after MAT 660. Cauchy-Riemann equations; elementary functions; mappings by elementary functions; the Cauchy integral formula; Morera's theorem; Taylor series; Laurent series; residues and poles; conformal mappings; the Schwarz-Christoffel transformations; potential theory; Fourier and Laplace transforms and applications in differential and integral equations.
(B)
528. Methods of Differential Equations. Cr. 3

Prereq: MAT 235. Linear nth 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.
535. (PHI 535) Logical Systems I. Cr. 4

Prereq: PHI 185 or PHI 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.

[^62]540. Elementary Theory of Numbers. Cr. 3

Prereq: MAT 203 and 225. Unique factorization theorem; order of magnitude of arithmetic functions; congruences, quadratic residues, law of reciprocity; continued fractions; elements of geometry of numbers; second pearl of number theory.

## 541. Applied Linear Algebra. Cr. 4

Prereq: MAT 203 and 225, or consent of instructor. Gaussian elimination, vector spaces, orthogonality, least squares approximation, Householder orthonormalization, definite and semidefinite matrices, Rayleigh's quotient. Applications such as differential equations, Markov processes, linear programming, networks, game theory. (B)
542. Algebra I. Cr. 4

Prereq: MAT 203 and 225. Abstract concepts: sets, mappings, equivalence relations, induction, general methods of proof. Group theory: groups, subgroups, cyclic groups, direct products, cosets, Lagrange's Theorem, quotient groups, homomorphisms, permutation groups. Rings and fields (basic definitions) and vector spaces: basis, dimension, linear transformations.

## 543. Algebra II. Cr. 4

Prereq: MAT 542. Group theory continued: Sylow Theorems, finite abelian groups. Ring Theory: rings, integral domains, fields of quotients, homomorphisms, ideals, quotient rings, P.I.D.s, U.F.D.s, polynomial rings. Advanced topics in linear algebra: canonical forms. Field theory: extensions, splitting fields, finite fields, geometric constructions.
552. Elementary Topology of Surfaces. Cr. 3

Prereq: MAT 204. No credit toward graduate degree in mathematics or statistics. An intuitive approach to the topology of surfaces. Classification of triangulated surfaces by cut-and-paste techniques; sphere, torus, mobius strip, Klein bottle, projective plane; Euler characteristic.
553. Differential Geometry of Curves and Surfaces I. Cr. 3

Prereq: MAT 203 and 225. Classical differential geometry of curves and surfaces in $R$ (to the third power).
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.
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.
570. Probability and Stochastic Processes. Cr. 4

Prereq: MAT 203, 225 or 235 . No credit after MAT 615; only two credits after 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.
571. Stochastic Processes with Applications. Cr. 3

Prereq: MAT 570 or consent of instructor. Non-measure theoretic introduction to the theory of stochastic processes and its applications, with emphasis on Markov processes and stationary processes with both discrete and continuous parameters.
577. Mathematical Models in Operations Research. Cr. 3

Prereq: MAT 203, 225, and 221 or 570 or consent of instructor. Mathematical models (deterministic and/or probabilistic) applied to dynamic programming; games; queues and inventories.
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.

## 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.
586. Introduction to Linear Programming. Cr. 3

Prereq: MAT 203 and 225. Theory of linear programming; methods of solving linear programming problems (simplex, dual simplex and other methods); applications of linear programming (problem formulation, computational aspects, sensitivity analysis); networks.
589. Special Topics in Mathematics. Cr. 3-4(Max. 12)

Prereq: MAT 203, and 225 or 235 . Material currently of interest to students and faculty. Topics to be announced in Schedule of Classes.
(I)
590. Directed Study. Cr. 1-4(Max. 8)

Prereq: written consent of adviser and chairperson (and of graduate officer for graduate students). Undergraduates who elect this course must be mathematics majors of honors caliber. Content will vary to satisfy needs of individual student.
614. Topics in Mathematics for High School Teachers I. Cr. 3 Prereq: MAT 203, and 225 or 235 . Axiomatic geometry: logic, methods of proof, models; Euclidean geometry based on Hilbert's axioms; the Parallel Postulate; 'Neutral' and non-Euclidean geometries; Hyperbolic geometry; Poincare models.
615. (MAT 221) Topics in Mathematics for High School Teachers II. Cr. 4

Prereq: written consent of chairperson of mathematics education. No credit after MAT 570. Counting techniques, discrete sample spaces and probability, random variables, mean and variance, joint distributions, the binomial and normal distributions, central limit theorem, estimation and hypothesis testing.
616. Topics in Mathematics for High School Teachers III. Cr. 3 Prereq: MAT 203 and 225. No credit after MAT 542. Algebraic structure: rings, integral domains, fields, groups; applications to polynomials and theory of equations.

## 640. Graph Theory. Cr. 4

Prereq: MAT 542 or consent of instructor. Basic concepts of graphs and directed graphs; trees; cycles and circuits; connectivity; traversibility; 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.
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.
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.
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.
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; Reimann mapping theorem.
683. Design of Experiments. Cr. 3

Prereq: MAT 582. Randomized blocks; Latin and Graeco-Latin squares; factorial designs; confounding; split plot; fractional replication; balanced incomplete blocks.

## Service Courses

## 090. Mathematics for Pre-Nursing Students. Cr. 3

Prereq: one unit of high school algebra. Offered for $S$ and $U$ grades only. No degree credit. Open only to pre-nursing students. Review of arithmetic and elementary algebra. Fractions, percentage, ratio, proportions, and units of measurement. Operations with algebraic expressions, exponents and radicals, logarithms, linear and quadratic equations.
111. Mathematics for Elementary Teachers I. Cr. 3

Prereq: passing of a standardized basic arithmetic test administered in class. No degree credit in College of Liberal Arts. Open only to students in teacher preparation curricula. Whole numbers, integers, geometry.
112. Mathematics for Elementary Teachers II. Cr. 3

Prereq: MAT 111. No degree credit in College of Liberal Arts. Open only to students in teacher preparation curricula. Rational numbers, geometry, probability, statistics, number theory.
150. Finite Mathematics for the Social and Management Sciences. Cr. 3
Prereq: satisfactory score on Qualifying Exam. No credit after MAT 180; not for students who plan to take MAT 180. Finite mathematical methods for model building in the social and management sciences. Polynomial, exponential, and logarithmic functions, matrices, and linear programming.
151. Calculus for the Social and Management Sciences. Cr. 3 Prereq: MAT 150 or equiv. No credit after MAT 201. Elementary techniques of calculus with particular application to the social and management sciences. Sequences and limits, differentiation, integration and optimization.
340. Applied Statistics. (E T 340). Cr. 3

Prereq: college algebra. No degree credit in College of Liberal Arts. Student computer account required. Application of probability concepts; statistical theory in the use of engineering data.

## (T)

343. Applied Calculus I. (E T 343). Cr. 4

Prereq: MAT 180. No degree credit in College' of Liberal Arts. Limits, derivatives, applications of derivatives, definite integrals and their applications, and trigonometric functions.
345. Applied Calculus II. (E T 345). Cr. 4

Prereq: MAT 343. No degree credit in College of Liberal Arts. Continuation of MAT 343, including logarithmic and exponential functions, first and second order ordinary differential equations, vectors, polar coordinates, Laplace transforms, Taylor series, and Fourier series.
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.
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.

## 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.
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.
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
Degree Programs

> Bachelor of Arts - with a major in Hebrew
> Bachelor of Arts - with a major in Near Eastern languages
> Bachelor of Arts - with a major in Near Eastern studies
> - Master of Arts- with a major in Near Eastern languages

This department offers programs and courses of instruction which acquaint students with the languages and civilizations of the Near East and the classical traditions of that locale. In addition to reading texts in the original languages, the student may elect courses from a wide range of offerings for which no language other than English is required. A student who wishes to major in the Department should plan a program with the departmental adviser as soon as possible after entering the University. Each program is arranged individually to combine the most varied advantages consistent with the student's interests and purposes.

## Bachelor of Arts Degrees

Admission Requirements for this program are satisfied by the general requirements for undergraduate admission to the University; see page 13.

DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work including satisfaction of the College of Liberal Arts Group Requirements (see page 199) and the University General Education Requirements (see page 20), as well as the major requirements of one of the following major degree programs. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively.

## Major Requirements

Major Requirements in Hebrew: A major in Hebrew consists of twenty-six credits beyond Hebrew 102. In addition, the student is required to take twelve credits in Hebrew culture including the Biblical and post-Biblical periods.

Major Requirements in Near Eastern Languages: A major in Near Eastern languages consists of: (a) twenty-four credits beyond first year proficiency in Arabic or Hebrew, and first year proficiency in a second language: Arabic, Aramaic, or Hebrew; or (b) eleven credits beyond first year proficiency in both Arabic and Hebrew. In addition, the student is required to complete twelve credits in elective courses in ancient near eastern, Hebrew, or Islamic culture.

Major Requirements in Near Eastern Studies: A major in Near Eastern Studies consists of eleven credits beyond the first year proficiency in Arabic or Hebrew. In addition, the student is required to take thirty credits in elective courses including no less than six credits in each of the following: ancient near eastern culture, Hebrew culture, Islamic culture.

## Honors Program

The Honors Program in Near Eastern and Asian Studies is open to students of superior academic ability who are majoring in near eastern and asian studies. To be recommended for an honors degree from this department, a student must maintain a cumulative honor point average of at least 3.3 . $\mathrm{He} /$ she must accumulate at least fifteen credits in honors-designated course work and must demonstrate the ability to do independent study and an original Honors Thesis during the senior year. For information about the requirements of the department's honors curriculum, contact the Chairperson of the Department, or the Director of the Liberal Arts Honors Program (577-3030).

## COURSES OF INSTRUCTION¹ Arabic (ARB)

## 101. Elementary Arabic I. Cr. 4

Material fee as indicated in Schedule of Classes. Vocabulary, forms, syntax, graded readings.
102. Elementary Arabic II. Cr. 4

Prereq: ARB 101 or consent of instructor. Material fee as indicated in Schedule of Classes. Continuation of ARB 101.
201. (FC) Intermediate Arabic I. Cr. 4

Prereq: ARB 102 or consent of instructor. Material fee as indicated in Schedule of Classes. Continuation of grammar, readings in classical and modern prose.
202. Intermediate Arabic II. Cr. 4

Prereq: ARB 201 or consent of instructor. Continuation of ARB 201.
203. Arabic for Business. Cr. 4

Prereq: ARB 202 or consent of instructor. Arabic for basic business transactions.
390. Directed Study. Cr. 1-6(Max. 9)

Prereq: consent of chairperson. Readings, periodic reports and consultations.
401. Arabic Linguistics. (LIN 401). Cr. 3

Prereq: ARB 202 or consent of instructor. Continuation of intermediate grammar exercises in translations, reading in selected modern texts.

[^63]501. Medieval Arabic Texts I. Cr. 3

Prereq: ARB 201 or consent of instructor. Reading and translation of Arabic Medieval texts.
502. Medieval Arabic Texts II. Cr. 3

Prereq: ARB 501 or consent of instructor. Continuation of ARB 501.
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.

## Hebrew (HEB)

101. Elementary Hebrew I. Cr. 4

Material fee as indicated in Schedule of Classes. Grammar, vocabulary, graded readings, discussions.
102. Elementary Hebrew II. Cr. 4

Prereq: HEB 101 or consent of instructor. Material fee as indicated in Schedule of Classes. Continuation of HEB 101.
201. (FC) Intermediate Hebrew I. Cr. 4

Prereq: HEB 102 or consent of instructor. Material fee as indicated in Schedule of Classes. Review of grammar, readings in modern Hebrew texts.
202. Intermediate Hebrew II. Cr. 4

Prereq: HEB 201 or consent of instructor. Continuation of HEB 201.
390. Directed Study. Cr. 3-6(Max. 9)

Prereq: consent of chairperson. Readings; consultations and reports.
500. Post-Biblical Texts. Cr. 3

Prereq: HEB 201 or consent of instructor. Selected readings of prose texts.
507. Readings in the Bible. Cr. 3(Max. 9)

Prereq: HEB 501 or consent of instructor.
590. Directed Study. Cr. 3-6(Max. 9)

Prereq: undergrad., consent of chairperson; grad., consent of chairperson and graduate officer. Readings; consultations, reports.

## Near Eastern Studies (N E)

200. (FC) Introduction to Islamic Civilization of the Near East. Cr. 3
Muhammad and the origins of Islam; the growth of Islamic institutions.
201. The Bible and Ancient Mythology. Cr. 3

The Bible and Biblical religion in the context of its antecedents in the ancient world.
302. Survey of Jewish History and Civilization. Cr. 3

General survey of Jewish history.
303. Great Cities of the Near East. Cr. 3

Illustrated study of the urban centers of the Near East: Mecca, Baghdad, Cairo, Jerusalem and others.
(Y)
331. History and Civilization of the Ancient Near East I. Cr. 3 History, law and religion based on source readings in translation; from the beginnings to the Hellenistic period.
332. History and Civilization of the Ancient Near East II. Cr. 3 Prereq: N E 331 or consent of instructor. Continuation of N E 331.
355. (ANT 355) (FC) Arab Society in Transition. Cr. 3

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.
365. History of the Jews I. Cr. 3

From the Hellenistic period to the seventh century.
366. History of the Jews II. Cr. 3

Prereq: N E 365 or consent of instructor. The middle ages and modern times.
368. (HS) Islamic History: The Formation of the State. Cr. 3

History of the Near East from the death of the Prophet until the rise of the Abbasid Empire.
(Y)
369. (HS) Islamic History: The Formation of the Empire. Cr. 3 Prereq: NE 368 or consent of instructor. The rise of the Abbasids as a world empire with particular emphasis on their revolutionary origins.
(Y)
390. Directed Study. Cr. 3-6(Max. 9)

Prereq: consent of chairperson. Readings; consultations and reports.
498. Honors Thesis in Near Eastern Studies. Cr. 3-6

Prereq: senior standing; 3.5 h.p.a. Open only to majors in Near Eastern studies. Research problem completed under direction of faculty member.
590. Directed Study. Cr. 3-6 (Max. 9)

Prereq: undergrad., consent of chairperson; grad., consent of chairperson and graduate officer. Readings, consultations, reports.

## Swahili (SWA)

## 101. Elementary Swahili I. Cr. 4

Prereq: sophomore standing. Material fee as indicated in Schedule of Classes. Foreign language credit only. Training in pronunciation, aural comprehension, oral and written expression. Supervised laboratory period for part of class preparation.

## 102. Elementary Swahili II. Cr. 4

Prereq: SWA 101. Foreign language credit only: Material fee as indicated in Schedule of Classes. Continuation of SWA 101.
201. (FC) Intermediate Swahili. Cr. 4

Prereq: SWA 102. Foreign language credit only. Material fee as indicated in Schedule of Classes. Conversational Swahili and grammar review; reading of Swahili literature. Continuation of SWA 102. (S)

# NUTRITION AND FOOD SCIENCE 

## Office: 160 Old Main

Chairperson: Leora A. Shelef
Administrative Assistant: Evette Weaver

## Professors

Mary Jane Bostick (Emerita), Esther D. Callard (Emerita), Leora A. Shelef

## Associate Professors

K.-L. Catherine Jen, Michael B. Zemel

Assistant Professor
Ifendu Nnanna

## Senior Lecturer

Joyce Mooty

## Lecturers

Paula Pavlovich, Susan Ryskamp

## Field Instructors

Joan Brown (VA Medical Center-Allen Park), Mary Clor (St. Clair Renal Center), Susan Crankshaw (William Beaumont Hospital-Troy), Jean Egan (Oakland County Health Department), Karen Jackson (Saratoga Hospital-Detroit), Mary Jaskowski (Detroit Osteopathic Hospital), Cheryl Nagy (Pontiac Osteopathic Hospital), John Perkins (U.S. Army Tank-Automotive Command), Pat Perry (VA Medical Center-Allen Park), Joanne Reid (Hutzel Hospital), Tonia Reinhard (Macomb County Cooperative Extension), Vera Thompson (Hammond Senior Center), Jennie Valin (Selectcare), June Ventimiglia (Children's Hospital of Michigan), Deborah Zibell-Frisk (Providence Hospital-Detroit)

## Degree Programs

## Bachelor of Arts - with a major in nutrition and food science

Bachelor of Science - with a major in nutrition and food science

## Bachelor of Science in Medical Dietetics

## * Master of Arts - with a major in nutrition and food science

* Master of Science - with a major in nutrition and food science
* Doctor of Philosophy - with a combined major in nutrition and food science and one of the following: biochemistry, biological sciences, chemistry, or physiology.

The courses offered by this department are designed for students in three distinct groups: (a) those majoring in nutrition and food science who are interested in entering either the nutrition or the food science profession; (b) those interested in entering the dietetics field; and (c) those majoring in nutrition and food science with the intention of entering managerial positions in a variety of food service establishments.

## BACHELOR'S DEGREES

Admission Requirements: See the general requirements for undergraduate admission to the University, page 13. Students contemplating a major program in Nutrition and Food Science should consult with the assigned undergraduate departmental adviser as soon as possible, and no later than the beginning of the sophomore year. Transfer students should consult with the assigned undergraduate departmental adviser during the semester prior to their transfer.

DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits of course work including satisfaction of the College of Liberal Arts Group Requirements (see page 199) and the University General Education Requirements (see page 20), as well as the major requirements of one of the following programs. All course work must be completed in accordance with the academic regulations of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively.

## Bachelor of Arts with a Major in Nutrition and Food Science

This curriculum allows students to major in nutrition and food science with additional course work in management and exposure in other cognate fields. It is recommended for students interested in managerial positions in food service establishments and requires a less rigorous background in chemistry and other natural science courses than is required for the B.S. degree in this discipline. The student is provided with skills in personnel management, equipment, food and nutrition, materials management, and cost control and other data processing systems. Employment opportunities include university or school food services, industrial and commercial food service systems, hospitals, nursing homes or extended care food service operations.

Admission Requirements: See above under Bachelor's Degrees.
DEGREE REQUIREMENTS: See above under Bachelor's Degrees.
Major Requirements: A student must complete at least thirty-two credits in the following courses and have an overall honor point average of at least 2.0 in course work within the major field. Course requirements for this bachelor's degree consist of courses offered by Wayne State University and courses available from local community colleges on a dual enrollment basis with the University. Requirements are as follows:

## UNIVERSITY CORE COURSES

Nutrition and Food Science 203, 213, 414, 214, 413, 522, 535, 592, 616, 617, 685
Biological Sciences 100, 220
Chemistry 102, 103
Computer Science 100
Economics 101, 102
Mathematics 150
Psychology 240
Accounting 301
Management 550, 570, 574

For specific degree requirements, see the Wayne State University
Graduate Schoal Bulletin.

## COMMUNITY COLLEGE COURSES

Candidates for the degree must complete one course in each of the following areas: food management, quantity food purchasing, quantity food production, equipment and design. As many as twelve credits from these courses can be applied to the degree either by transfer from previous community college work or by concurrent enrollment with a local community college. For an approved list of courses from area institutions, consult the Department.

## Bachelor of Science with a Major in Nutrition and Food Science

This program is designed for science-oriented students who are interested in the various food and nutrition professions. Students are prepared for these professions by the integration of chemistry and the biological sciences with courses in food science and nutrition. Employment opportunities may be found in various phases of food processing, research and development, public health, and community education, as well as in positions in state and federal regulatory agencies dealing with food products. The program is offered with two curricular orientations: basic nutrition and food science, and general dietetics, either of which provides good preparation for medical school enrollment. Students should consult an adviser for program planning.

Admission Requirements: See above under Bachelor's Degrees.
DEGREE REQUIREMENTS: See above under Bachelor's Degrees.

## - Basic Nutrition and Food Science

Major Requirements: Students must complete ninety-two credits in the following science courses of which at least thirty-two must be in the major subject, nutrition and food science:

## CORE COURSES

Nutrition and Food Science $213,214,221,413,414,513,523,685$ and an additional ten credits of upper division course work in Nutrition and Food Science.
Biological Sciences 101, 102, 220, 287, 507, 525
Chemistry 105 or $107,108,224,226,227,312$ or 510
Chemistry 560 or Biochemistry 501
Computer Science 102
Mathematics 180
Physics 213, 214
Statistics 102

## - General Dietetics

This curriculum provides the theoretical and practical knowledge in food science, nutrition, food service systems management, chemistry and the biological sciences, to prepare students for careers in dietetics. Upon completion of the program, the student earns the Bachelor of Science with a Major in Nutrition and Food Science. To become a registered dietitian, a graduate of the program must complete an American Dietetic Association (ADA) accredited internship in a hospital or other accredited health agency; following this he or she must successfully complete the registration examination given by the ADA. Alternatively, a student may pursue a master's degree in nutrition and food science and complete a six-month pre-planned approved work experience, followed by successful completion of the ADA registration examination. Students should confirm the availability of this option with a Nutrition and Food Science adviser.

Major Requirements: Candidates for the Bachelor of Science with a Major in Nutrition and Food Science and concentration in general dietetics must complete the core courses and general dietetics sequence of the medical dietetics degree outlined below.

## Bachelor of Science in Medical Dietetics

The medical dietetics program prepares students to deal with the maintenance and improvement of human health through study and research in food science, nutrition and food service systems management. This program is accredited by the American Dietetic Association and focuses on the nutritional care of persons in hospitals and community care settings. The curriculum is designed to coordinate classroom learning and clinical experience, preparing students for entry-level practice as clinical dietitians. Unlike the program in general dietetics, no post-baccalaureate internship is required. Upon completion of the program, the student earns the Bachelor of Science in Medical Dietetics degree. The graduate is then eligible for membership in the American Dietetics Association and may then take the national registration examination for professional certification.

Admission Requirements: Admission to this program is granted only to students with junior standing in the College after completion of the following core courses. Application should be made during the winter semester preceding the fall semester of anticipated entry into the program. Transfer and post-baccalaureate students must meet the pre-professional science requirements (see core courses, below) before acceptance into the program. Transferability of credit must be verified by the College of Liberal Arts advisers and medical dietetics faculty.

## CORE COURSES:

Nutrition and Food Science: 213, 214, 221, 414, 513, 523, 616, 617, 685
Anthropology 210 or Sociology 200
Biological Sciences 101, 220, 287
Chemistry 105 or 107, 108, 224
Economics 102
Psychology 102
Statistics 102
Biochemistry 501
Management 550
DEGREE REQUIREMENTS: Candidates for this degree must complete at least 130 credits including the above core courses, the following sequences in general dietetics and medical dietetics, as well as any remaining courses necessary to satisfy the College Group Requirements and the University General Education Requirements (see pages 199 and 20, respectively).

## GENERAL DIETETICS

Nutrition and Food Science 413, 522, 525
Psychology 240
Nanagement 570
Accounting 550
Instructional Technology 511, 512

## MEDICAL DIETETICS

Nutrition and Food Science 321, 322, 421, 422, 526

## Honors Program

Admission: A minimum honor point average (h.p.a.) of 3.3 is required for enrollment in the Department of Nutrition and Food Science Honors program. Prospective Honors students should consult with an adviser in the Department during the freshman year. Transfer students or others with a Nutrition and Food Science h.p.a. of 3.5 may be accepted into the program without having taken the NFS 221 Honors section.

## Honors Requirements:

1. Enroll in the Honors section of Nutrition and Food Science 221
2. Complete at least one 400 -level Honors Program seminar.
3. Complete at least three credits in an independent research project (NFS 596)
4. Complete at least fifteen credits in honors-designated course work, including the above. The additional course work may be obtained in this department, or in any other department of the College. (For a listing of honors courses offered each semester, see the Schedule of Classes under 'Honors Program.'

Students must have an overall honor point average of 3.3 and maintain an overall honor point average of at least 3.0 in the major to be awarded the Honors Degree.

## Minor in Nutrition and Food Science

Completion of the minor in Nutrition and Food Science requires a minimum of eighteen credits in Nutrition and Food Science courses as follows:

Nutrition and Food Science 213, 214, 221
Plus eleven credits from the following:
Nutrition and Food Science 413, 414, 513, 522, 523, 616, 617, 622, 685

## COURSES OF INSTRUCTION ${ }^{1}$ (NFS)

## 203. (LS) Introductory Nutrition. Cr. 3-4

Material fee if taken for four credits. Material fee as indicated in Schedule of Classes. Food as a carrier of nutrients; food availability; facts of nutrient utilization including digestion, metabolism and excretion. Patterns of food consumption based on biological, psychological and social needs; and anthropological findings. Laboratory component illustrates physiological and biochemical principles of nutrition.
(T)
213. Introductory Food Science. Cr. 2

Coreq: NFS 214 for nutrition and food science majors only. Chemical, physical and biological properties of foods which affect their keeping quality, nutritional and organoleptic values. For students interested in the scientific study of foods. (F,W)
214. Introductory Food Science Laboratory. Cr. 2

Coreq: NFS 213. Material fee as indicated in Schedule of Classes. Experimental study of principles discussed in NFS 213. For students interested in the scientific study of food.
(F,W)
221. Human Nutrition. Cr. 3-4

Prereq: CHM 103 or CHM 220 and BIO 287. Students in honors

[^64]section elect for four credits. Principles of the science of nutrition. Emphasis on physiological requirements of nutrients for human growth, development and maintenance within the life cycle. Honors students participate in additional reading, discussion and presentations.

## 321. Medical Dietetics I. Cr. 8

Prereq: completion of all pre-professional courses as specified in course outline. Open only to medical dietetics majors. Material fee as indicated in Schedule of Classes. Introduction to coordinated classroom and clinical study of dietetic practice. Focus on patient health care delivery problems in a primary care setting.
322. Medical Dietetics II. Cr. 8

Prereq: NFS 321. Open only to medical dietetics majors. Material fee as indicated in Schedule of Classes. Continuation of NFS 321. Focus on patient health care delivery problems in acute care.
413. Food Preservation. (NFS 713) (CHE 613). Cr. 3 or 4

Prereq: BIO 220, NFS 213; 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.
414. Introductory Laboratory Techniques in Nutrition and Food Science. Cr. 4
Prereq: NFS 213 and 221 or equiv. Material fee as indicated in Schedule of Classes. Basic modern and classical analytical techniques and instruments in nutrition and food science. Background theory to principals of instrumental assays. Procedures for evaluation of macro and micro food components analysis. Physiological functions relevant to nutrition.

## 421. Medical Dietetics III. Cr. 8

Prereq: NFS 322. Open only to medical dietetics majors. Material fee as indicated in Schedule of Classes. Continuation of NFS 322. Focus on patient health care delivery problems in both acute care and primary care settings.
422. Medical Dietetics IV. Cr. 9

Prereq: NFS 421. Open only to medical dietetics majors. Material fee as indicated in Schedule of Classes. Continuation of NFS 421. Focus on management of nutritional care in selected health care delivery systems.
490. Directed Study. Cr. 1-4

Prereq: written consent of instructor.
491. Workshop. Cr. 2-4(Max. 8)

Application of theoretical principles to selected area of nutrition and food science. Topics and prerequisites to be announced in Schedule of Classes.
495. Honors Directed Study. Cr. 2-4(Max. 6) Prereq: College honors standing; 3.3 h.p.a.
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.
513. Advanced Food Science. Cr. 3

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 food.

## 522. Community Aspects of Nutrition. Cr. 4

Prereq: NFS 213, 214, 221. Introduction to community assessment. Uses of assessment in determining cultural, economic, and lifestyle interrelationships that impact on nutrition problems and education
needs throughout the life cycle
523. Nutrition and Metabolism. Cr. 4

Prereq: NFS 221, BIO 287 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.

## 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.
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.
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.
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.
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.
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.
685. Seminar. Cr. 2-4(Max. 6)

Prereq: consent of instructor; senior standing. Topics to be announced in Schedule of Classes.

## PEACE AND CONFLICT STUDIES

Office: 5165 Gullen Mall
Director: Lillian Genser
Training Director: Marilyn Schmidt

## Executive Committee

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Vice-Chairperson: Otto Feinstein, Political Science
Richard Angell, Philosophy
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Aleya Rouchdy, Near Eastern and Asian Studies
Alvin Saperstein, Physics
Peter Schoenbach, Music
Mary Sengstock, Sociology
Francis Shor, Weekend College
Ross Stagner, Psychology (Emeritus)
Guy Stern, Romance Languages
Maurice Waters, Political Science
Scott Wilkinson, Wesley Foundation
Edward Wise, Law
Marvin Zalman, Criminal Justice

## Co-Major Program

The Peace and Conflict Studies Co-Major Program integrates varieties of courses and research programs within the traditional disciplines that deal with this most fundamental of human problems. The program aims: (1) to coordinate the approaches to human conflict now being presented in the University; (2) to provide a framework within which students interested in these subjects might develop tools and expertise needed for graduate work or positions in education, government and business that relate to conflict and its management; (3) to compare techniques of individual, group and societal conflict resolution that are being taught in numerous courses in the social sciences and humanities; (4) to provide opportunities for co-majors to work on projects in the community that involve conflict and its resolution.

The program is designed around four core courses, a senior seminar and seventeen credits in conflict-related elective courses, of which at least six credits must be upper-divisional. It is possible for some of the elective courses to count toward satisfaction of the requirements of the major department or to fulfill college Group Requirements. Depending upon the interest of the student, with the consent of the Director, other courses may be substituted for any of the core courses.
CORE REQUIREMENTS (16 Credits)
PCS 200 - Introduction to Peace and Conflict Studies ..... 3
PCS 600 - Senior Seminar in Peace and Conflict Studies ..... 3
and any three of the following:
ECO 530 - International Economic Relations ..... 4
HIS 513 - Foreign Relations of the United States Since 1920 ..... 4
PCS 201 - Topics in Peace and Conflict Studies ..... 4
PCS 500 - Dispute Resol ution ..... 3
PHI 110 - Contemporary Moral Issues ..... 3
PS 281 - World Politics ..... 4
PSY 656 - Psychology of Union-Management Relations ..... 3
SOC 555 - Collective Behavior: Masses, Mobs, and Social Relations ..... 3

## ELECTIVES (17 Credits)

The University offers a large number of conflict-related courses which are suitable electives for this program. The following are the most appropriate for the co-major; others might qualify for inclusion upon petition of the student.

## College of Liberal Arts

creditsANT 514 - Biofogy and Culture ..... 3
ANT 520 - Social Anthropology .....  3
ANT 665 - Studies in Physical Anthropology ..... 3
ANT 670 - Topics in Medical Anthropology. ..... 3
BIO 569 - Animal Behavior ..... 3
ECO 441 - Labor Institutions ..... 4
ECO 560 - Introduction to Development Economics ..... 4
GEG 320 - (SS) Western Europe ..... 3
GEG 530 - Soviet Union ..... 4
HIS 512 - Foreign Relations of the United States to 1920 ..... 3
HIS 529 - American Labor History ..... 4
HIS 544 - Twentieth Century Europe ..... 4
HIS 548 - Nazi Germany ..... 3-4
PHI 524 - Special Topics in Social and Political Philosophy ..... 4
PHI 527 - Philosophy of Law ..... 4
PHY 202 - Nuclear War ..... 4
PS 202 - Current Issues in American Foreign Poticy ..... 2
PS 251 - Introduction to Political Ideologies ..... 4
PS 483 - International Law ..... 4
PS 504 - American Political Reform Movements ..... 4
PS 581 - American Foreign Policy and Administration ..... 4
PS 583 - International Conflict and Its Resolution ..... 4
P S 584 - The Politics of Disarmament ..... 4
PSY 230 - Psychology of Adjustment ..... 4
PSY 260 - Psychology of Social Behavior ..... 4
PSY 331 - Abnormal Psychology ..... 4
PSY 499 - Special Topics in Psychology ..... 4
PSY 563 - Group Dynamics ..... 3
PSY 565 - Psychological Aspects of Leadership ..... 3
SOC 202 - (SS) Social Problems ..... 3
SOC 382 - Criminology: Society, Crime and the Criminal ..... 3
SOC 410 - (SS) Social Psychology ..... 3
SOC 540 - The Family ..... 3
SOC 546 - Sex Roles: Being Men and Women ..... 3
SOC 550 - Urban and Metropolitan Living ..... 3
SOC 557 - Race Relations in Urban Society. ..... 3
SOC 583 - Juvenile Delinquency ..... 3
College of Education
EDP 541 - Mental Hygiene and the Problems of Education ..... 2.3
EDS 662 - Sociology of Urban Schools ..... 2-3
EHP 764 - Seminar: Economic and Political Policies and Education ..... 2-4
SSE 673 - New Perspectives in Social Education ..... 1.8

## Minor Program

The center for Peace and Conflict Studies offers an undergraduate minor program. Minor requirements consist of four courses: PCS $200,201,202$, and 600 (to be taken in order of their numerical sequence), as well as a minimum of six credits to be elected from courses in the lists of Co-Major Core Requirements and Electives cited above.

# COURSES OF INSTRUCTION ${ }^{1}$ (PCS) 

## 200. Introduction to Peace and Conflict Studies. (HIS 250) (P S

 282). Cr. 3Open to all undergraduate students. Introduction to the peace and conflict studies co-major. Survey, ranging from biology to international politics; conflict among animals, within the individual, the family, the neighborhood and region, the nation and global community.
(F,W)
201. Topics in Peace and Conflict Studies. Cr. 1-4

Special topics relating to peace and conflict studies.
500. Dispute Resolution. (CRJ 594) (P S 589) (PSY 571). Cr. 3 Overview of the processes and sectors in the field of dispute resolution including negotiation, mediation, arbitration, and conciliation.
501. Internship in Dispute Resolution. Cr. 3

Prereq: PCS 500. Offered for S and U grades only. Internship in dispute resolution or mediation agency in Detroit area.

## 600. Senior Seminar in Peace and Conflict Studies. Cr. 3

Prereq: senior standing; PCS major. Offered for undergraduate credit only. Students work on a research project relevant to concepts studied in the program.


[^65] abbreviations

## PHILOSOPHY

Office: 767 Mackenzie Hall

Chairperson: T. Michael McKinsey

## Professors

Richard B. Angell, Lawrence B. Lombard, Alfred Stern

## Associate Professors

Barbara M. Humphries, T. Michael McKinsey, Lawrence Powers, Bruce A. Russell, William D. Stine, Robert J. Titiev, Robert J. Yanal

## Assistant Professor

Herbert Granger

## Degree Programs

## Bachelor of Arts-with a major in philosophy

* Master of Arts-with a major in philosophy
*Doctor of Philosophy—with a major in philosophy
Courses in this department are designed for four types of service:

1. They contribute to the liberal education of any student, whatever his/her predominant interest, by their emphasis on clear and cogent thought, by consideration of the interrelations of fact and value, by training in logic and the methodology of inquiry, and by a study and analysis of major philosophical outlooks.
2. They supply a minor ars cognate courses to students majoring in other departments who wish to study their major subject in its wider philosophical implications.
3. They give departmental majors a wide and intensive training in philosophy. The major appeals to those who wish to take graduate work in philosophy and to those who wish a broad background from which to study and understand the emergence and conflict of ideas in relation to contemporary problems.
4. They supply a relevant major and minor for students who plan a career in such fields as the law or the ministry.

## Bachelor of Arts <br> With a Major in Philosophy

Admission Requirements for the College of Liberal Arts are satisfied by the general requirements for undergraduate admission to the University; see page 13. Students who are planning to major in philosophy or who simply wish advice or consultation concerning course offerings and programs should see the Director of Undergraduate Studies in Philosophy. The Department offers a regular major and an honors major.

DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work including satisfaction of the College of Liberal Arts Group Requirements (see page 199) and the University General Education Requirements (see page 20), as well as the major requirements listed below. All course work must be

[^66]completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively.

Major Requirements: A candidate for the regular major must complete a minimum of eight courses in philosophy, including the following courses or selections from course groups (found in the Courses of Instruction section below).

1. PHI 210 (or 541 or 542 ) and PHI 211 (or 545 or 546 ) from the History of Philosophy group;
2. one course from the Theory of Value group;
3. one course from the Philosophical Problems group;
4. Symbolic Logic (PHI 185 or 186); and
5. three courses at the 500 -level or above.

NOTE: Rather than taking a 200 - or 300 -level course in satisfying any of requirements (2) or (3), one may take a 500 -level course from the same group instead; however, the student should consult the instructor before doing so. Courses taken at the 500 -level which are used to satisfy any of requirements (1) through (4) may also be used to satisfy requirement ( 5 ), though the eight course minimum must be met.

## Honors Program

Admission to the honors program in philosophy is determined on the basis of the student's overall record. The student will normally be required to have (a) a minimum honor point average of 3.3 , (b) credit in at least three philosophy courses, and (c) a ' $B$ ' or better average in philosophy courses. To remain in the philosophy honors program, the student must maintain a $\mathbf{B}$ or better average in philosophy courses.

Honors Requirements: To receive an Honors Degree, the candidate must
a. complete the course requirements for the regular major, plus PHI 487 and 489 (to be taken during the candidate's senior year),
b. pass comprehensive examinations in philosophy,
c. write an Honors Essay of sufficiently high quality on a topic to be chosen by the candidate in consultation with his/her instructor in PHI 487,
d. complete a 400 -level seminar offered through the College Honors Program, and
e. accumulate at least fifteen credits in honors-designated course work, including PHI 487 and 489 and the 400 -level Honors Program Seminar.

At graduation, the overall honor point average must be at least 3.3. If at any point the student fails to maintain Honors standards, his or her credits will automatically be counted towards the regular major. Students interested in becoming candidates for the Honors Degree in philosophy should consult the Director of Undergraduate Studies in Philosophy as soon as possible.

## Minor in Philosophy

A candidate for a minor in philosophy must complete a minimum of five courses (generally eighteen credits) selected from the philosophy course listings below, including the following courses or selections from course groups (found in the Courses of Instruction section beginning on page 290).
I. History of Philosophy group: PHI 210 (or 541, or 542) or PHI 211 (or 545, or 546).
2. Symbolic Logic group: PHI 185 or 186.
3. Value Theory group or Philosophical Problems group: one course from either group.
4. One course at the 500 level or above from any group.
5. One additional course at the 200 level or above from any group.

Courses taken in compliance with requirement (4) may be used to satisfy any of requirements (1), (2), (3), or (5); however, students wishing to do so must consult with the instructor; the five course minimum must still be met.

Students who are planning to minor in philosophy should consult the Director of Undergraduate Studies in the Philosophy Department.

## COURSES OF INSTRUCTION ${ }^{1}$ (PHI)

## Introductory Courses

101. (PL) Introduction to Philosophical Systems. (Lct: 3; or Let: 3; Dsc: 1). Cr. 3-4
No credit after PHI 103. Introduction to philosophy and the main schools of philosophical thought, through examination of some of the great philosophers of the past. Selected texts of writers such as Plato, Augustine, Aquinas, Descartes, Hume, Kant, Hegel, Nietzsche, James, and Russell will be discussed.
102. (PL) Honors Introduction to Philosophical Systems. Cr. 3-4 Open only to Honors students. See PHI 101.

## 103. (PL) Introduction to Philosophical Problems. Cr. 3-4

No credit after PHI 101. Survey and discussion of some of the enduring and most pressing issues that have occupied philosophers: Does God exist? What is a good person? Do we have free will? Is the mind the same as the brain? What is the universe really like? What do we really know? Course will acquaint students with techniques for discussing such questions and for evaluating proposed answers to them.
104. (PL) Honors Introduction to Philosophical Problems. Cr. 3-4
Open only to Honors students. See PHI 103.

## 105. (CT) Critical Thinking. Cr. 3

Knowledge and skills relevant to the critical evaluation of claims and arguments. Topics will include: the formulation and identification of deductively and inductively warranted conclusions from available evidence; the assessment of the strengths of arguments; the assessment of consistency, inconsistency, implications, and equivalence among statements; the identification of fallacious patterns of inference; and the recognition of explanatory relations among statements.

## 110. Contemporary Moral Issues. Cr. 3 (Max. 9)

Current moral problems confronting individuals and societies. Possible topics: war, love, death, civil disobedience, population and environmental issues, sexuality, feminism, racism, ageism, animal rights. Topics to be announced in Schedule of Classes .

## 111. Ethical Issues in Health Care. Cr. 3

Survey of moral issues that arise in the practice of medicine and in pursuit of medical knowledge: abortion, euthanasia, experimentation on human subjects, informed consent, rights to health care, genetic engineering, the concepts of death, health and disease.
185. Symbolic Logic. (LIN 185). Cr. 4

The logic of propositions; the general logic of predicates and relations; identity and description; a brief introduction to set theory.

[^67]186. Honors Symbolic Logic. (LIN 186). Cr. 4

Open only to Honors students. See PHI 185.

## History of Philosophy

210. (PL) Ancient and Medieval Philosophy. Cr. 3

Introduction to the Western philosophical tradition from its origins in Ancient Greece through the medieval period. Unifying themes and improtant contrasts between the two eras will be stressed. Readings from the pre-Socratics, Plato, Aristotle, Augustine, and Aquinas. (B)
211. (PL) Seventeenth and Eighteenth Century Philosophy. Cr. 3 A survey of the views concerning knowledge and reality of the major European philosophers of the seventeenth and eighteenth centuries. Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, Kant.
212. Nineteenth Century Philosophy. Cr. 3

A survey of the views concerning knowledge, reality and value of the major European philosophers of the nineteenth century. Selected readings from such philosophers as Fichte, Hegel, Marx, Schopenhauer, Kierkegaard, Nietzsche, Bentham, Mill, and Bradley.
213. Twentieth Century Philosophy. Cr. 3

A survey of the major European and American philosophers and philosophical movements of the twentieth century: pragmatism (Peirce, James, Dewey), process philosophy (Whitehead), phenomenology (Husserl), existentialism (Heidegger, Sartre), positivism (Carnap, Ayer), philosophical analysis (Russell, Moore, Austin, Ryle, Wittgenstein).

## 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 classics 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 classics major, or consent of instructor. Selected readings on topics in Aristotle.
544. Continental Rationalism. Cr. 4

Prereq: any philosophy course at the 200 level or above, or consent of instructor. Topics concerning Descartes, Spinoza or Leibniz.
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.
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.

## Theory of Value

## 232. (PL) Introduction to Ethics. Cr. 3-4

Only Honors students may register for four credits. An introduction to some classical and modern views concerning such questions as: What determines the rightness and wrongness of actions? What is the nature of moral reasoning? What constitutes a moral life?
233. Introduction to Social and Political Philosophy. Cr. 3

Introduction to the basic issues of political philosophy, such as the nature of the state, the ways of justifying its power and authority over its citizens; a philosophical analysis of central concepts like those of freedom, justice, and equality. Selected readings from some of the following: Plato, Aristotle, Hobbes, Locke, Rousseau, Mill, Marx, and Rawls.

## 327. Foundations of Law. Cr. 3

Prereq: upper division undergraduate status. No credit after PHI 527. The legal system we live under commands, forbids, punishes, and defines responsibilities and harm. Common-sense morality: what is it, and what is its relation to law? Statutory interpretation: do judges create new law? Punishment: why do we have it, and what rights do the accused have? What is the legal concept of harm and responsibility?
370. (PL) Philosophy of Art. Cr. 3

What are art works? Why are they so moving? What is the nature of the experience they offer? This course introduces the student to some of the schools of thought on these issues. It also attempts to deal with the specific natures of the various artistic media, such as: drama, literature, film, painting, photography, music and opera.
524. Special Topics in Social and Political Philosophy. Cr. 4 (Max. 8)
Prereq: any philosophy course at the 200 level or above or major in political science or consent of instructor. Selected topics and readings from major social and political philosophers. Topics to be announced in Schedule of Classes .

## 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.
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.
530. Twentieth Century Analytic Ethics. Cr. 4

Prereq: any philosophy course at the $\mathbf{2 0 0}$ 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.
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 .

## Philosophical Problems

240. Introduction to the Philosophy of Religion. Cr. 3

Religious beliefs provide subject matter for philosophical study: Are the traditional arguments for the existence of God credible? Does the existence of evil conflict with a belief in God's omnipotence and omnibenevolence? What is the value of religious experience? Discussion of these questions will assist in evaluating a pervasive element within religious experience.
250. Minds and Machines. Cr. 3

It is frequently claimed that machines are capable of intelligent behavior such as creating artworks, teaching, learning, carrying on a conversation, and making decisions. Is there any merit to such claims? What important distinctions ought to be made in connection with the concept of artificial intelligence? How can computers be used
to provide models of cognitive processes? Exploration of philosophical issues related to machines, without presupposing technical knowledge about computers or electronic circuitry.
257. Introduction to the Philosophy of Language. (LIN 257). Cr. 3
A survey of philosophical problems concerning such topics as: the concepts of language and linguistic convention; the nature of meaning, reference, and truth; the relations between language, thought, and the world.
350. (PL) Theory of Knowledge. Cr. 3

The distinction between knowledge and belief is germane to every field of inquiry. What is the difference between knowledge and belief? Do we know anything at all? If so, how? Are we ever in a position of being certain about beliefs pertaining to an objective world? Is our belief in an objective world based on our subjective experiences?

## 355. (PL) Metaphysics. Cr. 3

Survey and examination of some of the enduring questions of metaphysics concerning the nature of reality. Topics include: the nature of physical objects, abstract entities, the concepts of time and change, the relation between mind and body, causation, the nature of metaphysics.

## 360. Space, Time, and the Philosophy of Physics. Cr. 3

Prereq: one course in philosophy or in a physical science or consent of instructor. Survey of some principal problems concerning the concepts of space and time and their relation to physical theories. Topics include: our knowledge of the geometric features of the world, the existence of space and time, time without change, the passage of time, the philosophical foundations and implications of Einstein's Special Theory of Relativity, and the explanation of motion and the General Theory of Relativity. No prior knowledge of modern physics will be presupposed.
(B)
380. Special Topics in Philosophy. Cr. 3 (Max. 6)

Prereq: one course in philosophy or consent of instructor. Special topics to be announced in Schedule of Classes .
523. Philosophy of Science. (SOC 608). Cr. 4

Prereq: PHI 185 or 186 or any course from the Philosphical 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.
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 .

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.

## 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.
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 .
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.
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.
580. Special Topics in Philosophy. Cr. 3-4(Max. 9)

Topics and prerequisites to be announced in Schedule of Classes .

## 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.
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.
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 .

## Special Courses

## 487. Honors Directed Reading. Cr. 4

Prereq: philosophy honors candidate. Research on topic of honors essay and research for comprehensive examinations.
489. Honors Proseminar. Cr. 4

Prereq: PHI 487. Continuation of PHI 487.
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.

## 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, Jhy-Jiun Chang, Juei-Teng Chen, Harry H. Denman, Gerald L. Dunifer, Lawrence D. Favro, David M. Fradkin, Suraj N. Gupta (Distinguished), Walter E. Kauppila, Yeong Wook Kim, Pao-Kuang Kuo, William B. Rolnick, Alvin M. Saperstein, Martin Stearns (Emeritus), Talbert S. Stein, Melbourne G. Stewart, Robert L. Thomas, Lowell E. Wenger

## Associate Professors

William E. Dorenbusch, Paul H. Keyes, Karur R. Padmanabhan, Jogindra M. Wadehra

## Assistant Professors

Matlub Ahmad, Myung Keun Kim, Caroline G. Morgan-Pond

## Instructor

Ching-Kwan Kwan

## Adjunct Professors

Gary L. Eesley, Robert C. Jaklevic, Edward C. Lim, Eleftherios M. Logothetis, Pieter K. Rol, Melvin P. Shaw

Adjunct Associate Professor
John E. Keem

## Degree Programs

Bachelor of Arts—with a major in physics
Bachelor of Science in Physics-with concentrations in General Physics, Applied Physics and Pre-Medical Physics

* Master of Arts—with a major in physics
* Master of Science—with a major in physics
* Doctor of Philosophy—with a major in physics

The Department of Physics and Astronomy offers professional courses for students in science, engineering and pre-medical programs, as well as general courses for those who seek a knowledge of physics and/or astronomy as part of their cultural background. While the Department offers various programs within the Bachelor of Arts and Bachelor of Science curricula, the student is advised that additional possibilities exist. For instance, it is possible to have a dual major in physics and mathematics by completing the requirements for both degrees within the normal course load. Also, it is possible for a physics major to earn a secondary school teaching certificate by electing courses in the College of Education under a combined curriculum.

[^68]Physics Colloquium: The department colloquium is normally held Thursday afternoons. Advanced undergraduates are invited to attend.

## BACHELOR'S DEGREES

Admission Requirements: Admission to this program is contingent upon admission to the College, requirements for which are satisfied by the general undergraduate admission requirements for the University; see page 13 .

DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work, including satisfaction of the College of Liberal Arts Group Requirements (see page 199) and the University General Education Requirements (see page 20), as well as one of the individual program requirements listed below. All course work must be completed in accordance with the regulations of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively.

## Bachelor of Science in Physics

The Bachelor of Science program offers several options. Each option is designed to meet the needs of a particular group of students although each is flexible enough to avoid limiting the student to a particular future program. For example, a student might elect to meet the requirements of the pre-medical physics option and still go on to graduate school in physics even though that is not the primary purpose of the pre-medical option.

## - Basic Requirements for All Options

1. Physics 217,218 and $330 .^{1}$
2. Elementary mathematics sequence-MAT 201, 202, 203, 235.
3. Chemistry 107
4. The Department recommends that the Foreign Language Group Requirement (see page 200) be satisfied by French, German, or Russian for students planning to go on to graduate study.

## - General Physics Option

This option is primarily for students who intend to go on to graduate study in physics. It also satisfies the requirements of industrial and governmental employers who demand a traditional education in physics.

Course requirements consist of the basic requirements above, plus MAT 507, 522 and at least twenty-two additional credits in physics at the 500 level or above, including two laboratory courses and including Physics 620, 660, 680 and 685.

## Suggested Course Sequence

| Freshman Year |  |
| :---: | :---: |
| Fall Semester | Winter Semester |
| Chemistry 107............................ 4 | ' Physics 217 ................................ 5 |
| Mathematics 201 ......................... 4 | Mathematics 202 ........................... 4 |
| ${ }^{2}$ Group Req. Elective......................... 4 | ${ }^{2}$ Group Req. Elective ......................... 4 |
| ${ }^{2}$ English.......................................... 4 | ${ }^{2}$ English ....................................... 4 |
| Total: 16 | Total: 17 |

Sophomore Year

| Physics 218.................................. 5 |  |
| :---: | :---: |
| ${ }^{2}$ Biology Elective ............................ 4 |  |
| Mathematics 203 .......................... 4 |  |
| ${ }^{2}$ Group Req. Elective.......................... 4 | ${ }^{2}$ Group Req. Elective ......................... 4 |
| Total: 17 | Total: 13 |

## Junior Year

| Physics 560................................ 3 | Physics 562................................ 5 |
| :---: | :---: |
| Physics 535............................... 5 | ${ }^{2}$ Foreign Language.......................... 4 |
|  | Mathematics 522 ........................... 4 |
| ${ }^{2}$ Group Req. Elective....................... 4 | ${ }^{2}$ Group Req. Elective .......................... 4 |
| Total: 16 | Total: 17 |

## Senior Year

|  | Physics 660 .................................. 4 |
| :---: | :---: |
| Physics 680.............................. 3 |  |
| Computer Science .......................... 4 |  |
| ${ }^{2}$ Foreign Language ......................... 4 | ${ }^{2}$ Foreign Language........................... 4 |
| Total: 15 | Physics 685 ................................. 2 |
|  | Total: 17 |

## - Applied Physics Option

This option is intended to provide the diverse kinds of training which are required for a variety of applied fields and still provide the essential understanding of the physical foundations of those fields. It combines a thorough training in fundamental physics with sufficient flexibility for the student to study areas such as chemistry, biology, computer science, mathematics, geology or engineering. While many graduates may proceed directly into industrial positions (particularly in engineering fields) many may go on to graduate school in areas such as biophysics, electrical engineering, etc.

Course Requirements consist of the basic requirements above plus two semesters of Computer Science and at least eighteen credits in physics at the 500 level or above including Physics 520, 560, 562 and 685. MAT 507 is recommended.

## Suggested Course Sequence

| Fall Semester Freshman Year |  |
| :---: | :---: |
|  |  |
| Chemistry 107............................. 4 | ${ }^{1}$ Physics 217 .................................. 5 |
|  | Mathematics 202 ............................ 4 |
| ${ }^{2}$ Group Req. Elective....................... 4 | ${ }^{2}$ Group Req. Elective ........................ 4 |
| ${ }^{2}$ English........................................ 4 | ${ }^{2}$ English ......................................... 4 |
| Total: 16 | Total: 17 |

${ }^{1}$ Physics 213 and 214 may be substituted for Physics 217 and 218 with the permission of the Departmental Undergraduate Adviser.
${ }^{2}$ Students are responsible for satisfying College Group Requirements.

Sophomore Year

| Physics 218.................................. 5 | Physics 330................................... 3 |
| :---: | :---: |
| Biology Elective ............................. 4 | Physics 520................................ 3 |
|  | Mathematics 235 ........................... 3 |
| ${ }^{2}$ Group Req. Elective......................... 4 | ${ }^{2}$ Group Req. Elective ......................... 4 |
| Total: 17 | Total: 13 |

## Junior Year

| Physics 560................................. 3 | Physics 562.................................. 5 |
| :---: | :---: |
| Chemistry 224............................. 4 |  |
|  |  |
| Group Req. Elective........................ 4 | Foreign Language.......................... 4 |
| Total: 15 | Total: 15 |

## Junior Year

|  |  |
| :---: | :---: |
| Technical Elective .......................... 4 | Technical Elective............................ 4 |
|  | ${ }^{2}$ Foreign Language.......................... 4 |
| Group Req. Elective.......................... 4 | ${ }^{2}$ Group Req. Elective ........................ 4 |
| Total: 15 | Total: 17 |

## Senior Year

| Physics Elective.......................... 3-5 | Physics Elective............................-3 |
| :---: | :---: |
| Biology Elective ........................... 4 | Group Req. Elective ........................ 4 |
| Group Req. Elective........................ 4 | Group Req. Elective ........................ 4 |
| Foreign Language ......................... 4 | Foreign Language.......................... 4 |
| Total: 15-17 | Total: 15-1 |

## Senior Year



## - Pre-Medical Physics Option

This option is specifically designed for students who wish to go on to medical school. It provides a background enabling the physician to use the full potential of modern medical instrumentation. In addition to required courous in the fundamentals of physics and electronics, the student may elect to take courses which will directly benefit his/her intended medical specialty. A prospective opthalmologist can study optics; an orthopedic surgeon, mechanics; a radiologist, atomic physics and radiation.

Course requirements consist of the basic requirements above plus Biology 101, 102, 507 and one additional course in biology, Chemistry 108, 224, 226, 227 (which fulfill current medical school requirements), and Physics 520,560,562 and six additional credits in physics at the 500 -level or above. Students should consult the University Advising Office for changes in pre-medical requirements, outlined in the following suggested curriculum.

## Suggested Course Sequence

| Freshman Year |  |
| :---: | :---: |
| Fall Semester | Winter Semester |
| Chemistry 107. | Chemistry $108 . . . .{ }_{-}$....................... 5 |
| Mathematics 201......................... 4 | Mathematics 202 .......................... 4 |
| 1 Group Req. Elective......................... 4 |  |
| ${ }^{2}$ English......................................... 4 | ${ }^{2}$ English ......................................... 4 |
| Total: 16 | Total: 1 |

## Sophomore Year

|  | Physics 330 ............................... 3 |
| :---: | :---: |
| ${ }^{2}$ Group Req. Elective....................... 4 |  |
| Biology 101............................... 4 | Biology 102 ................................ 4 |
|  | Mathematics 235 .......................... 3 |
| Total: 17 | Total: 13 |

## Bachelor of Arts <br> With a Major in Physics

This program is intended to meet the needs of several kinds of students:
(a) students wishing to major in physics who have transferred to Wayne State University after one or two years at a community college, but whose background in physics and mathematics does not complement the content, level, or scheduling of remaining course requirements well enough to permit completion of the Bachelor of Science degree curriculum in a reasonabie time;
(b) students who wish to pursue a general course of education in the sciences with physics as an area of concentration. Those who undertake such a program are sometimes interested in the study of physics as an integrated part of a broad educational background;
(c) students who decide relatively late in their college careers (for example, during the sophomore year) that they wish to major in physics.

It should be emphasized that completion of the Bachelor of Arts program instead of the Bachelor of Science program does not preclude later graduate work in physics. In most cases, it will mean that the student will spend part or all of his/her first year in graduate school making up deficiencies in his or her physics and mathematics background. Generally speaking, such deficiencies may be determined by consulting the Suggested Course Sequence of the Bachelor of Science degree in physics, above.

## DEGREE REQUIREMENTS:

1. Physics $217,218,330$. A student may present credits in Physics 213, 214 or equivalent, in lieu of Physics 217 and 218, with the consent of the Departmental Undergraduate Adviser.
2. At least fifteen additional credits in physics at the 500 or 600 level including 520 and 560.
3. (a) Elementary Mathematics Sequence: MAT 201, 202, 203, 235.
(b) Intermediate Mathernatics Course: MAT 507.
4. Chemistry 107
5. The Department recommends that the Foreign Language Group Requirement (see page 200) be satisfied with French, German, or Russian.

Advanced Placement: Students should seek to obtain advanced placement in English and foreign languages. Information on advanced placement examinations may be obtained from the University Advising Office.

[^69]
## 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 during days, evenings or weekends. The instructors will be available for consultation either by telephone or in person during normal business hours and also by appointment. Examination times are arranged with the instructor.

The videotape lectures make it possible for the working student to complete the Bachelor of Arts or Bachelor of Science in Physics degrees with a minimum of conflict with his/her work schedule.

## Minor in Physics

The Department of Physics and Astronomy offers a minor in physics to qualified students from other departments. The requirement for a minor consists of Physics 217 and 218 (or Physics 213 and 214) plus Physics 330 and at least two other physics courses at the 300 level or above. Students should consult the Departmental Undergraduate Adviser for approval of the minor prior to undertaking the program.

## Courses for Non-Science Majors

The Department of Physics and Astronomy offers several courses designed primarily for non-science majors for which only minimal high school mathematics preparation is needed. The courses are AST 201, PHY 101, 102, 104, 310 and 502. The laboratories connected with AST 201, PHY 101, PHY 102, and PHY 310 satisfy the natural science laboratory group requirements.

## COURSES OF INSTRUCTION ${ }^{1}$

Astronomy (AST)

## 201. (PS) Descriptive Astronomy. (Lct: 4; Lab: 2). Cr. 4-5

Optional lab includes 4 late evening viewing sessions. Material fee as indicated in Schedule of Classes. Introduction to the concepts and methods of modern astronomy; the solar system, stars, galaxies, and cosmology; including recent discoveries about the planets, moon, sun, pulsars, quasars, and black holes. Only a minimal knowledge of high school mathematics is needed.
211. Descriptive Astronomy Laboratory. (Lab: 2). Cr. 1

Prereq: AST 201 for 4 credits, or 501 or PHY 501 or written consent of instructor. No credit after AST 201 if taken for five credits. Material fee as indicated in Schedule of Classes. Laboratory for AST 201. (T)
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)

[^70]
## Physics (PHY)

All courses with a laboratory have a non-refundable materials fee and
are so indicated in the Schedule of Classes.

## 100. Conceptual Physics Laboratory. Cr. 1

Prereq: PHY 102 if taken for three credits, or written consent of instructor. No credit after PHY 102 if taken for four credits. Material fee as indicated in Schedule of Classes. Laboratory for PHY 102.
(F,W)
101. (PS) Music, Color, and Perception: The Physics. (Let: 3; or Let: 3; Lab: 2). Cr. 3-4
Prereq: satisfaction of University mathematics proficiency requirement recommended. Material fee as indicated in Schedule of Classes. Physics of sound, light, and color; history and creation of models for physical phenomena, particularly those associated with light, the physics of waves illustrated with sound and light, and psychophysical phenomena associated with sight and hearing. Associated laboratory is optional but highly recommended.
102. (PS) Conceptual Physics: The Basic Science. Cr. 3-4

Material fee as indicated in Schedule of Classes. Physical concepts and practical applications to everyday life of the basic principles of motion, forces, energy, matter, heat, sound, electricity, magnetism, and light. Lectures, demonstrations and optional laboratory; laboratory is strongly recommended.
(F,W)
104. (PS) Einstein, Relativity and Quanta: A Conceptual Introduction. Cr. 3
Einstein and the origin of the special theory of relativity; the curvature of space; the uncertainty principle; the quantum theory; the interaction of observer and measurement; fission and fusion; the influence of modern physical theories on society and philosophy.
202. Nuclear War. (HIS 251) (P S 244). Cr. 4

May not be used to fulfill natural science group requirement. Nuclear war as a present-day possibility. How nuclear war may differ from previous human conflict. Origin and growth of the nuclear arms race and its likely outcome. Principles of the human and physical sciences applied to predict the future of the arms race and to formulate appropriate responses to the implications of nuclear war.

## 213. (PS) General Physics. Cr. 4

Prereq: high school algebra and trigonometry. No credit after PHY 217. Material fee as indicated in Schedule of Classes. For general Liberal Arts students and for students preparing for medicine, dentistry, pharmacy and allied health sciences. Mechanics, thermal physics, wave motions, and optics.
214. General Physics. Cr. 4

Prereq: PHY 213. No credit after PHY 218. Material fee as indicated in Schedule of Classes. Continuation of PHY 213. Electricity, magnetism and introduction to modern physics.
216. General Physics Laboratory. Cr. 1

Prereq: PHY 213 for 3 credits. Open only to medical technology students. Material fee as indicated in Schedule of Classes.
217. (PS) General Physics. Cr. 4-5

Prereq: MAT 201; coreq: MAT 202. Only engineering students may elect for four credits; others must elect five credits. No credit after PHY 213 except with consent of department. Material fee as indicated in Schedule of Classes. For students specializing in physics, biology,
chemistry, mathematics or engineering. Statics, kinematics, dynamics, energy and linear momentum, rotational kinematics and dynamics, angular momentum, simple harmonic motion, optics, continuum mechanics, thermodynamics.

## 218. General Physics. Cr. 4-5

Prereq: PHY 217, MAT 202. Only engineering students may elect for four credits; others must elect five credits. No credit after PHY 214. Material fee as indicated in Schedule of Classes. Electrostatics, currents and circuit elements, magnetic fields, magnetic induction, A.C. circuits, electromagnetic waves, interference of waves, quantum phenomena, atoms, molecules, spectra, nuclear physics.

## 221. General Physics Laboratory. Cr. 1-2 (Max. 2)

Prereq: PHY 217 or 218 if taken for four credits or written consent of instructor. Open only to engineering students. No credit after PHY 217 or PHY 218 if taken for five credits. Register for one credit per section. Material fee as indicated in Schedule of Classes. Laboratory for PHY 217 and PHY 218.
310. (PS) The Sounds of Music. Cr. 4

Prereq: sophomore standing. Material fee as indicated in Schedule of Classes. For music majors and other students interested in the physical foundations of the production, perception, and reproduction of musical sounds. Makes only limited use of simple mathematics. Includes topics such as wave properties, loudness levels and the human ear, hearing loss, tone quality, frequency and pitch, musical intervals and tuning, room acoustics, the production of sound by various musical instruments, and electronic reproduction of music.
(Y:F)

## 330. Introductory Modern Physics. Cr. 3

Prereq: PHY 218 or consent of instructor. Material fee as indicated in Schedule of Classes. For physics, chemistry, engineering, mathematics majors and other interested students. Introduction to relativity, quantum phenomena, atomic structure, quantum mechanics, condensed matter physics, quantum optics, nuclear physics, elementary particles, and anti-particles.
(Y:W)

## 390. Directed Study. Cr. 1-3(Max. 5)

Prereq: 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.

## 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 cosomology.
(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.

## 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.
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.
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, dielectrics, magnetic materials, capacitors, inductors, D.C. and A.C. circuits, complex representation of current elements, rectifiers and filters, p-n junctions and an introduction to transistors.

## 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. (W)

## 590. Directed Study. Cr. 1-3(Max. 6)

Prereq: junior standing and written consent of adviser and instructor. Primarily for students who wish to continue in a field beyond material covered in regular courses, or who wish to study material not covered in regular courses, including certain research participation.
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 is 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. (I)

## 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 electriicity 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.

## 604. Principles of Physics for High School Teachers. Cr. 4

Prereq: PHY 213 or 217 or equiv., or consent of instructor. Open only to high school teachers. Understanding nature in terms of energy and the fundamental forces, including: mechanics, vibrations and
waves, heat and thermodynamics, electromagnetism, optics, modern physics and astronomy.
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.
607. Modern Physics for Secondary School Educators. Cr. 4

Prereq: introductory mechanics, electricity and magnetism.
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.
635. Applied Modern Optics. Cr. 3

Prereq: PHY 535. Coherent radiation, laser physics and optical devices, optical techniques in experimental science, topics in modern optics.
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.
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.
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.
681. Modern Physics. Cr. 3

Prereq: PHY 680. Material fee as indicated in Schedule of Classes. Continuation of PHY 680.
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.
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.
691. Special Topics. Cr. 1-4(Max. 4)

Prereq: consent of instructor. Offered for S and U grades only. Topics and prerequisites for each section to be announced in Schedule of Classes. More than one section may be elected in a semester.

## POLITICAL SCIENCE

Office: 856 Mackenzie Hall

Chairperson: Charles D. Elder

## Professors

Philip R. Abbott, David W. Adamany, Pi-chao Chen, Edward L. Cushman (Emeritus), Rondal G. Downing, Charles D. Elder, Otto Feinstein, Theodore B. Fleming, Jr. (Emeritus), Louis L. Friedland (Emeritus), Wesley L. Gould (Emeritus), Donald S. Hecock (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, Ray E. Johnston, Robert W. Miller, Alfred M. Pelham (Emeritus), Wilbur C. Rich

## Assistant Professors

Susan P. Fino, James A. Jarvis, Mary H. Munro, John M. Strate

## Degree Programs

## Bachelor of Arts-with a major in political science

Bachelor of Public Affairs

* 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 ScienceThe study of political science is aimed at understanding the nature and problems of government and the role of politics in contemporary society. 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. Political science contributes to the goals of general education by promoting civic literacy and cultivating in students an awareness of the opportunities and obligations of citizenship at local, state, and national levels. It also provides opportunities for study and training directed toward specific career objectives.

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

* For specific requirements consult the Wayne State University Graduate
School Bulletin.
college and university levels.

4. Positions in the diplomatic service and in 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 industrial relations, legislative liaison and public relations.

## Bachelor of Arts

Political science majors are afforded the opportunity to develop programs of study that complement their particular interests and career goals. The major may be used to structure a broad general program or a highly concentrated and specialized one. The following requirements pertain to all B.A. majors.

Admission Requirements for the College are satisfied by general undergraduate admission to the University; see page 13. To enter the Bachelor of Arts degree program in political science, students must have an honor point average of at least 2.0 and must declare their major in accordance with the rules of the College (see page 200).

Transfer Credits: Students wishing to apply transfer credits toward the major should consult the political science undergraduate adviser regarding departmental policies and restrictions on the use of these credits.

DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work including satisfaction of the College of Liberal Arts Group Requirements (see page 199) and the University General Education Requirements (see page 20), as well as the major requirements listed below. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively.

Major Requirements: A political science major must satisfactorily complete at least thirty-two credits of course work in the department. For co-majors, a minimum of twenty-four credits is required. In both cases, this course work must include:

1. One introductory course in American government (PS 101 or 103).
2. At least one course from the following: P S 251, 271, 281, 282.
3. At least four courses at the 300 level or higher.
4. A distribution of courses in political science that includes course work in any two of the following areas: American Government/Public Law (courses numbered with a second digit of 0 or 1), Urban Politics (second digit of 2), Public Policy/Public Administration (second digit of 3 or 4), Political Philosophy (second digit of 5), and International Relations/Comparative Politics (second digit of 7 or 8). P S 101, 103, 251, 271,281, and 282 do not count toward fulfilling this requirement.

## - Areas of Concentration

In developing their specific programs of study, students should consult with the political science undergraduate adviser. They may pursue a general program or choose to concentrate in a particular area or
subfield. The following are areas in which a student may choose to concentrate. Other areas of concentration and more specialized programs may be developed in consultation with the undergraduate adviser.

American Government and Politics. Public opinion, electoral politics, and participation in the political process; the role of political parties and interest groups; the workings of congress, the Presidency, and other governmental institutions. Courses relevant to this area of concentration include (but are not limited to): P S 207, 301, 302, 304, $305,306,343$, and 506.

Public Law/Legal Studies. Judicial interpretation of the Constitution; civil liberties and constitutional rights; law enforcement and the operations of the judicial system. Relevant courses include: $\mathbf{P}$ S 219, 310, 311, 511, 512, 612, and 635.

Urban Politics and Policy. Governing cities in a federal system; economic conditions and urban problems; local policy-making and the constraints under which policy is made. Relevant courses include: P S $200,207,224,311$, and 522.

Public Administration. The nature and functions of public agencies; techniques of public management; public bureaucracy in its social setting. Relevant courses include: P S 231, 291, 333, 343, 522, 632, 634 , and 635.

Public Policy. How policy is formulated, decided, implemented, and evaluated; moral and political standards for making policy. Relevant courses include: P S 241, 242, 291, 333, 343, 446, 506, 522, 544, 552, 581,632 , and 643.

Political Philosophy and Ethics. The justification and application of ethical standards to politics; history and analysis of authority and rebellion, individualism and community, justice and equality; modern ideologies such as communism, socialism, liberalism, and conservatism. Relevant courses include: P S 242, 251, 351, 352, 504, 522,551 , and 557.

Quantitative Political Analysis. Methods of analysis used to assess alternatives and evaluate the impact of government policy; methods of empirical political research including data collection, statistical 'description and inference, and the use of computers to organize and interpret data. Relevant courses include: P S 446, 563, 632, and 664.

Comparative Politics. The study of government and politics of western, non-western, and third world countries in their historical, cultural, and economic settings; problems of comparison across cultural and national boundaries. Relevant courses include: P S 271, $371,372,475,476,572,577$, and 637.

International Relations. Conflict and cooperation among nations; causes of war and the pursuit of peace; international governmental and non-governmental organizations, regional organizations, and multi-national corporations; north-south relations and issues of development, imperialism, and dependency; American foreign policy and issues of disarmament, deterrence, and intervention. Relevant courses include: P S 281, 282, 381, 581, 583, and 584.

Pre-Law Curriculum: Political science provides a useful major for students who anticipate applying to law school. For students choosing the Bachelor of Arts program, a Public Law/Legal Studies concentration including P S 310, 311, 511, and 512 is recommended along with courses in American Government and public policy (numbered with second digits of 0 and 4 , respectively). An alternative for students anticipating careers in the legal profession is the Bachelor of Public Affairs and its judicial administration concentration, described below. Specific programs of study under either degree option should be developed in consultation with the department's pre-law adviser.

## Bachelor of Public Affairs

The Bachelor of Public Affairs (B.P.A.) degree program prepares qualified students for professional and technical careers in the public service or for advanced study in public affairs and administration, the social sciences and related disciplines.

The program is a structured professional curriculum that builds on the foundation of a general liberal arts education. The curriculum incorporates the fundamentals of social science theory and applications of that theory to public management and policy analysis. The B.P.A. provides students with skills needed for working in city, county, state and national government, in other public and non-profit agencies, and in positions in private enterprise that deal with governmental relations. Internships afford students an opportunity to apply what they have learned under conditions that approximate circumstances in public service careers. Students interested in this program should consult the political science undergraduate adviser as early as possible in their college careers. Ideally, students would begin B.P.A. course work in their sophomore year and should declare their major as early as possible.

Admission Requirements for the College are satisfied by general undergraduate admission to the University; see page 13. To declare the B.P.A. as a major, a student must have an honor point average of 2.25 and follow the procedures set forth by the College of Liberal Arts for declaring a major (see page 200).

Transfer Credits: Students wishing to apply transfer credits toward the B.P.A. major should consult the political science undergraduate adviser regarding departmental policies and restrictions on the use of these credits.

DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work including satisfaction of the College of Liberal Arts Group Requirements (see page 199) excepting the foreign language requirement, and the University General Education Requirements (see page 20), as well as the requirements listed below. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively.

Major Requirements: A Bachelor of Public Affairs major must complete twenty-five to twenty-seven credits in prescribed foundation course work, twenty-four credits in B.P.A. core and elective courses in political science, and thirteen to sixteen credits including a cognate course in an approved area of concentration.

Basic Knowledge and Skills Requirements: Students must satisfy the following course requirements and should do so primarily in their first two years of study. Some of these courses may also be used in partial fulfillment of University General Education Requirements.

English ( 7 credits): Two courses in composition (English 102 and 301). Students with outstanding performance in 102 may, upon approval by the political science undergraduate adviser, substitute for the second composition course any English course involving a substantial amount of essay or report writing.

Mathematics ( 4 credits): MAT 150 or 180 required.
Computer Science ( $3-4$ credits): CSC 100 , 101, or 102 required; CSC 101 recommended.

Economics (8 credits): Two introductory principles courses (Economics 101 and 102).

American Government (3-4 credits): Political Science 101 or 103.
B.P.A. Core Requirements: Candidates for the Bachelor of Public Affairs degree will take one sequence of courses in the fundamentals of policy analysis and public management and another sequence in. research methods and techniques of data analysis.

## 1. Fundamentals Sequence credits

P S 241 - Introduction to Public Policy ..... 4
P S 242 - Ethics and Politics of Public Policy ..... 4
2. Techniques and Methods SequencePS 563 -Statistics and Data Analysis I 4

## The statistics course is prerequisite to:

PS 446 - Techniques of Policy Analysis .4

Political Science Electives: Students must take two additional political science courses ( 8 credits) selected from courses that may not be used to satisfy the B.P.A. Area of Concentration requirements described below.

## - Areas of Concentration

In addition to the core and elective course work, students must select an area of concentration and should consult with the political science undergraduate adviser for specific information. Areas of Concentration include:

Public Management: The following are required for students choosing the Public Management concentration:

Core Requirements (10-12 credits): three courses selected from P S 231, $333,343,522,603,612$, and 632 , dealing with basic public management processes, problems, and techniques.

Cognate Course ( $3-4$ credits): one course relating to organizational and managerial behavior, management techniques and financial management, chosen from the disciplines of accounting, economics, business management, psychology and sociology.

Public Policy Analysis: The following are required for students in the Public Policy Analysis concentration:

Core Requirements (10-12 credits): three courses selected from among PS 231, 303, 311, 333, 343, 506, 522, 544, 643, 664; courses dealing with policy development, implementation, and evaluation.

Cognate Courses (3-4 credits): one course selected from social science offerings in the following fields: urban health and welfare policy; transportation and housing policy; environmental and population policy; labor policy; economic, business and consumer affairs regulation; and criminal justice.

Urban Policy and Management: The following are required for students choosing the Urban Policy and Management concentration:

Core Requirements ( 12 credits): Three courses (P S 224, 231, and 522) dealing with urban political systems, urban policy, and urban management.

Cognate Course ( $3-4$ credits): One course selected from social science offerings in disciplines such as urban planning, sociology, economics, geography, criminal justice, and history, relating to the problems and processes of urban policymaking and management.

Judicial Administration: The following are required for students in the Judicial Administration concentration:
Core Requirements (10-12 credits): Three courses selected from P S $231,310,311,612$, and 635 ; dealing with local justice, American legal
systems and processes, and the politics and administration of court systems.

Cognate Course ( $3-4$ credits): One course selected from social science offerings related to organizational and managerial behavior or management techniques and financial management chosen from the disciplines of accounting, economics, business management, psychology, or sociology.

Other Concentrations: With approval of the undergraduate adviser, an area of concentration may be specially designed consisting of courses related to the student's particular educational and career objectives. A plan of study for such concentrations must be filed and approved before the student registers for course work in the junior year.

## Honors Programs

Bachelor of Arts and Bachelor of Public Affairs majors with strong academic records are encouraged to pursue departmental honors. To be eligible to enter the honors program, a major must have a cumulative honor point average of 3.3. To graduate with honors, students must:

1. Maintain a 3.3 honor point average.
2. Complete P S 492-Senior Honors Seminar.
3. Under the direction of one or more members of the department, complete a senior honors paper (P S 495).
4. Complete all requirements for the Bachelor of Arts or Bachelor of Public Affairs degree.
5. Complete one 400 -level Honors seminar offered through the Liberal Arts Honors Program (consult the Liberal Arts section of the University Schedule of Classes under 'Honors Program').
6. Accumulate at least fifteen credits in honors-designated course work, including P S 492, P S 495, and the Honors Program seminar. These honors credits can be obtained from any department within the College, including Political Science. For information on additional honors-designated course work, consult the undergraduate adviser or the Director of the Liberal Arts Honors Program (577-3030).

Students interested in participating in the program should contact the department's undergraduate adviser no later than the second semester of their junior year.

## Minors in Political Science

Students majoring in other fields may obtain a minor in political science by completing a minimum of twenty credits in course work. Information on combinations of courses which emphasize particular subfields of political science (public administration, urban politics, public policy, international affairs, etc.) is presented in the listing of Bachelor of Arts concentrations (see above). For information on courses of particular relevance to such majors as economics, journalism, history, sociology, psychology, philosophy, criminal justice, or urban planning, students are encouraged to consult the department's undergraduate adviser. A suitable sequence for pre-law students can be provided by either the undergraduate adviser or the pre-law adviser.

## Internships

While not required, internships in government or public agencies provide valuable work-educational experience that enables students to relate knowledge acquired in the classroom to the world-at-large. They also provide practical training that enhances future job prospects. Academic credit may be earned for an internship through enrollment in

P S 291, Political Science Internship, a course that helps to assure the educational relevance of the internship by requiring interns to prepare seminar papers and reports based on their experiences. Interested students should consult the department's undergraduate adviser.

## Exchange Program with <br> The University of Windsor

Through an exchange program with the University of Windsor in Windsor, Ontario, students may take political science classes at the University of Windsor for credit toward their degrees; enrollment for this political science credit is made at Wayne State University. The arrangement between the universities serves to enhance the range of course offerings available to students, as well as providing opportunities for cultural enrichment. Information on courses offered at Windsor is available from the department prior to registration each semester. Students should consult the department's undergraduate adviser or exchange program coordinator for further details.

## Awards and Honorary Societies

The Tudor Award is given annually for the best paper or essay written by an undergraduate student in a political science course.

The Sarasohn Award is given annually to the outstanding graduating senior majoring in political science.

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 INSTRUCTION ${ }^{1}$ (P S)

## 100. (SS) Introduction to Political Science. Cr. 3

Introduction to the scope and method of political science. Overview of politics, political systems, nature and role of political institutions. Empirical political theory; practice in conducting political research.
101. (AI) American Government. Cr. 4

No credit after P S 103. Politics and functions of American governmental institutions. Policy processes and the role of citizens in the political process.
103. (AI) The American Governmental System. Cr. 3

No credit after P S 101. Structure and functions of the American political system. Governmental institutions and processes.
200. (U S 200) (SS) Introduction to Urban Studies. Cr. 4

Prereq: sophomore standing. Urban phenomena, past and present; quality and nature of urban life; major concerns of urban areas; perspectives and techniques of various urban-related disciplines.
(Y)
201. Current Issues in American Politics. Cr. 2

Not for major credit. American political and public policy issues of current concern.

See page 433 for interpretation of numbering system, signs and
abbreviations
202. Current Issues in American Foreign Policy. Cr. 2

Not for major credit. Crucial issues in current foreign policy.
207. State and Local Government. Cr. 4

Overview and examination of the structure and processes of American state and local governments with a stress upon intergovernmental relations.
219. Issues in the Constitution. Cr. 4

How recurring constitutional issues effect politics today. Topics include: the free press and national security; searches, seizures, and the exclusionary rule; presidential elections; affirmative action; the insanity defense.
224. (SS) Introduction to Urban Politics and Policy. Cr. 4

Influences on politics and problems of cities, forms of local political involvement, role of local public officials, impact of state and federal policies. Overview of current issues and problems in specific policy areas.
(Y)
231. Introduction to Public Administration. Cr. 4

Prereq: P S 101 or 103. Governmental and administrative structures and organizations. Concepts and techniques of public management. Impact of public bureaucracies on modern society.
241. Introduction to Public Policy. Cr. 4

Prereq: P S 101 or 103. Public policy-making institutions and processes. Emphasis on theory and practice of policy formation, implementation and evaluation. Various models of political decision making.
242. Ethics and Politics of Public Policy. Cr. 4

Moral and political standards for policy-making, relation of major political and social theorists to policy issues such as economic inequality, racial and sexual discrimination, the enforcement of morals, and violence and social change.
244. (PHY 202) Nuclear War. (HIS 251). Cr. 4

Prereq: P S 101 or 103. Nuclear war as a present-day possibility. How nuclear war may differ from previous human conflict. Origin and growth of the nuclear arms race and its likely outcome. Principles of the human and physical sciences applied to predict the future of the arms race and to formulate appropriate responses to the implications of nuclear war.
251. Introduction to Political Ideologies. Cr. 4

Comparison of ideologies, political institutions, and economic systems. Democracy and authoritarianism, capitalism, socialism and communism contrasted.
270. Introduction to Canadian Studies. (HIS 270) (GEG 270) (ENG 267). Cr. 3
Survey of Canada in its cultural, literary, historical, geographical and political aspects; key concepts and social patterns that define the Canadian experience.
271. (FC) Introduction to Comparative Politics. Cr. 4

Comparison of the political cultures, politics, and political institutions of Eastern, Western, and Southern European political systems. Similarities and differences in public policies; European influence; parallels in developing nations.
275. (FRE 275) Introduction to Quebec Studies. (HIS 275). Cr. 3 Survey of the French-speaking Province of Quebec in its cultural, literary, historical, geographical, and political aspects; key concepts and cultural patterns defining the Quebecois identity. Team taught in English.

281, World Politics. Cr. 4
Role of power, methods of resolving international conflict, economic relations between industrialized and Third World countries,
multinational corporations, terrorists, and other non-state actors.
282. (PCS 200) Introduction to Peace and Conflict Studies. (HIS 250). Cr. 3

Required for the peace and conflict studies co-major. A variety of approaches to the origins, processes and resolution or management of conflict in all human systems, from the individual to the nation-state.
(Y)
291. Political Science Internship. (U S 291). 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 and arranged conferences with faculty supervisor.

## 301. Public Opinion and Political Behavior. Cr. 4

Prereq: P S 101 or 103 or consent of instructor. Factors that shape public opinion; patterns of political participation and electoral politics. Impact of public opinion and popular participation on the political system.

## (Y)

302. Political Parties and Elections. Cr. 4

Prereq: P S 101 or 103. Development, structure, functions and operations of American political parties; their electoral and governmental roles; comparison with other systems; possible reforms.
303. Power and Pressure Groups. Cr. 4

Prereq: P S 101 or 103. Structure, techniques and internal politics of interest groups, their roles in policy-making and relationship with other groups such as political parties, legislatures and administrative agencies.
304. The Legislative Process. Cr. 4

Prereq: P S 101 or 103. Function, structure, procedures and politics of American legislative bodies with special attention to Congress. Relationships with other political institutions, especially the executive branch, and comparisons with foreign legislative institutions.

## 305. Politics of the American Presidency. Cr. 4

Prereq: P S 101 or 103. Constitutional, historical, and political bases of the presidency. Influence of courts, Congress, interest groups, the news media, and personality on the office.
306. State Government and Politics. Cr. 4

A comparison of states in the United States in terms of their governmental structures, functions and response to changes in national and local relationships.
310. American Legal Systems and Processes. Cr. 4

Analysis of the institutional structure, processes and policy-making of the American judicial system, including the recruitment of lawyers and judges, the influence of legal rules on policy-making, and selected areas of judicial policy-making. Emphasis on federal and state appellate courts.

## 311. Politics and Local Justice. Cr. 4

Aspects of the local judicial process and interaction with political structures: judical selection; operation of local courts in relationship with elected officials and pressure groups; discretion and bias in judicial process.

## 317. The Living Constitution. Cr. 4

Investigation of contemporary federal constitutional debate. Examination of a case currently pending before the U.S. Supreme Court; legal underpinning for and policy implications of the different possible outcomes.

## 333. The Politics of Government Budgeting. Cr. 4

Prereq: P S 231. The process of budget development; political factors affecting budget decisions, and the use of the budgeting process as a device for making policy choices.

## 343. Bureaucracy and Public Policy. Cr. 4

Prereq: P S 101 or 103. Theory and development of modern governmental bureaucracy. Bureaucratic politics and its significance for decision making and program implementation. Normative aspects of bureaucracy, including accountability to the public and the role of bureaucrats in helping to define rational, efficient policies.
351. (PL) Law, Authority and Rebellion. Cr. 4

Analysis of major theories of law, authority, freedom, and political obligation; justifications of disobedience, resistance and revolution.
352. (PL) Justice. Cr. 4

Analysis of major theories of justice; social, economic and political justice.
353. (HS) Community-Building in the History of Western Political Thought. Cr. 4
Conceptions of community in the history of Western political thought; historical origins and impact of these theories.
371. Major European Democratic Systems: Great Britain and German Federal Republic. Cr. 4
Government and politics of Great Britain and German Federal Republic. Political, social, economic, and cultural foundations of the systems; the structure and functions of institutions and political processes.
372. Major European Democratic Systems: France, Italy and Spain. Cr. 4
Government and politics of Latin European Democracies: France, Italy and Spain. Political, social, economic and cultural foundations of the systems; the structure and function of institutions and political processes.

## 375. Government and Politics of Canada. Cr. 4

Functioning and role of Canadian political institutions: cabinet government, Parliament, bureaucracy, the Canadian federal system, interest groups, political parties, the Canadian political economy. Comparisons between key Canadian institutions and their U.S. counterparts.
381. Foreign Policies of Major Powers. Cr. 4(Max. 8) Major issues and trends in the foreign policies of the U.S.S.R., China, Japan, and the European economic community.
446. Techniques of Policy Analysis. Cr. 4

Prereq: P S 563 or introductory statistics course. Student computer account required. Introduction to several major techniques used by policy analysts to measure and evaluate the effectiveness, efficiency, and equity of public policies and programs. Approaches and methodologies considered will include systems analysis, benefit-cost analysis, and simulation.
475. Government and Politics of the Soviet Union. Cr. 4

Social, economic and political-administrative institutions of the Soviet Union. Soviet Union in world affairs.
476. Government and Politics of Eastern Europe. Cr. 4 Process of Soviet domination, impact of polycentrism, political institutions and processes of representative East European countries.
478. Contemporary African Politics. Cr. 4

Nature of African politics; impact of African politics on international relations.
483. International Law. Cr. 4

Relation between international law and politics, historical survey of doctrines of law, consensus and disagreement on legal principles.
490. Directed Study. Cr. 1-4

Prereq: consent of chairperson and undergraduate adviser.

## 492. Senior Honors Seminar. Cr. 4

Prereq: admission to political science honors program, senior standing; others must have minimum 3.3 h.p.a. and written consent of undergraduate adviser. Bibliographic and data resources for political science research. Examples of contemporary political science research including presentations of ongoing work by departmental faculty. Development and defense of proposal for senior honors paper and completion of preliminary literature review and annotated bibliography.

## 495. Senior Honors Paper. Cr. 3

Prereq: admission to political science honors program; P S 492. Completion of an extended examination of a topic or research question in political science, under the direction of one or more members of the departmental faculty.
(T)

## 503. Black Politics. Cr. 4

Nature and texture of black politics; various perspectives of politics by blacks; the impact of blacks on American politics.
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.
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.

## 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.

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.

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.
552. Politics and the Family. Cr. 4

Prereq: P S 101. The family in political thought, Plato to Marx; implications for public policy with emphasis on American context.

## 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.
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.
572. China, Japan, and the Far East. Cr. 4

Introductory survey of postwar political and economic development of East Asia: China, Japan, South Korea, Taiwan, Hong Kong, Singapore.
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.
581. American Foreign Policy and Administration. Cr. 4

Shaping and administering United States foreign policy; influences of
Congress and interest groups on the White House; secrecy; and the foreign service.
(B)
583. International Conflict and Its Resolution. Cr. 4

Types of international conflict and such methods of resolution as negotiation, mediation and other third-party procedures.
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.
589. (PCS 500) Dispute Resolution. (CRJ 594). Cr. 3

Overview of the processes and sectors in the field of dispute resolution including negotiation, mediation, arbitration, and conciliation.
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

## 602. Intergovernmental Relations and American Federalism.

 Cr. 3Legal, fiscal, political and administrative relationships among participants in American federal system. Current issues and public policies which affect or are affected by intergovernmental relationships.
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.
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, queueing theory, and other methods designed to improve the quality of organizational performance with special attention paid to their usefulness in solving public management problems.
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.
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.
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.
(B)
643. Politics and Administration of Entitlement Programs. Cr. 3 Substance of national government policy related to old-age assistance, income maintenance, food stamps, health care, and other entitlement programs.
(Y)
664. Statistics and Data Analysis in Political Science II. Cr. 3

Prereq: P S 563 or equiv. Student computer account required. Material fee as indicated in Schedule of Classes. Modern statistical theory applied to the study of politics, administration, and public policy. Multivariate analysis: analysis of variance, multiple regression and correlation, path analysis, factor analysis, and discriminate function analysis.
679. Topics in Comparative Politics. Cr. 3

Analysis of specialized topics, to be announced in Schedule of Classes.
(I)


Office: 71 W. Warren, Room 214

Chairperson: M. Marlyne Kilbey
Associate Chairperson: Alan R. Bass
Administrative Assistant: Carol A. Popp

## 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, Annette U. Rickel, Hjalmar Rosen, Gerald Rosenbaum, Eli Saltz, Carolyn M. Shantz, Charles M. Solley, Ross Stagner (Emeritus), Laurence J. Stettner, Dalmas A. Taylor, Francine Wehmer, R. Douglas Whitman

## Associate Professors

Robert F. Berman, Kenneth S. Davidson, Alan M. Delamater, Joseph M. Fitzgerald, Winifred R. Fraser (Emeritus), S. Edson Haven (Emeritus), Rolando R. Henry, Joseph L. Jacobson, Melissa G. Kaplan, Cary M. Lichtman, Hilary Ratner, Michael M. Reece (Emeritus), Patricia Siple, Rebecca A. Treiman, Jalie A. Tucker, Kathryn Urberg, Rudy E. Vuchinich, Glenn E. Weisfeld, Alice M. Young

## Assistant Professors

Karen S. Ebeling, Leslie Isler, Felicia W. Seaton, Lois Tetrick

## Research Associates

Susan Shantz, Gregory T. Smith

## Research Scientists

Sandra W. Jacobson, Ali Naqvi

## Adjunct Professors

Kenneth M. Adams, Donald F. Caldwell, Samuel Gershon, Mark S. Goldman, Marvin Hyman, Allen Raskin, Eli Z. Rubin

## Adjunct Associate Professors

Gregory Brown, Shirley I. Dobie, David Faigenbaum, Robert R. Freedman, Charles L. Gdowski, James L. Grisell, Valerie Klinge, Helene Lycaki, Mark W. Shatz, Herbert Silverman, Michael K. Tanenhaus, Barry A. Tanner

## Adjunct Assistant Professors

Antonia Abbey, 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, Linda K. Forsberg, Lisa A. Fruchtman, Manfred F. Greiffenstein, Melanie Hwalek, Joan Lessen-Firestone, Ronald F. Lewis, Lynn V. Pantano, Ned Papania, Edward C. Podany, Arthur Robin, Douglas L. Shore, Walter J. Zetusky

## Degree Programs

> Bachelor of Arts - with a major in psychology Bachelor of Science - with a major in psychology Bachelor of Applied Studies - with a major in psychology *Master of Arts - with a major in psychology *Master of Arts in Human Development *Also see: Master of Arts in Industrial Relations *Doctor of Philosophy - with a major in psychology and $\begin{aligned} & \text { specializations in biopsychology, clinical, cognitive, } \\ & \text { developmental, industrial/organizational, or social } \\ & \text { psychology }\end{aligned}$

Undergraduate training offered by the Department of Psychology serves several related purposes. For the liberal arts major, the study of psychology provides an opportunity for increased self-understanding and insight into the behavior of others. For students preparing for medicine, law, education, nursing, business, and other professions, psychology provides important basic knowledge useful in these vocations. For those planning to carry on graduate study in psychology, undergraduate instruction establishes a sound foundation for entering graduate programs in psychology. For those students who plan to work as technicians or paraprofessionals in an area related to mental health or human development, psychology provides a theoretical foundation and basic skills.

During the freshman year, or as early as possible, students interested in psychology should visit the department's undergraduate office to obtain brochures describing the various psychology programs. Students considering a major in this field should read the Bulletin for the Psychology Major before meeting with an adviser to discuss their declaration of major. The Bulletin is available from the Undergraduate Secretary of the Department, who will arrange student appointments with advisers.

Students planning to enter a Ph.D. program in psychology after graduation should have a solid background in the core areas of the field. These areas include learning, perception, abnormal, social, developmental, physiological, and cognitive psychology. In addition, all graduate programs require a background in statistics and experimental design.

## Bachelor of Arts or Bachelor of Science

Admission Requirements for the College are satisfied by the general requirements for undergraduate admission to the University; see page 13.

Before declaring a major in psychology, students must complete PSY 101, Introductory Psychology, and have at least a 2.0 overall honor point average. Although students normally declare their major during the semester in which they will have earned sixty credits, they may declare a major in psychology prior to that time. See the Undergraduate Secretary in the Psychology Department for additional information.

[^71]DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work including satisfaction of the College of Liberal Arts Group Requirements (see page 199) and the University General Education Requirements (see page 20), as well as the major requirements. All course work must be completed in accordance with the academic procedures of the University and the College; see pages $5-35$, and the section on Bachelor's Degree Requirements, page 202.

Major Requirements: To graduate with a major in psychology, a student must complete satisfactorily at least thirty credits (and at least nine courses) in the Department of Psychology, in a sequence approved by the student's major adviser. Degree requirements include:
Psychology 101
(LS) Introductory Psychology
One laboratory course chosen from the following:
Psychology 205 ..................................................................... Psychology of Perception Psychology 207 ......................................................Psychology of Learning and Memory Psychology 209 .................... Cognitive Processes: Language, Thinking \& Problem Solving

Four of the following seven courses:
Another (second) laboratory course from the selection listed above (PSY 205, 207, 209)
Psychology 240
Developmental Psychology
Psychology 260 ............................................................. Psychology of Social Behavior Psychology 331 ..........................................................................Abnormal Psychology Psychology 402 ........................................................................ Research in Psychology Psychology 405 or 505 ........................................................... Physiological Psychology Psychology 410 ......................................................... Statistical Methods in Psychology

Psychology 493 and 496 do not count toward the thirty credit requirement. No more than forty-six credits in psychology can be counted toward the total required for a degree. Transfer students must complete at least fourteen credits in the Psychology Department at Wayne State University.

The Bachelor of Arts degree incorporates all of the Liberal Arts Group Requirements; see page 199.

The Bachelor of Science degree requires a minimum of sixty credits in the natural sciences. Of these sixty credits a minimum of twenty-seven credits must be earned in natural science outside the field of psychology. In addition, students must also fulfill the Liberal Arts language requirement. Consult an adviser for the circumstances under which the language requirement is waived for the Bachelor of Science degree.

## Bachelor of Applied Studies with a major in Psychology

The Bachelor of Applied Studies in Psychology degree is designed to provide opportunities for two-year technical degree recipients to pursue baccalaureate studies with minimal credit loss. This program is intended for persons employed in a mental health related field who want to improve their knowledge of psychology for career advancement in their organization or a related organization. The Bachelor of Applied Studies in Psychology is not designed for people who may want to enter a graduate program in psychology leading to a doctor of philosophy (Ph.D.) degree.

Admission Requirements: Applicants for admission must hold a two-year technical degree from an accredited institution in an area that provides an appropriate foundation for entry into this psychology program. See the general requirements for undergraduate admission to the University, page 13.

DEGREE AND MAJOR REQUIREMENTS: The Bachelor of Applied Studies in Psychology degree requires between 126 and 141
total credits. Students may transfer up to sixty-four credits from their two-year program. The entire curriculum consists of satisfaction of the University General Education Requirements (see page 20 ) and the College Group Requirements (see page 199) as well as transferred credits, electives, and the major requirements as listed below. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively. Further detailed information about this program is available from the undergraduate office of the Psychology Department.

Major requirements, total thirty credits, as follows:
Psychology 101.
(LS) Introductory Psychology
Psychology 331 Abnormal Psychoiogy
Psychology 338 .................................................................................Human Sexuality
Psychology 405 ...............................................Introduction to Physiological Psychology
Psychology 535 ....................................................................Assessment of Personality
One laboratory course chosen from the following:
Psychology 205 .................................................................... Psychology of Perception
Psychology 207 .......................................................Psychology of Learning and Memory Psychology 209 .................... Cognitive Processes: Language, Thinking \& Problem Solving

One of the following three courses:
Psychology 230 ..................................................................... PSychology of Adjustment
Psychology 240 .................................................................... Developmental Psychology
Psychology 260 ............................................................... Psychology of Social Behavior

## One of the following two courses:

Psychology 432 Introduction to Clinical Psychology Psychology 437 Behavior Modification: Theory \& Applications

Elective course in psychology (at least 3 credits; 300 level or above)

## Honors Program

Students with an overall grade point average of 3.3 are eligible for admission to the department's Honors Program. Satisfactory completion of the Honors Program will lead to a degree 'With Honors in Psychology' on the diploma. Students interested in the program should obtain detailed information from the department's undergraduate secretary and make an appointment to see Professor Francine Wehmer, the Departmental Honors Program supervisor.

Honors Sections provide smaller classes, somewhat more advanced readings, and opportunities for independent work by students in the following courses: 101 (Introductory Psychology), 240 (Developmental Psychology), 260 (Psychology of Social Behavior), 331 (Abnormal Psychology), and 407 (Psychology of Drugs and Behavior). In addition, there are Senior Honors seminars $(497,498)$ in which students complete a senior thesis.

Citation for Majors: Psychology majors earning an over-all grade point average of 3.0 and a grade point average of 3.5 in psychology courses will receive a departmental citation at the time of graduation.

## Career-Related Concentrations

For students majoring in the B.A. or B.S. in Psychology Program

Preparation for Psychology Graduate Work: While individual graduate programs in psychology have different requirements for admission, students who intend to do graduate work are advised to earn the B.A. or B.S. degree and take the following courses: two laboratory courses in psychology, plus Psychology 402, 410, 240, 260, and 505.

Additional courses in mathematics, computer science, biology, and sociology are strongly recommended.

Psychology-related employment for graduates with a bachelor's degree has increased in recent years. Such employment, of course, has depended on the personal characteristics of the individual, on the special qualifications and training of the individual, and particularly on job opportunity. The purpose of the following information is to highlight specific courses as desirable background for particular kinds of work. Students interested in such careers should contact the Psychology Department undergraduate secretary for referral to an appropriate faculty adviser.

1. Industrial personnel psychology workers require knowledge, background and skills in construction, administration, and scoring of psychological tests. They may assist in establishing job requirements, developing interview procedures and rating scales, and organizing training programs and programs to reduce accidents, absenteeism, and turnover. Suggested courses include: Psychology 410 (statistical methods), 350 (industrial-organizational psychology), 411 (psychological tests), 554 (motivation in the world of work), 653 (organizational psychology), 490, 496 (special projects under direction of a faculty member). Work in computer science is also recommended.
2. Industrial employee assistance program workers require knowledge that combines industrial psychology course work with clinical psychology course work and skills. Courses suggested for students interested in preparing for employment as paraprofessionals in this area: Psychology 260 (social behavior), 331 (abnormal), 335 (personality), 338 (human sexuality), 350 (industrial-organizational), 407 (drugs and behavior), 437 (behavior modification), 535 (personality), 554 (motivation in the world of work).
3. Mental health workers in psychology (or mental health assistants) need knowledge, background, and skills in interviewing, routine administration of tests, and various kinds of direct contact with persons. Suggested courses include: Psychology 335 (personality), 240 (developmental), 407 (drugs and behavior), 411 (psychological tests), 331 (abnormal), 437 (behavior modification), 528 (psychoanalytic theory), 535 (personality assessment), 493 (field study).
4. Human Development Specialty: Some undergraduate psychology majors may elect to emphasize training in human development. This specialty is designed for students whose career goals involve physical or occupational therapy, infant mental health, provision and administration of day care, work with specific groups such as teenage parents, or other programs that serve infants, adults, children, adolescents, the aged, and their families. This specialty can provide an excellent background either for employment at the bachelor's degree level, or for the pursuit of a graduate degree in psychology or other human service professions.

Students who elect this specialty must meet the following requirements, in addition to those listed for the B.A. or B.S. degree:

Psychology 240 -- Developmental Psychology
Psychology 547 - Developmental Assessment of the Young Child
One of the following two courses:
Psychoiogy 243 - Applied Human Development: Infancy
Psychology 244 - Applied Human Development: Childhood
One of the following two courses:
Psychology 346 - Psychology of Adolescent Behavior and Development
Psychoiogy 349 - Psychology of Adult Development and Aging
One of the following three courses:

Psychology 343 - Psychology of Infant Behavior and Development
Psychology 344 - Psychology of Child Behavior and Development
Psychology 345 - Parent-Child Interactions Across the Lifespan
Two of the following four courses:
Psychology 260 - Psychology of Social Behavior
Psychology 402 - Research in Psychology
Psychology 405 or 505 - Physiological Psychology
Psychology 410 - Statistical Methods in Psychology
Additional courses in human development are available as electives; see courses numbered 34x, 44x, 54x, and 64x in the Courses of Instruction section.

## Minors in Psychology

All students considering psychology as a minor field of concentration must obtain an information sheet from the psychology undergraduate office.

Minor Requirements: A minor in psychology is offered for students majoring in other fields. The minor consists of a minimum of five courses totaling eighteen credits distributed as follows: Introductory Psychology (PSY 101); one basic psychology laboratory course (PSY 205, 207, or 209); one additional core psychology course (PSY 240, $260,402,405,410,505$, or a second laboratory course from the previous group); and two courses selected in consultation with the student's major adviser. Psychology courses that may not be included in the minimum eighteen credits are: PSY 490, 493, or 496.

Non-majors are encouraged to consult with departmental advisers regarding optimum course selections for various purposes.

## COURSES OF INSTRUCTION¹ (PSY)

101. (LS) Introductory Psychology. Cr. 4

Research participation required. No credit after PSY 102. Introduction to the science of behavior. Principles, concepts, and theories of human thought and action. Selected concepts illustrated through laboratory experiments.
102. (LS) Elements of Psychology. Cr. 3

No credit after PSY 101. Research participation required. Principles, theories and applications of psychological knowledge.
(F,W)

## 205. Psychology of Perception: The Interpretation of Experience. Cr. 4

Prereq: PSY 101 or 102. Material fee as indicated in Schedule of Classes. Our knowledge of the world around us; basic sensory processes; organization and differentiation of percepts. Laboratory investigations of basic perceptual phenomena.

## 207. Psychology of Learning and Memory: Fundamental Processes. Cr. 4

Prereq: PSY 101 or 102. Material fee as indicated in Schedule of Classes. Fundamental theories, concepts, and empirical findings in the study of learning. Laboratory investigations of basic learning phenomena, including sensory and motor learning and complex learning processes.
209. Cognitive Processes: Language, Thinking and Problem Solving. (LIN 209). Cr. 4

Prereq: PSY 101 or 102. Material fee as indicated in Schedule of Classes. Fundamental theories, concepts, and empirical findings in the study of human cognition. Topics include thinking, problem solving, language comprehension and production, the acquisition and use of knowledge, memory, attention and consciousness. Laboratory investigations of cognitive processes.
(F,W)
230. Psychology of Adjustment. Cr. 4

Prereq: PSY 101 or 102. Processes involved in the interaction of individuals with their personal and social environments. Psychological methods for dealing with everyday problems, coping with anxiety, and achieving personal growth.
240. Developmental Psychology. Cr. 4

Prereq: PSY 101 or 102. Facts, principles, theories of psychological development. Development of intellectual, emotional, perceptual, linguistic, and social behavior. Developmental trends.
241. Human Development and Health. Cr. 3

Not for psychology major credit. Life span development from a bio-psycho-social perspective; applied aspects of development and family interactional research. Primarily for students in allied health professions.
242. Applied Human Development: Laboratory. Cr. 2

Prereq: satisfactory health record; TB test within last six months. Open only to physical therapy students. Direct participation in infant and toddler care within the center setting; observation of parent-toddler interaction.
243. Applied Human Development: Infancy. (Lct: 2; or Let: 2; Lab: 4). Cr. 2 or 4
Prereq: PSY 240; satisfactory health record; TB test within last six months. Psychology majors must elect for four credits. Growth and development of the child from birth to two and one-half years of age. Direct participation in infant and toddler care within day care center; observation of parent-child interactions.
244. Applied Human Development: Childhood. Cr. 4

Prereq: PSY 240; satisfactory health record and TB test within last six months. Growth and development of the child, from two and one-half to five years of age; methods of care and guidance in a group setting; student participation four hours per week in day care center.

## 260. Psychology of Social Bebavior. Cr. 4

Prereq: PSY 101 or 102. Social behavior of the individual as influenced by the group. Particular attention given to social perception, motivation, and learning; attitudes and values; dynamics of social groups.
320. Motivation, Feeling and Emotion. Cr. 3

Prereq: PSY 101 or 102 . Experimental findings in psychological and allied fields on topics of motivation, feeling, and emotion; evaluation of classical theories and an attempt to develop a theoretical approach based on factual knowledge.

## 325. Psychology of Women. Cr. 3

Prereq: PSY 101 or 102 . Scientific issues relating to the psychological understanding of women: gender identity, psychobiology, mental health, achievement motivation, role conflict, psychology of career choice.
331. Abnormal Psychology. Cr. 4

Prereq: PSY 101 or 102. Nature and causes of various forms of abnormal behavior, including schizophrenia, depression, and neurosis, viewed from psychological, biological, cultural, developmental and historical perspectives. Diagnosis and treatment of pathological behavior.
335. Psychology of Personality. Cr. 3

Prereq: PSY 101 or 102. An examination of the major approaches to the study of personality. Current psychological findings in the field of personality and their implications for psychotherapy and assessment.
336. Racial and Cultural Factors in Human Psychology. Cr. 3

Prereq: PSY 101 or 102 . Methods, problems, theories, and empirical data of psychology in the areas of ethnicity, race, and culture as these factors interact with personality development, cognition, and pathology.
338. Human Sexuality. Cr. 3

Prereq: PSY 101 or 102. Biological, psychological and socio-cultural aspects of human sexuality. Topics include anatomy and development, sexual behavior, and cultural influences.

## 341. Day Care Administration. Cr. 3

Prereq: PSY 240. Applied principles of human development relating to the operation and management of day care facilities. Technical and financial aspects.

## 342. The Young Child in the Physical Environment. Cr. 3

Influence of space and physical setting on child behavior. Application to an optimal learning environment for infants and young children. Includes field exercises related to material covered in lecture.

## 343. (PSY 642) Psychology of Infant Behavior and Development.

 Cr. 3Undergrad. 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.

## 344. Psychology of Child Behavior and Development. Cr. 3

Prereq: PSY 240. Developmental processes in childhood; language acquisition, cognitive development, development of peer-peer interactions.
(Y)
346. Psychology of Adolescent Behavior and Development. Cr. 3 Prereq: PSY 101 or 102 . Factors that promote the emergence of new relationships with parents, changes in peer relationships, increased independence, preparation for marriage and parenthood, and socioeconomic integration into the larger society. Biological and anthropological perspectives on sex roles.
348. Parent-Child Interaction Across the Lifespan. Cr. 3

Prereq: PSY 240. Theory and research on interactions between parents and children. Focus on normal developmental concerns, infancy through adulthood: discipline, sibling rivalry, sex-role identification, parental support.
349. Psychology of Adult Development and Aging. Cr. 3

Prereq: PSY 101, 240. The adulthood and aging years from a developmental perspective, including: intelligence, memory, personality, and social behavior.
(T)
350. Industrial-Organizational Psychology. Cr. 3

Prereq: PSY 101 or 102. Psychology as applied to business and industry. Major areas of industrial psychology: selection, placement, and training procedures; human factors research. Industrial social psychology: motivational and organizational research and theory. ( T )
401. Points of View in Modern Psychology. Cr. 3

Prereq: PSY 101 or 102 . Major systems of psychology, including the influence of scientific thought from other disciplines and countries on models in psychology.
402. Research in Psychology. Cr. 3

Prereq: PSY 101 or 102 . Primarily for students interested in future graduate studies in planning and evaluation of psychological research. Critical evaluation of scientific literature and the planning and development of psychological research proposals. The range of research methods and areas in psychology.
405. Introduction to Physiological Psychology. Cr. 3

Prereq: PSY 101 or 102. No credit after PSY 505. Physiological mechanisms underlying behavior and mental processes; sensory-motor mechanisms; integrative action of the nervous system; neuro-physiological mechanisms involved in emotional behavior and learning.
(T)
407. Psychology of Drugs and Behavior. Cr. 3-4

Prereq: PSY 101 or 102 . Offered for four credits to Liberal Arts Honors students only. The effect of drug action on the nervous system and behavior. Subjective effects of drugs; use of drugs as tools in the study of behavior. Use and misuse of drugs in society.
410. Statistical Methods in Psychology. Cr. 4

Prereq: PSY 101 or 102 or consent of instructor for non-psychology majors. Primarily for psychology majors. Principles and computational methods that apply to quantitative aspects of psychological procedure; elementary correlation theory and prediction, sampling problems, tests of hypotheses, elementary test theory, interpretation of results.
411. Introduction to Psychological Tests. Cr. 3

Prereq: PSY 101 or 102 . Typical tests widely used. Problems involved in choosing appropriate tests, elementary methods of presenting test data, reliability and validity, calculation and interpretation, evaluation of test content. Test construction. (F,W)
431. Psychological Disorders of Children. Cr. 3

Prereq: PSY 101 or 102 . Points of view, methods of study and research findings regarding psychopathology in children.
432. Introduction to Clinical Psychology. Cr. 3

Prereq: PSY 101 or 102. An introduction to the methods, rationale, and empirical foundations of clinical psychology. Issues in the assessment and treatment of psychopathology.
437. Behavior Modification: Theory and Applications. Cr. 3

Prereq: PSY 101 or 102 . Critical examination of the behavioral approach to the theory, assessment, and treatment of problem behavior in normal and abnormal groups.
467. Environmental Psychology. Cr. 3

Prereq: PSY 101 or 102. Research and theoretical perspectives on the influence of environmental factors on social behavior.
490. Directed Study and Research. Cr. 2-4(Max. 9)

Prereq: psychology major; written consent of adviser and instructor. Library or laboratory study of an advanced problem in psychology under the guidance of a faculty member.
491. Honors Directed Study. Cr. 2-4(Max. 9)

Prereq: written consent of instructor. Open only to honors majors in psychology. Honors library or laboratory study of advanced problem in psychology under guidance of a faculty member.
493. Field Study. Cr. 3(Max. 6)

Prereq: two courses in psychology. Students must register for two semesters in order to receive credit. Offered for $S$ and $U$ grades only. Assignment to a hospital, clinic or other agency under faculty supervision. Term paper on observations made in the field. Agency placement contingent upon appropriate background and training in psychology.
(F,W)
496. Special Projects. Cr. 2-3(Max. 9)

Prereq: two courses in psychology; written consent of instructor. Offered for S and U grades only. Departmental assignment to special projects such as tutoring introductory courses.
498. Senior Thesis Seminar. Cr. 3-6

Open only to honors majors in psychology. Pro-seminar leading to the design and execution of a senior honors thesis in psychology.
499. Special Topics in Psychology. Cr. 3(Max. 6)

Prereq: PSY 101 or 102. Topics of current interest to be announced in Schedule of Classes .
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.
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.
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.
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.
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.
549. The Aging Individ ual 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.
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.
558. Consumer Psychology. Cr. 3

Prereq: PSY 101 or 102 ; junior, senior or graduate standing. Applications of psychological and general behavioral science principles to understanding consumer and buying behavior; research design, sampling, and data collection techniques of use to marketers and consumerists.
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, intraand inter-group conflict and cooperation.
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.
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.
571. (PCS 500) Dispute Resolution. (CRJ 594) (P S 589). Cr. 3 Overview of the processes and sectors in the field of dispute resolution including negotiation, mediation, arbitration, and conciliation. (Y)
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.
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.
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.
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.
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.
642. Psychology of Infant Behavior and Development. (PSY 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.
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.

## 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.
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, assessmant, and programming. Experience in infant observation and testing within the Psychology Infant Laboratory.
648. Psychology of Myth, Magic and Religious Experience. Cr. 3 Prereq: PSY 101, 240, or consent of instructor. Theoretical and empirical literature on psychological origins and adaptive functions of myth, magic, and religious experiences in individuals and social groups, both historical and modern.

## 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.
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.
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, and union officers. Psychological factors in strikes: principles relevant to union-management cooperation.
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.

## 699. Advanced Special Topics. Cr. 1-3(Max. 6)

Prereq: senior standing; psychology major with 3.0 h.p.a. or honors program seniors. Topics to be announced in Schedule of Classes. (Y)

# ROMANCE AND GERMANIC LANGUAGES AND LITERATURES 

Office: 487 Manoogian Hall<br>Chairperson: Richard Vernier<br>Academic Services Officer: Mary Hoffiz

## Professors

Vincent C. Almazan (Emeritus), Fernande Bassan, Henry N. Bershas (Emeritus), Manuela M. Cirre (Emerita), 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 (Emerita), Hermann D. Poster (Emeritus), Sol Rossman, Maria C. Roth, Gary E. Scavnicky, Donald E. Schurlknight, Donald C. Spinelli

## Lecturer

Claude Astrachan

## Director of Foreign Language Laboratories

Farouk Alameddine

## Degree Programs

Bachelor of Arts-with a major in French, German, Italian, or Spanish<br>*Master of Arts-with a major in French, German, Italian, or Spanish<br>* Doctor of Philosophy—with a major in modern languages

## Bachelor of Arts Degrees

Admission Requirements for the Bachelor of Arts programs of this department are satisfied by the general requirements for undergraduate admission to the University; see page 13. Students who wish to major in one of the programs offered by the Department should consult with the adviser for that program as soon as possible. The Department secretary will arrange an interview with the appropriate adviser upon the student's request.

DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work including satisfaction of the College of Liberal Arts Group Requirements (see page 199) and the University General Education Requirements (see page 20), as well as the major requirements of one of the following programs. All course work must be completed in accordance with the academic procedures of the University and the School governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively.

* For specific requirements consult the Wayne State University Graduate Bulletin.


## Major Requirements

All majors in the fields of German, Italian, and Spanish are required to take a minimum of two courses in English or American literature or in the literature of a country other than that of their major language, such as those offered by this department in English translation. (For a listing of the latter offerings, see page 311.) Majors are expected to consult with their major advisers concerning suitable cognate courses. They are encouraged to take as much work as possible in the literatures of other languages, both ancient and modern, as well as in history, philosophy, linguistics, art, and music.

Major Requirements in French: There are two French majors offered by the Department, one in language and literature and the other in language and culture.

A major in French language and literature must take French 210 or 260 or $410,361,362,510$ or 520,540 or $550,640,645$ or 646 or 647 , and two courses from 650, 660, 670, 677, 686, 691, 692.

A major in French language and culture must take French 210 or 410, 260 or 271 or $272,361,362,510$ or 520,540 or $550,640,645$ or 646 or 647 or 691 or 692.

French majors in either option are also required to take at least three cognate courses to be selected in consultation with the undergraduate major adviser.

Major Requirements in German: A major in German must take German 271 or 272,310 and 304 or $320,361,362,460,510$, and two courses in literature on the 600 level.

Major Requirements in Italian: A major in Italian must complete eleven courses including: Italian 310, 320, 360 and $361 ; 661 ; 666$; two courses in the post-Renaissance period; and two cognate courses required of all departmental majors.

Major Requirements in Spanish: A major in Spanish must take Spanish 361 and 362 , one of which must be taken by the end of the student's first semester as a major, and the other by the end of the first year as a major. Also required are Spanish $310,410,520,555$ or 556 , three literature courses at the 600 level (at least one peninsular and at least one Latin American), and one elective course in Spanish numbered 300 or above in either language or literature.

Teacher Preparation Curricula: Students who are preparing to teach French, German, Italian, or Spanish in the secondary schools and who wish to obtain a B.A. degree with a major in one of these languages must complete the appropriate major as defined above. Information regarding this curriculum is on pages 207-208.

Preparation for Careers in Business: Foreign language majors who do not plan to teach may wish to consider a series of courses in the School of Business Administration which will provide some background for potential employment with multinational corporations. These courses will also prepare them for entrance into the Master of Business Administration degree program after completion of the B.A. For information, contact the Associate Dean of the School of Business Administration, 226 Prentis Building, telephone: 577-4503.

## Honors in Romance and Germanic Languages

The Honors Program in Romance and Germanic languages is open to students of superior academic ability who are majoring in Romance and Germanic languages. To be recommended for an honors degree from this department, a student must maintain a cumulative honor point average of at least 3.3 . $\mathrm{He} /$ she must accumulate at least fifteen credits in honors-designated course work from any of the departments of the College, including at least one 400 -level seminar given by the

Honors Program. (For seminar topics, see the Schedule of Classes, under 'Honors Program.') For information about the specific curricular requirements of the department's honors program, contact the Chairperson of the Department, or the Director of the Liberal Arts Honors Program (577-3030).

Wayne at Gordes Summer Camp: With the approval of the Department, students may earn credit in advanced French during an eight-week summer session in the Renaissance village of Gordes in the south of France. (See Study Abroad, page 209.)

Junior Year in Munich or Freiburg: With the approval of the department, majors may take their junior year abroad in either of the supervised intercollegiate junior year programs. (See Study Abroad, page 209.)

Wayne at Bologna, Italy: Beginners in Italian as well as advanced students may earn up to twelve credits during a six-week summer session in Bologna, Italy (see Study Abroad, page 209).

## Minors and Cognate Study

Minor Requirements in French: A French minor requires the completion of seventeen to eighteen credits in French 210 or 260, 271 or $272,410,510$ or 520 or 540 or 550 , and one course at the 600 level.

Minor Requirements in German: A German minor requires the completion of nineteen credits in German courses including: 202, 271 or $272,310,361$ or 362,460 and 510 or one course at the 600 level.

Minor Requirements in Italian: An Italian minor requires the completion of eighteen credits in Italian courses including: 202, 310 or 320,360 or 361 , any 600 level course, and one additional course at the 300 or 600 level. Substitutions can be made after consultation with the undergraduate adviser.

Minor Requirements in Spanish: A minor in Spanish requires the completion of 202 and five courses beyond that level for a minimum of nineteen credits. With the guidance of the undergraduate adviser, courses may be chosen from the following: (language) 304, 310, 410, $520,530,640$; (culture) 555, 556; (literature) 361, 362, any 600 -level literature course.

## - Foreign Language Group Requirement

This requirement may be satisfied by passing the first three courses in one language or by proficiency examination; see page 200.

Courses: The student should elect a language as early as possible and continue it without interruption. The courses numbered 101,102 , and 201 are essentially a continuum designed to give the student command of the basic elements of the language. The 'target' language is the preferred language of the classroom. There are several hour examinations in each course; group finals are given. Most of the structural and textual materials are recorded on tape by speakers of native fluency and are available to students in the Foreign Language Laboratory. The learning of a foreign language requires: (a) regular class attendance; (b) class participation; (c) two hours of concentrated study for each hour in class; (d) laboratory attendance. Frequent short visits to the language laboratory are preferable to occasional long cramming sessions.

Placement: The main guide to placement for students who wish to continue the study of a language begun in high school is the number of years of high school language study. Students with one year of high school study are advised to enroll in 101, those with two years, in 102, those with three years, in 201. Those with four years of study may
elect 201 in order to satisfy the foreign language requirement or may choose to write the Proficiency Examination administered by the Department. Students with a sufficiently high proficiency score will be deemed to have satisfied the Foreign Language Group Requirement. For information on the Proficiency Examination, contact the Department at 577-3002. Examinations are scheduled by appointment at the Department Office, 487 Manoogian Hall. (A fee is charged.)

## Humanities Group Requirement

(See page 199.)
Two types of courses offered in the department satisfy the Humanities Group Requirement:

Courses in English: A variety of courses dealing with the culture, the literature, or the film of the French, German, Italian, and Spanish-speaking nations, conducted in English with all readings in English. These courses are open to all students with no prerequisites.

Courses in the Foreign Language: Literature courses in French, German, Italian, and Spanish with readings in the foreign language. Courses regularly open to freshmen and sophomores are numbered $202,260,360,361,362$, and 460 . Literature courses primarily designed for juniors and seniors are on the 600 level. See individual course listings for prerequisites.

## COURSES OF INSTRUCTION ${ }^{1}$

## - Offered in English

No knowledge of a foreign language is presumed or required for the following courses, which are conducted in English with all readings in English. They will not count toward a major in the foreign language from which the translations are derived.

## French in English Translation (FRE)

## 270. (ITA 270) (PL) Anguish and Commitment: European

 Existentialist Literature. (SPA 270). Cr. 3-4Only students in Honors Program may register for four credits. A team-taught interdisciplinary study in English of representative works by European existentialist writers: Dostoevsky, Rilke, Kafka, Moravia, Sartre and Camus.

## 271. (FC) Introduction to French Civilization. Cr. 3

An overview of France's great contributions to world culture; study of French history, thought, art, architecture, society, geography, and institutions, illustrated with slides and films; includes visits to the Detroit Institute of Arts.
272. (FC) The Contemporary French. Cr. 3

Prereq: FRE 271 recommended. The French way of life today: its moral and intellectual foundations, its culture and institutions, and their transformation under the stress of the twentieth century.
290. Studies in French Literature. Cr. 3(Max. 9)

Individual themes, critical issues, special problems, or trends in French literature. Topics to be announced in Schedule of Classes .
691. Contemporary French Criticism and Literary Theory. Cr. 3 Theory and practice of contemporary French criticism; structuralist
${ }^{1}$ See page 433 for interpretation of numbering system, signs and abbreviations.
and post-structuralist works: Barthes, Greimas, Derrida, and Lyotard. French majors required to do readings in French.

## German in English Translation (GER)

261. Norse Mythology. Cr. 3

Typical myths, sagas, legends and their relation to the religion, customs, ethics, art, and literature of the Germanic tribes to the end of the Viking age.
270. (ITA 270) (PL) Anguish and Commitment: European Existentialist Literature. (SPA 270) (FRE 270). Cr. 3-4
Only students in Honors Program may register for four credits. A team-taught interdisciplinary study in English of representative works by European existentialist writers: Dostoevsky, Rilke, Kafka, Moravia, Sartre and Camus.
271. (FC) Survey of Germanic Culture I. Cr. 3

Development of Germanic people from their origin to 1835; their major contributions of cultural significance to the Western world.
272. (FC) Survey of Germanic Culture II. Cr. 3

Development of Germanic people from 1835 to the present; the Nazi period; and World War II.
290. Studies in German Literature. Cr. 3(Max. 9)

Individual themes, critical issues, special problems, or trends in German literature. Topics to be announced in Schedule of Classes . (I)
291. Understanding the Fairy Tale. Cr. 3

Fairy tales of the Brothers Grimm and other German writers considered in English; ways fairy tales are meaningful to society.

Italian in English Translation (ITA)
270. (PL) Anguish and Commitment: European Existentialist Literature. (SPA 270) (FRE 270) (GER 270) (RUS 270). Cr. 3-4
Only students in Honors Program may register for four credits. A team-taught interdisciplinary study in English of representative works by European existentialist writers: Dostoevsky, Rilke, Kafka, Moravia, Sartre, Camus, Unamuno, Mallea and Lispector.
315. Aspects of Italian Cinema. Cr. 3(Max. 6)

Material fee as indicated in Schedule of Classes. Major developments in the Italian cinema from the origins to the present. Knowledge of Italian not required. Topics to be announced in Schedule of Classes .
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 .

## 597. Dante's Divine Comedy. Cr. 3

The poem as a synthesis of medieval culture; its structure, poetic value, and relevance to Western literature.

## Spanish in English Translation (SPA)

240. (CBS 210) Chicano Literature and Culture. Cr. 3

Examination of Chicano literature. Themes and figures in a social and historical context.
250. (CBS 211) Puerto Rican Literafure and Culture. Cr. 3 Examination of Puerto Rican literature. Themes and figures in a
social and historical context.

## 270. (ITA 270) (PL) Anguish and Commitment: European Existentialist Literature. Cr. 3-4

Only students in Honors Program may register for four credits. A team-taught interdisciplinary study in English of representative works by European existentialist writers: Dostoevsky, Rilke, Kafka, Moravia, Sartre and Camus.
290. Studies in Spanish Literature. Cr. 3(Max. 9)

Period, genre, or topic to be announced in Schedule of Classes .
291. Spanish American Literature and Culture. (CBS 291) (BKS 291). Cr. 3(Max. 9)

Genres, writers, themes, trends. Topics to be announced in Schedule of Classes .

## Foreign Language Instruction

## French (FRE)

275. Introduction to Quebec Studies. (HIS 275) (P S 275) (GEG 275). Cr. 3

Survey of the French-speaking Province of Quebec in its cultural, literary, historical, geographical, and political aspects; key concepts and cultural patterns defining the Quebecois identity. Team taught in English.
647. The French Mind. Cr. 3

Prereq: FRE 361, 362. The moral and intellectual values underlying French culture and civilization. Their historical development and their evolution as reflected in the institutions, literature and everyday life of modern France.
650. French Prose. Cr. 3

Prereq: FRE 362. The development of the French prose genres (novel, essay, etc.) from their origins to the present. Emphasis on textual analysis.
670. French Drama. Cr. 3

Prereq: FRE 362. The development of the dramatic genres (comedy, tragedy, etc.) in French literature, from their origins to the present. Emphasis on textual analysis.
101. Elementary French. Cr. 4

Material fee as indicated in Schedule of Classes. Training in pronunciation, aural comprehension, oral and written expression. Laboratory work is part of class preparation.
102. Elementary French. Cr. 4

Prereq: FRE 101 or placement. Material fee as indicated in Schedule of Classes. Continuation of FRE 101.
201. (FC) Intermediate French. Cr. 4

Prereq: FRE 102 or placement. Material fee as indicated in Schedule of Classes. Continuation of FRE 102.
210. Intermediate Grammar, Conversation and Composition. Cr. 4
Prereq: FRE 201. Special attention to development of language skills. Conducted entirely in French; discussion based on reading from contemporary materials.
260. Introduction to the Reading of Literature. Cr. 4

Prereq: FRE 201. An initiation into the reading of various literary genres. Methods and vocabulary to discuss and analyze the essays,
poems, short novels, and plays under consideration.
361. Survey of French Literature I. Cr. 3

Prereq: FRE 210 or 260 . Study of literature from the Middle Ages to the 18 th century.
362. Survey of French Literature II. Cr. 3

Prereq: FRE 210 or 260 . Study of literature in the nineteenth and twentieth centuries.
(W)
410. Intermediate Conversation, Composition, and Contemporary Cultural Readings. Cr. 4
Prereq: FRE 210. Discussion and composition based on readings in contemporary French social and cultural topics.
510. Advanced Speaking and Writing. Cr. 4

Prereq: FRE 210 or 410 or consent of instructor. Spoken French in the context of French civilization. Readings and writing skills based on contemporary French texts, translations.
520. Phonetics and Diction. Cr. 3

Prereq: FRE 210 or 410 or consent of instructor. A systematic study of French sounds, phonetic transcriptions; practice in the language laboratory; intensive drills in accurate pronunciation and intonation.
(B)
531. Advanced Composition "sur le Motif". Cr. 4

Prereq: FRE 210 or 410 . Composition and explication de textes utilizing texts related to Provence. Taught only in Provence at the Wayne State University summer program in Gordes, France.
540. Advanced Grammar Review. Cr. 3

Prereq: FRE 210 or 410 or consent of instructor. Advanced French grammar. Translation exercises from English to French; study of appropriate grammar rules.
550. History of the French Language. Cr. 3

Prereq: FRE 510, 540 or consent of instructor. Development of the French language from its origins to the present day; special emphasis on language as a reflection of culture.
640. The Structure of French. Cr. 4

Prereq: FRE 520 or consent of instructor. Principles of linguistics and their application to French.
645. French Civilization. Cr. 3

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.
646. Civilization "sur le Motif". Cr. 4

Prereq: FRE 210 or $\mathbf{4 1 0}$. 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.
660. French Poetry. Cr. 3

Prereq: FRE 362. The development of the poetic genre, from the origin of its formal conventions to modern challenges to the tradition. Emphasis on oral interpretation and textual analysis of poetry.
677. Studies in French Literature. Cr. 3 (Max. 12)

Prereq: FRE 362. In-depth study of a period, a literary movement, or an author. Topics to be announced in Schedule of Classes.
686. Francophone Literatures. Cr. 3 (Max. 6)

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 .
692. French Bibliography, Research Methods and Stylistics. Cr. 3 Prereq: two 600 -level French literature courses. Open only to seniors and graduate students. Initiation to French bibliographical tools and their usage in research. Methodology for papers, essays, and dissertation. Stylistics.

## Special Courses

90. French for Ph.D. Reading Requirement. Cr. 4

Offered for S and U grades only. No degree credit.
500. Minor Language Practicum. Cr. 3(Max. 9)

Prereq: consent of graduate adviser. Offered for $S$ and $U$ grades only. No degree credit toward Ph.D. Controlled application of active language skills for students electing a Ph.D. minor in French.
590. Directed Study. Cr. 1-4(Max. 8)

Prereq: undergrad., consent of adviser and chairperson; grad., consent of chairperson, adviser, and graduate officer.

## German (GER)

## 101. Elementary German. Cr. 4

Material fee as indicated in Schedule of Classes. Development of ability to speak and read German.
102. Elementary German. Cr. 4

Prereq: GER 101 or placement. Material fee as indicated in Schedule of Classes. Continuation of GER 101.
201. (FC) Intermediate German. Cr. 4

Prereq: GER 102 or 199 or placement. Material fee as indicated in Schedule of Classes. Continuation of GER 102. Reading of graded German literature and grammar review. One section emphasizes development of reading in student's particular field of study; section announced in Schedule of Classes .
202. Intermediate German. Cr. 4

Prereq: GER 201 or equiv. Continuation of GER 201.
208. Informal German Conversation. Cr. 2 (Max. 4)

Prereq: GER 101 or equiv. Offered for $S$ and $U$ grades only.
304. Business German. Cr. 4

Prereq: GER 201. Readings from German business communications and publications; German business correspondence.
310. Intermediate Composition and Conversation I. Cr. 3

Prereq: GER 202 or equiv. German of common usage. Practical approach to contemporary idioms.
320. Intermediate Composition and Conversation II. Cr. 3

Prereq: GER 202 or equiv. German of common usage. Practical approach to contemporary idioms.
361. German Literary Traditions I. Cr. 3 Prereq: GER 202 or equiv.
362. German Literary Traditions II. Cr. 3

Prereq: GER 202 or equiv.
460. Proseminar: Goethe's Faust. Cr. 3

Prereq: GER 361 or 362.
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.
640. Structure of German. Cr. 4

Prereq: GER 510 or equiv. The phonological, morphological, and syntactical structure of modern German; theory and practice.(I)
661. Lyric Poetry. Cr. 4

Historical survey of German lyric poetry from the Baroque to the twentieth century; tools and methods of interpretation.
665. Romanticism. Cr. 4

Philosophical and aesthetical foundations, major figures, and works of the period.
667. The Age of Realism. Cr. 4

Junges Deutschland, Heine, Buechner, Grabbe, Hebbel, and the major prose writers of realism.
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.
672. The Age of Enlightenment. Cr. 4

Lessing; Sturm und Drang.
673. The Classical Age. Cr. 4

Goethe; Schiller.
677. From Naturalism to the End of the Weimar Republic. Cr. 4
678. Literature from the Third Reich to the Present. Cr. 4
679. Studies in German Literature. Cr. 1-4(Max. 12)

Major author, genre, or literary movement. Topics to be announced in Schedule of Classes .

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.
590. Directed Study. Cr. 1-4(Max. 8)

Undergrad. prereq: consent of German adviser; grad. prereq: consent of German adviser and graduate officer.

## Italian (ITA)

## 101. Elementary Italian. Cr. 4

Material fee as indicated in Schedule of Classes. Ear training, grammar, reading, writing, speaking; emphasis on ability to speak and read Italian.
102. Elementary Italian. Cr. 4

Prereq: ITA 101 or placement. Material fee as indicated in Schedule of Classes. Continuation of ITA 101. Composition, conversation, reading of modern prose.
201. (FC) Intermediate Italian. Cr. 4

Prereq: ITA 102 or placement. Material fee as indicated in Schedule of Classes. Grammar review, composition, conversation, reading, discussion of contemporary Italian culture.(T)
202. Intermediate Italian. Cr. 4

Prereq: ITA 201 or placement. Continuation of ITA 201 with readings in modern Italian literature and culture.
310. Italian Conversation. Cr. 3

Prereq: ITA 202 or placement. Conversation based on current topics and reading materials.
320. Italian Grammar and Composition. Cr. 3

Prereq: ITA 202 or placement. Advanced study of Italian grammar, phonetics, and syntax. Practice in writing themes and translations.
360. Masterpieces of Italian Literature I. Cr. 4

Prereq: ITA 202 or consent of department. Representative works or selections from the writings of the major authors from the thirteenth through seventeenth centuries.
361. Masterpieces of Italian Literature II. Cr. 4

Prereq: ITA 202 or consent of department. Representative works or selections from the writings of the major authors from the eighteenth through twentieth centuries.
392. Aspects of Contemporary Italian Culture. Cr. 3

Prereq: ITA 310 or consent of department. Examination of current Italian literature and the reasons for its native popularity. Taught only at the Wayne State University summer program in Italy.
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.
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 .
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 .
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 .
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 .

## 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.
590. Directed Study. Cr. 1-4(Max. 8)

Prereq: undergrad., consent of adviser and chairperson; grad., consent of adviser, chairperson, and graduate officer.

## Spanish (SPA)

363. Survey of Spanish American Literature. Cr. 3

Prereq: SPA 202 or placement. Survey of Spanish American literature from colonial period to the present.
101. Elementary Spanish. Cr. 4

Material fee as indicated in Schedule of Classes. Ear training, grammar, reading, writing, speaking.
102. Elementary Spanish. Cr. 4

Prereq: SPA 101 or placement. Material fee as indicated in Schedule of Classes. Continuation of SPA 101.
201. (FC) Intermediate Spanish. Cr. 4

Prereq: SPA 102 or placement. Material fee as indicated in Schedule of Classes. Grammar review; emphasis on compositions, reading, conversation.

## 202. Intermediate Spanish: Readings in Hispanic Literature and Culture. Cr. 4

Prereq: SPA 201 or placement. Discussion of literary and cultural readings from Spain and Spanish America; spoken and written skills emphasized.
304. Commercial Spanish. Cr. 3

Prereq: SPA 202. Commercial Spanish for basic business, legal and banking transactions and correspondence; terminology used in banking, commerce, accouinting and marketing; emphasis on translation and format of commercial documents and letters.
310. Intermediate Grammar. Cr. 4

Prereq: SPA 201 or placement. Study and utilization of grammar in speech and writing; pronunciation and intonation. Conducted entirely in Spanish.
320. Intermediate Conversation. Cr. 3

Prereq: SPA 202. Informal class conversations, debates and oral reports to reinforce grammatical principles and to improve pronunciation through practice and imitation.
361. Survey of Spanish Literature I. Cr. 3

Prereq: SPA 202 or placement. Spanish literature from its origin to 1700.
362. Survey of Spanish Literature II. Cr. 3

Prereq: SPA 361. Spanish literature from 1700 to the present.
410. Advanced Composition. Cr. 3

Prereq: SPA 310 or placement. Study and utilization of Spanish in written form: colloquial usage, literary Spanish, commercial Spanish, idiomatic expressions. Brief compositions and translation exercises. Conducted entirely in Spanish.
430. Approaches in Spanish Translation I. Cr. 3

Prereq: SPA 310. General aspects of techniques of translation of non-literary and technical materials selected from Spanish and English newspapers, periodicals and books.
520. Spanist Phonetics. Cr. 3

Prereq: SPA 310 or consent of instructor. A systematic study of Spanish sounds; intensive drill in accurate pronunciation.
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.
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.
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.
640. The Structure of Spanish. Cr. 3

Prereq: SPA 520 or consent of instructor. Principles of linguistics and their application to Spanish.

## 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.)
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.)

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.)
(B)
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. $\mathbf{C r} .4$

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 such 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-Romantics, Symbolists, the Generations of 1898 and 1927, and the more contemporary poets.
656. Cervantes. Cr. 4

Prereq: SPA 361 and 362. A detailed study of Don Quijote. 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 theatre, 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 the conquest; conflicts and tension of the dominant and the conquered societies.
661. The Spanish American Novel 1. 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 686.)
662. The Spanish American Novel II. Cr. 4

Prereq: SPA 361, 362. Roots of the modern novel in Spanish America; its stages of evolution through the vanguard period into the contemporary stage, with emphasis on representative figures such as Carpentier, Cortazar, and Garcia Marquez. (Formerly SPA 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 and 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.

## Special Courses

391. Foreign Language Service Practicum. Cr. 2(Max. 4)

Prereq: oral and written proficiency in the Spanish language with consent of chairperson. No credit for major or group requirements. Two hour weekly visits with foreign-born residents of nursing homes to converse in their native language, gather life histories, serve as translators, read aloud foreign language materials, provide companionship, and enhance social functioning and adjustment
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.
590. Directed Study. Cr. 1-4(Max. 8)

Prereq: undergrad., consent of adviser and chairperson; grad., consent of adviser, chairperson, and graduate officer.

# SLAVIC AND EASTERN LANGUAGES AND LITERATURES 

Office: 443 Manoogian Hall

Chairperson: Frank J. Corliss, Jr.

## Professor

Edmund Ordon(Emeritus)

## Associate Professor

Kenneth Brostrom

## Assistant Professor

Frank J. Corliss, Jr.

## Lecturers

Halimur Khan, Dickran Toumajan
Degree Programs
Bachelor of Arts—with a major in Polish
Bachelor of Arts—with a major in Russian
Bachelor of Arts-with a major in Slavic

## * Master of Arts—with a major in East European studies

## Bachelor of Arts Degrees

Admission Requirements for these programs are satisfied by the general requirements for undergraduate admission to the University; see page 13 .

DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work including satisfaction of the College of Liberal Arts Group Requirements (see page 199) and the University General Education Requirements (see page 20), as well as the major requirements of one of the following programs. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively.

## - Major Requirements

Major Requirements in Polish: Students majoring in Polish are required to complete satisfactorily twenty-two credits in Polish beyond Polish 201 and three credits in Polish history. Courses in Polish will include:
(a) Polish 302, 346, and 445 .
(b) Polish 460,570, and 590. POL 460 or 570 may be repeated for credit on different topics.

* For specific requirements, consult the Wayne State University Graduate School Bulletin.

Major Requirements in Russian: Students majoring in Russian are required to complete satisfactorily thirty credits in Russian beyond Russian 201 including: Russian 245, 302, 303, 380, 409, 410, 445, 460, 560.

Major Requirements in Slavic: Students majoring in Slavic are required to complete satisfactorily twenty-four credits in Russian, including $245,302,303$, and either 409 or 445 and one course in Russian literature, and sixteen credits in Polish or Ukrainian or the equivalent in another Slavic language, and one course in the literature of that language.

All majors are strongly urged to elect courses in cognate fields, such as geography, history, or political science.

## Minors and Cognate Study

Minor in Polish: Students wishing to obtain a minor in Polish are required to complete seventeen credits in Polish beyond Polish 201. These credits must include Polish 302, 346, 445, 460 (one section), 570 (one section) or 310 .

Minor in Russian: Students wishing to obtain a minor in Russian are required to complete seventeen credits in Russian beyond Russian 202. These credits must include: Russian 245, 302, 303, 445, 460 or 560, and 551.

## Foreign Language Group Requirement

The student may satisfy the requirement by passing the first three courses in one language or by a special examination

Courses: The courses numbered 101,102 , and 201 are essentially a continuum designed to give students command of the basic elements of the language.

Placement: Students who wish to continue the study of a language begun in high school or in another college must take a placement test before registering. Examinations are given by appointment at 443 Manoogian Hall.

## Honors in Slavic and Eastern Languages and Literatures

The Honors Program in Slavic and Eastern Languages and Literatures is open to students of superior academic ability who are majoring in Slavic and eastern languages and literatures. To be recommended for an honors degree from this department, a student must maintain a cumulative honor point average of at least 3.3 . He/she must accumulate at least fifteen credits in honors-designated course work, including at least one 400-level seminar offered through the Honors Program of the College of Liberal Arts (see the Schedule of Classes under 'Honors Program' for seminar topics), and the departmental credits associated with completion of a Senior Thesis. For more information about the specific requirements of the department's honors curriculum, contact the Chairperson of the Department, or the Director of the Liberal Arts Honors Program (577-3030).

## Travel Study Program

Through an exchange agreement with the Jagiellonian University, Krakow, Poland, the Polish Studies Program offers nine scholarships to registered students at Wayne State for Summer Study in Poland. The scholarships cover full room, board, tuition, cultural events and excursions during six weeks of study at the Jagiellonian University Summer School in Krakow. International travel (round trip, Detroit
to Warsaw) plus personal incidental expenses while in Poland are the only costs the student must bear. The summer program at Jagiellonian University involves intensive study of the Polish language along with selected topics in the areas of Polish literature, history and culture.

The scholarships are competitive, and applicants must submit a copy of their transcript along with three letters of recommendation. A selection committee will interview each applicant; preference in selection will be given to students of the Polish language and to those with a demonstrated interest in Eastern and Central European affairs. Some knowledge of Polish is preferable, but is not required. Students not granted scholarships may participate in this program at their own expense. Inquiries should be made at the Slavic Department office, 443 Manoogian Hall; 577-3024.

## COURSES OF INSTRUCTION ${ }^{1}$

- Offered in English

No knowledge of a foreign language is presumed or required for the following courses, which are conducted in English with all readings in English.

## Armenian in English Translation (ARM)

465. Survey of Armenian Culture and Literature in Translation: Ancient and Medieval Periods. Cr. 3
Cultural heritage of the Armenian people; their contribution in arts, literature, music and folklore.
466. (FC) Survey of Armenian Culture and Literature in Translation: The Modern Period. Cr. 3
The great awakening; great expectations shattered by genocide. Dawn of new hope; cultural explosion in homeland and in the diaspora. (W)

## Polish in English Translation (POL)

275. Survey of Polish Literature in Translation. Cr. 3

Survey of Polish literature from the Renaissance to the modern period.

## Russian in English Translation (RUS)

270. (ITA 270) (PL) Anguish and Commitment: European Existentialist Literature. (SPA 270) (FRE 270) (GER 270). Cr. 3-4
Only students in Honors Program may register for four credits. A team-taught interdisciplinary study in English of representative works by European existentialist writers: Dostoevsky, Rilke, Kafka, Moravia, Sartre, Camus, Unamuno, Mallea and Lispector.
271. (FC) Study of Russian Culture. Cr. 3

Basic features of Russia's cultural heritage. Specific characteristics of the developments and interconnections of institutional forms of oral and written literature and arts.
365. (PL) Soviet Literature in Translation. Cr. 3 Russian literature in Soviet period.
${ }^{1}$ See page 433 for interpretation of numbering system, signs and abbreviations.
375. Selected Topics: Literature in Translation. Cr. 3(Max. 9)

A particular writer, genre, theme or topic in Russian literature. Topics to be announced in Schedule of Classes .
465. (PL) Survey of Nineteenth Century Russian Literature: in Translation. Cr. 3
Literature of nineteenth century; special attention to major writers.

## Foreign Language Instruction

## Armenian (ARM)


#### Abstract

101. Elementary Armenian. Cr. 4

Material fee as indicated in Schedule of Classes. Introduction to sounds, spelling, vocabulary forms, syntax as basis for reading and conversation.


102. Elementary Armenian. Cr. 4

Prereq: ARM 101 or equiv. Material fee as indicated in Schedule of Classes. Continuation of ARM 101.
201. (FC) Intermediate Armenian. Cr. 4

Prereq: ARM 102 or equiv. Material fee as indicated in Schedule of Classes. Study in depth of structure, particularly syntax, based on reading. Oral and written presentation.
590. Directed Study. Cr. 1-3(Max. 8)

Prereq: ARM 202 or equiv., written consent of chairperson. Undergraduate credit only. For students who wish credit for program of work not included in regularly scheduled courses, either in language or in literature.

## Polish (POL)

## 101. Elementary Polish. Cr. 4

Material fee as indicated in Schedule of Classes. Sounds, spelling, vocabulary, forms, syntax as basis for reading and conversation. (T)
102. Elementary Polish. Cr. 4

Prereq: POL 101 or equiv. Material fee as indicated in Schedule of Classes. Continuation of POL 101.(T)
201. (FC) Intermediate Polish. Cr. 4

Prereq: POL 102 or equiv. Material fee as indicated in Schedule of Classes. Study in depth of structure, particularly syntax, based on reading. Oral and written practice.(T)
302. Intermediate Polish. Cr. 4

Prereq: POL 201 or equiv. Broader knowledge of Polish grammar and lexicon based on reading of Polish literature.
346. Oral and Written Composition. Cr. 3

Prereq: POL 302 or equiv. Structural features not mastered in beginning courses. Extends mastery of written and spoken Polish.
390. Directed Study. Cr. 1-3 (Max. 6)

Prereq: POL 201 or equiv.; written consent of chairperson. For students desiring additional work in the language at the intermediate level; for programs of work not included in scheduled course, either in language or literature.
445. Language Skills: Advanced Speaking and Writing. Cr. 3

Prereq: POL 346 or equiv. Intensive practical training in use of Polish idiom to achieve fluency of expression.
460. Major Polish Writers and Their Times. Cr. 3(Max. 6)

Mickiewicz or Sienkiewicz: major works; contemporaries; impact on development of Polish literature. Topics to be announced in Schedule of Classes.
570. Genre in Polish Literature. Cr. 3(Max. 6)

Prereq: POL 302 or equiv. Development of a literary form: short story, poetry or literary criticism; emphasis on major exponents of the form. Topics to be announced in Schedule of Classes .
590. Directed Study. Cr. 1-3(Max. 8)

Prereq: undergrad., POL 302 or equiv., written consent of chairperson; grad., written consent of chairperson and graduate officer. Graduate major credit only in East European Studies.

## Russian (RUS)

## 101. Elementary Russian. Cr. 4

Material fee as indicated in Schedule of Classes. Sounds, spelling, vocabulary, forms, syntax as basis for reading and conversation.
102. Elementary Russian. Cr. 4

Prereq: RUS 101 or equiv. Material fee as indicated in Schedule of
Classes. Continuation of RUS 101.
201. (FC) Intermediate Russian. Cr. 4

Prereq: RUS 102 or equiv. Material fee as indicated in Schedule of Classes. Structure, particularly syntax, based on reading. Oral and written practice.
(T)
245. Language Skills: Speaking and Writing. Cr. 3

Prereq: RUS 201 or equiv. Structural features not mastered in beginning courses. Extends mastery of written and spoken Russian.
(W)
302. Intermediate Russian. Cr. 3

Prereq: RUS 201 or equiv. Broader knowledge of Russian grammar and lexicon based on reading of Russian literature.
303. Intermediate Russian. Cr. 3

Prereq: RUS 302 or equiv. Continuation of RUS 302.
380. Introduction to Russian Literature. Cr. 2

Prereq: RUS 201 or equiv. Introduction to the major genres. Various critical approaches leading to the development of techniques of analysis.

## 390. Directed Study. Cr. 1-3 (Max. 6)

Prereq: RUS 201 or equiv.; written consent of chairperson. For students desiring additional work in the language at the intermediate level; for programs of work not included in scheduled courses, either in language or literature.
409. Language Skills: Applied Grammar and Syntax I. Cr. 3

Prereq: RUS 201 or equiv. or consent of instructor. Russian as a language system; phonolcgy, morphology, word formation.
(F)
410. Language Skills: Applied Grammar and Syntax II. Cr. 3

Prereq: RUS 409 or consent of instructor. Russian as a language system: phrase and sentence types.
(W)
445. Language Skills: Advanced Speaking and Writing. Cr. 2 Prereq: RUS 245 or consent of instructor. Intensive practical training in use of Russian idiom to achieve fluency of expression.
460. Survey of Nineteenth Century Russian Literature. Cr. 3

Prereq: RUS 380 or consent of instructor. From precursors of Pushkin to Chekhov's death.
560. Survey of Twentieth Century Russian Literature. Cr. 3

Prereq: RUS 380 or consent of instructor. Russian pre-revolutionary and Soviet literature, 1890 to the present.
590. Directed Study. Cr. 1-3(Max. 8)

Prereq: undergrad., written consent of chairperson; grad., written consent of chairperson and graduate officer. For students who wish credit for program of work not included in regularly scheduled courses, either in language or in literature. Knowledge of Russian required.

## Slavic (SLA)

498. Honors Thesis in Slavic and Eastern Languages and Literatures. Cr. 3-6
Prereq: senior standing; 3.3 h.p.a. Open only to majors in Slavic and Eastern languages. Thesis problem to be completed under direction of faculty member.

## Ukrainian (UKR)

101. Elementary Ukrainian. Cr. 4

Material fee as indicated in Schedule of Classes. Sounds, spelling, vocabulary, forms, syntax as a basis for reading and conversation. (F)
102. Elementary Ukrainian. Cr. 4

Prereq: UKR 101 or equiv. Material fee as indicated in Schedule of
Classes. Continuation of UKR 101.
(W)
201. (FC) Intermediate Ukrainian. Cr. 4

Prereq: UKR 102 or equiv. Material fee as indicated in Schedule of Classes. Study in-depth of structure and syntax based on reading. Oral and written practice.
302. Introduction to Ukrainian Literature: Nineteenth and Twentieth Centuries. Cr. 4
Prereq: UKR 201 or equiv. Readings of short stories, poetry and essays of representative authors.
390. Directed Study. Cr. 1-3 (Max. 6)

Prereq: UKR 201 or equiv.; written consent of chairperson. For students desiring additional work in the language at the intermediate level; for programs of work not included in scheduled courses, either language or literature.
590. Directed Study. Cr. 1-3(Max. 8)

Prereq: UKR 302 or equiv; written consent of chairperson. No graduate credit. For students who wish credit for program of work not included in regularly scheduled courses, either in language or in literature.

## SOCIOLOGY

Office: 756 Mackenzie Hall

Acting Chairperson: Janet R. Hankin

## Professors

Joseph Albini, J. Ross Eshleman, Mel J. Ravitz (Emeritus), 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, V. Lee Hamilton, Mary J. Van Meter, Rhonda Montgomery

## Assistant Professors

Israel L. Barak-Glantz, Robert G. Newby

## Adjunct Associate Professor

Janet R. Hankin

## Degree Programs

Bachelor of Arts-with a major in sociology
Bachelor of Arts-with a major in anthropology and sociology
Bachelor of Applied Studies- with a major in sociology
*Master of Arts—with a major in sociology

* Doctor of Philosophy—with a major in sociology

The courses in sociology are designed for various groups of students: (1) those desiring scientific knowledge of social relationships as a part of their general education; (2) those planning to enter a public service profession such as social and urban planning, public administration, nursing, medicine, dentistry, or law; (3) those expecting to engage in work that will require a broad grasp of the nature of society, of public opinion, and of social change such as public affairs, journalism, public relations, communications, marketing, etc.; (4) those anticipating a career in social and statistical research and planning; (5) those looking forward to the teaching of social studies and sociology; (6) those preparing for a career in international studies or for service in foreign affairs; (7) those majoring in sociology as a preparation for graduate professional training in social work; (8) those planning to pursue graduate studies in sociology.

Students concerned with sociology as preparations for these careers are encouraged to consult with the undergraduate adviser and with members of the faculty.

## Bachelor of Arts

Admission Requirements for these programs are satisfied by the general requirements for undergraduate admission to the University; see page 13 .

[^72]DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work including satisfaction of the College of Liberal Arts Group Requirements (see page 199) and the University General Education Requirements (see page 20), as well as the major requirements of one of the following programs. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively. It is expected that Group Requirements will be fulfilled during the freshman and sophomore years. Language Group Requirements should normally be fulfilled before election of the major.

## - With a Major in Sociology

Major Requirements: Students majoring in sociology are required to elect a minimum of thirty credits in the field, including Sociology 200 , 330,405 (or 605 or 606 ), 410,420 . Students may not elect more than forty-five credits in course work within the Department.

Cognate Requirements: The following subjects are suggested as cognate electives. It is recommended that not less than twelve credits be selected from the list: Anthropology 210, 506, 520, 537, 617, 638, 639; Economics 102; Geography 320, 565, 613, 624; History 105, 120, 130, 204, 205, 513; Political Science 231, 251, 343; Psychology 230, $331,401,535,565$. Undergraduates who plan graduate study in sociology are encouraged to elect some courses in mathematics and statistics as part of their undergraduate program.

## - With a Major in Anthropology and Sociology

Major Requirements: Students majoring in anthropology and sociology are required to take Anthropology 210, 211, 520,527,531 or 532 , and 638 or 639 ; and Sociology 200, 330, 405 (or 605 or 606 ), 410, 420. A total of at least twenty credits in sociology and twenty credits in anthropology must be completed, but not more than forty-five credits in the combined fields may be elected.

## Model Plan for Majors

Junior Year: Sociology 330, 420, 405 (or 605 or 606), 410; elective courses. Students are urged to take Sociology 420 and 405 , in particular, in the junior year.

Senior Year: Sociology 382, 540; elective courses; remaining requirements not taken in junior year.

## Bachelor of Applied Studies <br> - with a Major in Sociology

Admission Requirements: This program is designed for students who hold an Associate degree in a human services technology field; see the general requirements for undergraduate admission to the University, page 13.
DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work including satisfation of the College of Liberal Arts Group Requirements (see page 199) and the University General Education Requirements (see page 20), as well as the major and cognate requirements listed below. Each candidate for the degree of Bachelor of Applied Studies must complete a minimum of sixty-three credits beyond the required credits for the Associate degree. Courses in excess of the sixty-three credit minimum may be required if any of these requirements have not been met. All course work must be completed in accordance with the academic procedures of the University and the College governing undergraduate scholarship and degrees; see pages 5-35 and 199-211, respectively.

Major Requirements: Candidates must complete thirty credits in sociology including SOC $200,330,405$ (or 605 or 606 ), 410,420 ; and a minimum of one course in at least three of the following areas:

Criminology, Penology, Deviance (S0C 382, 384, 480, or 583);
Cultural Diversity (SOC 355, 550, 557, or 558);
Family and Sex Roles (SOC 446, 540, 541, 545, or 546);
Social Institutions and Social Structure (SOC 335, 536, 563, or 581);
Special Problems (SOC 576, or 587).
In consultation with their advisers, students should select courses which relate to their areas of specialization in the human services field. Students may not elect more than forty-five credits in course work within the Department.

Cognate Requirements: Students are required to take courses in three additional areas which will enhance their management and organizational skills. These courses include: computer applications (SOC 422* or equivalent); management skills (PSY 350, or P S 231); statistics (SOC 628* or equivalent).

Additional elective courses are required to total a minimum of sixty credits at a baccalaurate degree granting institution.

## Honors Program

An honors major in sociology is available to students who fulfill all requirements for the major, and who maintain a cumulative honor point average of at least 3.3 and at least 3.3 in sociology courses. Honors majors must demonstrate the ability to do original work by writing an Honors Thesis during their senior year. The Sociology Honors Program leads to a degree designation 'With Honors in Sociology'.

## Requirements for the Honors Degree are:

1. satisfaction of all requirements for a major in sociology;
2. overall h.p.a. of 3.3;
3. sociology h.p.a. of 3.3;
4. a minimum of three and maximum of six thesis credits in SOC 499;
5. an approved honors thesis;
6. at least one 400 -level seminar offered through the Honors Program of the College of Liberal Arts. and
7. an accumulation of at least fifteen credits in honors-designated course work, including SOC 499, and the 400 -level Advanced Honors Seminar. For additional information on honors-designated courses available each semester, consult the University Schedule of Classes, or the Director of the Liberal Arts Honors Program (577-3030).

## Minor and Cognate Study

Minor Requirements: A minor in sociology is offered for students majoring in other fields. The minor requires at least twenty-one credits; course requirements are as follows:


Sociology as a Career Component: A good background in Sociology can be a valuable component of preparation for a variety of careers, professions, and occupations. The following information summarizes

[^73]some of these opportunities. Faculty Advisers in Sociology can provide additional informatin on these and other areas as well.

1. Human Services Work: Students whose occupational aspirations include working with families, or with men and women in various types of human services or therapeutic settings (Social Work, Nurisng, Education, Psychology, Law, Medicine) might consider electing one or more of the following courses: Sociology 340 (Exploring Marriage and Other Intimate Relationships), 446 (Women in Society), 540 (The Family), 541 (Marriage and Family Problems), 545 (Human Sexual Behavior and Society), 546 (Sex Roles: Being Men and Women), 587 (Violence in the Family), or 640 (Family Theories and Research).
2. Business: Students who are preparing for a career in business might consider electing one or more of the following: Sociology 330 (Social Institutions and Social Structure), or 563 (American Labor: Blue Collar, White Collar).
3. Inter-Group Relations: Any student whose future occupation will entail working with peoples of diverse ethnic and racial groups might be advised to consider taking one or more of the following courses: Sociology 558 (Ethnic Groups in Urban America), or 557 (Race Relations in Urban Society).
4. Crime and Criminal Justice: Students whose career goals are in the areas of criminal justice, police work, corrections, probation, law, or related fields might be advised to select their elective courses from among the following: Sociology 202 (Social Problems), 382 (Criminology: Society, Crime and the Criminal), 384 (Penology: Punishment and Corrections), 480 (Outsiders, Outcasts and Social Deviants), 581 (Law in Human Society), 583 (Juvenile Delinquency), 587 (Violence in the Family), or 686 (Organized Crime: Its History and Social Structure).
5. Work with Health Agencies or the Aged: Students who plan to work with the aged or in health care fields (social gerontology) might consider taking one of more of the following courses: Sociology 536 (Introduction to Medical Sociology), 576 (Society and Aging), or 677 (Sociology and Institutional Care).

## COURSES OF INSTRUCTION ${ }^{1}$ (SOC)

## 200. (SS) Understanding Human Society. Cr. 3

No credit after SOC 204. Analysis of basic sociological concepts and principles to give the student an understanding of the perspective that sociology brings to the study of human society.

## 202. (SS) Social Problems. Cr. 3

Consideration of major contemporary social problems which reveal structural strains, value conflicts, deviations and changes in society. Analysis of socio-cultural factors creating problems and of possible solutions.

## 204. (SS) Applied Approach with Data Analysis for Understanding

 Soclety. Cr. 3Analysis of basic sociological concepts and principles through the presentation of data; computer-aided analysis to demonstrate applied sociological perspective. Introduction to computers; students research data by computer analysis.(Y)
250. (U S 200) (SS) Introduction to Urban Studies. Cr. 4 Urban phenomena both past and present, including the quality and nature of urban life; major concerns of urban areas; perspectives and techniques of various urban related disciplines.
330. (SS) Social Institutions and Social Structure. Cr. 3

Prereq: upper division standing. Structure and process in society, institutions, communities, and organizations. Scientific analysis of organization, conflict, and change in the economy, government, religion, education, and family.
335. Religion and Society. Cr. 3

Objective analysis of the interrelations between religious phenomena and social institutions, social structure and behavior.
340. Exploring Marriage and Other Intimate Relationships. Cr. 3 Students examine, from a sociological perspective, issues concerning intimate relationships. Major emphasis on description and analysis of changes in monogamous marriage. Non-traditional marital forms also examined. Focus upon the intimate relationships as they relate to personal, functional concerns of the student.
351. The Nature and Impact of Population on Society. Cr. 3

Birth, death and migration investigated with respect to their social causes and consequences for society and human behavior. The population explosion and its implication for government policy. Recommended for students interested in urban studies, medicine, nursing, political science and history.
(B)
355. (ANT 355) (FC) Arab Society in Transition. Cr. 3

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.
382. Criminology: Society, Crime and the Criminal. (CRJ 385). Cr. 3
Criminality as a socio-legal phenomenon. A descriptive analysis of the various agencies of the criminal justice system: police, prosecution, courts, corrections. Interdisciplinary review of criminological thought and theory; methods of reporting and studying crime, victimology, crimes of violence, organized crime, and white collar crime.
384. (CRJ 230) Penology: Punishment and Corrections. Cr. 3

No credit after former SOC 584. Description and analysis of legal, social and political issues affecting contemporary correctional theory and practice. Topics include: history of corrections, function and social structure of correctional institutions, institutional alternatives including diversion, probation and parole. Field trips to institutions and community correctional settings normally required.
390. Directed Study. Cr. 1-3(Max. 6)

Prereq: written consent of full time sociology instructor. Open only to juniors and seniors with not less than sixteen credits in sociology, with a grade of A or B. For students who show evidence of ability and interest, and desire to do advanced reading. Part-time and student instructors are ineligible to supervise directed study.
405. Basic Sociological Theory. Cr. 3

Introduction to sociological theory from a general conceptual framework. Major concepts, theoretical postions and recent trends in theoretical sociology will be considered.
410. (SS) Social Psychology. Cr. 3

An introduction to the major issues in social psychology. Topics such as socialization, social perception, self-conceptions and social definitions of selves and situations.
420. Methods of Social Research. Cr. 3

An elementary research methods course that covers the process of doing social reseach, including research design, data collection techniques, processing and analysis of data, as well as the interpretation of data.
422. (CL) Computing Applications for the Social Sciences. Cr. 4 Prereq: introductory level course in one of the social sciences.

Fundamentals underlying application of computers in conducting social research: computer-aided statistical analysis, introduction to word processing, report writing, text editing, and software packages for the management of data sets and the calculation of statistics. (Y)
446. Women in Society. Cr. 3

In-depth investigation of the living and working conditions of women in the world today, with a particular emphasis on the impact of socioeconomic changes on the lives of women (including their relationships with men).
480. Outsiders, Outcasts and Social Deviants. (CRJ 480). Cr. 3 Definition and characteristics of behaviors which have, at times, been considered deviant, such as: criminality, mental illness, alcoholism, drug addiction, abortion, prostitution, and pornography. Interdisciplinary theories introduced to facilitate understanding of those behaviors, their diagnosis, management, control, and prevention.
499. Honors Thesis in Sociology. Cr. 3(Max. 6)

Prereq: sociology major; cumulative h.p.a. 3.0, 3.3 in sociology; written consent of thesis and honors advisers. Open to juniors and seniors. For students interested in pursuing an independent program of original research.
501. Selected Sociological Topics. Cr. 3
Topics to be announced in Schedule of Classes .
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.
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.
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.
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.
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.
550. Urban and Metropolitan Living. (U P 521). Cr. 3 Examination of the development and organization of urban living as it emerged from village to city to metropolitan regions. Consideration given to such topics as the causes of urbanization and its consequences for the ecological and social structure of the city, intergroup relations, crime and poverty in the city.

## 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.

## 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.
557. Race Relations in Urban Society. Cr. 3

Theoretical orientations applied analytically to enhance an understanding of the patterned structures of privilege in society which are based on race. Inequality, segregation-desegregation, pluralism; social structural frameworks; some attention to social-psychological aspects of topics such as prejudice and racism.
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.
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.
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.
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 deliquency. The juvenile justice system as distinguished from the criminal justice system.
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 will speak to class.

## 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.
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.
608. (PHI 523) Philosophy of Science. Cr. 4

Prereq: PHI 185 or PHI 186 or any course from the Phlosophical 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 .
628. Social Statistics. Cr. 4

Basic techniques for organizing and describing social data, measures of central tendency and dispersion, probability theory and hypothesis testing, tests of significance and confidence intervals, measures of association for two variables, analysis of variance.
(Y)
629. Advanced Social Statistics. Cr. 4

Prereq: SOC 628. Multiple and partial correlation and multiple regression, dummy variable analysis, analysis of covariance, causal models for multi-dimensional contingency tables, path analysis techniques, introductory factor analysis, Markov chains, selected additional topics.

## 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.
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.
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.
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)
658. Applied Sociology I: Policy Research and Analysis. Cr. 3 Prereq: graduate students or advanced social science undergraduates. The logic of applied sociological analysis, policy research design and ethical issues in applied social science. Critical analysis of specific projects and of contributions of related social science disciplines. Development of writing skills for policy makers.
(Y)

## 659. Applied Sociology II: Strategies for Changing Social Behavior. Cr. 3

Prereq: graduate students or advanced social science undergraduates. Analysis of theoretical and practical strategies for promoting the change of social behavior. Focus on behavior of the individual, small group, and community structural levels. Means of evaluating effectiveness of change strategies. Materials drawn from theory and practice in sociology and related social sciences.
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.

## 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.
686. Organized Crime: Its History and Social Structure. (CRJ 686). Cr. 3

Prereq: SOC 382. Open only to juniors, seniors and graduate
students. Analysis of the history and social structure of organized crime. Contemporary national and international forms of criminal enterprises.
(B)
694. (ANT 618) Theory and Problems of Emergent Countries. Cr. 3(Max. 6)
Prereq: SOC 200 or ANT 210. Underdeveloped and developing countries. Emergent nationalism and socio-cultural factors affecting change. Cultural, demographic, institutional, technological aspects.


## STATISTICS

In addition to the interdepartmental course described below, several specialized advanced courses in statistics are offered by individual departments:

```
ECO 410 - Economic and Business Statistics I
ECO 510 - Economic and Business Statistics II
ECO610 - Introduction to Econometrics
ECO710 - Econometrics I
ECO 711 - Econometrics II
ECO 810 - Advanced Econometrics
ECO }811\mathrm{ - Applied Econometrics
MAT 221 - Elementary Probability and Statistics
MAT 570 - Probability and Stochastic Processes
MAT 582 - Statistics I
MAT 583 - Applied Time Series
MAT 683 - Design of Experiments
MAT 770 - Advanced Probability Theory I
MAT 771 - Advanced Probability Theory II
MAT 780 - Statistics II
MAT 787 - Topics in Statistics
PSY 410 - Statistical Methods in Psychology
SOC 821 - Seminar in Methods of Social Research and Statistics
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For descriptions of these courses and others, see the respective departmental sections of this bulletin.

## COURSES OF INSTRUCTION ${ }^{1}$ (STA)

## 102. Elementary Statistics. Cr. 3

Prereq: one and one-half years high school algebra. Not to be counted as a mathematics course by mathematics majors. Student computer account required. Descriptive statistics, correlation and regression, notions in probability, binomial and normal distributions, testing hypothesis.

## WOMEN'S STUDIES

Office: 801 Mackenzie Hall

Director: Effie Ambler
Adviser: M. Marlyne Kilbey

## Co-Major Program

The Women's Studies Co-Major Program is designed to augment existing curricula and to stimulate development of courses and research within traditional disciplines. The aims of the program are: (1) to put women students in touch with their own historical, social, and cultural heritage; (2) to help them define their own values and goals through study of the contemporary environment and their place in it; (3) to open for all students hitherto neglected areas of study and research related to women within and beyond the traditional disciplines; (4) to relate the experience of various courses in a structure that has coherence and usefulness for the individual student; (5) to explore with students the contributions women have made to society, the arts, the sciences, and the human spirit.

The Program offers co-major and minor concentrations of study. The co-major is designed for students who wish both diversity and specialization from a selection of women's studies related courses that represent the full range of offerings in the humanities and social sciences, and to complete a substantial project in this major. The minor is intended for students whose programs are too demanding to accomodate the co-major requirements, but who wish to have a transcript designation in women's studies for professional or personal goals.

CO-MAJOR REQUIREMENTS consist of thirty-two credits including three core courses and twenty-four credits in elective courses. The core courses are as follows:

History 377, Women's Lives, Cr. 3 (Max. 6): an analysis of biographical materials, past and present, reflecting ordinary women's lives as shaped by their environment, how they have reacted creatively with it, how they have confronted problems, and how their values, aspirations, and even failures can inform the lives of students today. Students may elect the course to a maximum of six credits, three of which fulfill the core requirement and three of which may be applied to group (1) of the elective portion of the co-major.

Sociology 446, Women in Society, Cr. 3: in-depth investigation of living and working conditions of women in the world today, with emphasis on the importance of socio-economic changes.

An independent study, Cr. 4, is required, to be arranged with an instructor in the student's major field during the senior year. The student should devise and complete a project using the materials and methods of the major field to address a topic in women's studies. Usually, but not always, a paper or report will result from the project. All arrangements for this course are made by the student, who is also responsible for notifying the Coordinator as to the subject of the project.

Electives must be chosen from the courses listed below or any new courses approved by the Directors of the Program. Elective credit must be distributed so as to satisfy the following conditions:

1. at least nine credits in women's studies courses from the fields of anthropology, political science, psychology, and sociology.
2. At least nine credits in women's studies courses from the fields of art history, black studies, classics, English, philosophy, romance and Germanic languages, and speech communication.

## Courses in Women's Studies

Credits
ANT 424 - Cross Cultural Study of Women ..... 3
BKS 511 - Black Women in America .....  3
ENG 257 - (IC) Literature By and About Women: Literature \& Writing ..... 3
ENG 503 - Topics in Women's Studies ..... 3
FRE 290 - Studies in French Literature (when appropriate). .....  3
GER 290 - Studies in German Literature (when appropriate) .....  3
HIS 325 - The Family in History. ..... 3
HIS 520 - Women in American Life and Thought ..... 3
PHI 110 - Contemporary Moral Issues (when appropriate) ..... 3
PHI 111 - Ethical Issues in Heath Care ..... 3
PS 504 - American Political Reform Movements. ..... 4
PS 552 - Politics and the Family. ..... 4
PSY $260 \rightarrow$ Psychology of Social Behavior. .....  4
PSY 325 - Psychology of Women ..... 3
PSY 338 - Human Sexuality ..... 3
PSY 346 - Psychology of Adolescent Behavior and Development ..... 3
PSY 348 - Parent-Child Interaction across the Lifespan ..... 3
PSY 568 - Social Psychology of Personality ..... 3
PSY 580 - Maturation and Development of the Individual .....  3
PSY 640 - Approaches to Child Rearing ..... 3
PSY 642 - Psychology of Infant Behavior and Development (PSY 343) ..... 3
SOC 340 - Exploring Marriage and Other Intimate Relationships ..... 3
SOC 446 - Women in Society. ..... 3
SOC 540 - The Family. ..... 3
SOC 541 - Marriage and Family Problems ..... 3
SOC 545 - Human Sexual Behavior and Society. ..... 3
SOC 546 - Sex Roles: Being Men and Women ..... 3
SOC 587 - Violence in the Family. ..... 3
SOC 640 - Family Theories and Research ..... 3
SPA 290 - Studies in Spanish Literature (when appropriate) ..... 3
SPC 220 - Interpersonal Communication ..... 3
SPC 501 - Psychology of Human Communication. ..... 3
SPC 617 - Theories of Interpersonal Communication ..... 3
Minor Requirements consist of eighteen credits distributed as follows:
W S 301 - Interdisciplinary Introduction to Women's Studies. ..... 3
SOC 446 - Women in Society. ..... 3
PSY 325 - Psychology of Women ..... 3
Women in history (elective in black studies, classics, or history; see list above)Women and literature (elective in English or foreign languages in translation)One elective in another discipline (see list above)
All-departmental courses included in the women's studies program may also count toward satisfying a departmental major or appropriate group requirements. Each semester the directors of the program prepare a list of courses offered in the following term to aid students in making selections; it is available in the offices of the Department of English and the Department of Psychology.

## COURSE OF INSTRUCTION (W S)

301. Interdisciplinary Introduction to Women's Studies. Cr. 3-4 Introduction to famous texts in feminist thought, and a survey of the contributions to the field of women's studies from the behavioral sciences, history, humanities, and the social sciences. (W)

## INTERDISCIPLINARY LIBERAL ARTS

## COURSES OF INSTRUCTION' (I D)

## 095. Cooperative Work Experience. Cr. 0

Offered for S and U grades only. No degree credit. Participation in a cooperative work study situation.

## 101. (BKS 101) Dimensions of the Black Experience: An Introduction. Cr. 3

Interdisciplinary approach to black studies, exploring several broad issues, topics, theories, concepts and perspectives which describe and explain the black experience in America.
201. (BKS 201) Afro-American Culture: Historical and Aesthetic Roots. Cr. 4
Core requirement for black studies co-major. Examination of the historical and aesthetic bases of a variety of forms of cultural reflection - language, literature, music - of the black experience in America.
(T)
221. (BKS 221) Contemporary Black Social and Political Thought: Theory and Practice. Cr. 4
Prereq: I D 101 or consent of instructor. Core requirement for Black Studies Co-Major. Surveys the major social and political themes in the black experience with emphasis on the black movements of the 1950s-1970s from a dialectical and social movements model.
301. (BKS 301) Afro-American Culture: Development and Transformation. Cr. 4
Theoretical perspectives on development of Afro-American creative culture and expression; emphasis on modern transformations and contemporary forms.
321. (BKS 321) The Black Community and Public Policy. Cr. 3 Core requirement for black studies co-majors. Core requirement for black studies co-major. Identifies and explores questions of black community interests, raised in relation to important issues in several areas of public policy - education, employment, equal opportunity, development of political and social institutions - which have significant impact on the black community.
(T)

## 511. (BKS 511) Black Women in America. Cr. 3

Prereq: I D 201 or 221 or consent of instructor. Examination of the historical, social, political and economic oppression of black women in America: racism; sexism, marriage, motherhood, feminism, the welfare system, implications for advancement in the black community.
(F)

## 513. (BKS 513) The Black Family. Cr. 3

Prereq: one 200-level Black Studies course, or consent of instructor. Survey and analysis of historical and social issues relative to the study of the black family.
531. (BKS 531) Special Topics in Black Studies. Cr. 3

Prereq: I D 201 or 221 or consent of instructor. A seminar for investigating special topic areas related to the black experience - such as the black family, the black woman, and male/female relationships among black people - which emerge from contemporary or historical issues and conditions.

[^74]591. (BKS 591) Field Work in the Black Community. Cr. 4-12

Prereq: two black studies courses and written consent of instructor. Offered for undergraduate credit only. Field placement in a variety of possible settings within community-based organizations and institutions which deal substantially with the concerns of the black community.
690. (BKS 690) Directed Study in Black Studies. Cr. 3-12

Prereq: I D 201 or 221 and written consent of instructor. Reading and research projects.


## Library Science Program

DEAN: PETER SPYERS-DURAN

## Foreword

The field of library and information service is experiencing dramatic growth and change. The future is bright for those entering the information field, as jobs are available and salaries are on the rise. Undergraduates can begin to prepare themselves for the challenges of the information age by enrolling in library science courses to gain library and research skills which will assist them in their undergraduate studies, and to prepare for graduate work and admission to the graduate Master of Science in Library Science degree program.

Approximately 100,000 libraries in the United States employ 140,000 professionals. The ALA-accredited M.S.L.S. degree is internationally recognized as the first professional degree in the field. Other individuals use their library and research skills in allied areas of information service outside the traditional library setting. In the next decade, those with the right credentials will have a wider than ever choice of where and how to apply their skills, including traditional library settings and information centers within business, law, medicine, publishing, government, archives and museums, communications and media, engineering, and academic environments.

## History

The Library Science Program at Wayne State University traces its origins to 1918, at which time courses in school librarianship were offered to elementary teachers in the Detroit Public Schools by the Detroit Normal Training School. The Training School later became the Detroit Teachers College and 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 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 Library Science was created to serve those practicing librarians who wished to update their knowledge and professional skills. The Library Science Program also offers a certificate program in archival administration, offered in conjunction with the History Department of the College of Liberal Arts.

Today the American Library Association-accredited Library Science Program is under the administrative jurisdiction of the Dean of University Libraries and Library Science, with degrees granted by the Graduate School of the University. 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.

Accreditation: The Library Science Program was first accredited by the American Library Association in 1967; the Program was again accredited by the Committee on Accreditation of the ALA in 1988.

## 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, educational, and political dimensions;
2. To identify the library's distinctive role among the communication agencies which share responsibility for the preservation and dissemination of the human record;
3. To identify the common properties of information that exist throughout disciplines as they relate to librarianship;
4. To identify and examine the concepts, structure, and organization of knowledge;
5. To select, acquire, organize, store, retrieve, and disseminate information and materials;
6. To apply the concept of information transfer to facilitate access to recorded knowledge;
7. 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;
8. To identify the needs of individuals and groups for library/information services, design plans, and implement programs that respond to identified needs;
9. To evaluate and utilize current and emerging technologies in the organization and retrieval of information;
10. To apply principles of effective management to the operation of library/information centers;
11. To examine, assess, and apply research in professional practice and to the solution of library/information problems;
12. To develop a personal philosophy of ethics, professionalism, and professional accountability;
13. To recognize the necessity for continuing involvement in professional education, in professional organizations, and in self-evaluation.

## Facilities

University Libraries: Wayne State University has five libraries with a total of well over two million books and twenty-three thousand current subscriptions to periodicals. The Purdy/Kresge Library complex houses all materials in the fields of business, education, humanities, and social sciences, as well as all general periodicals. This complex also contains the Media Library, including films and videotapes, audiovisual equipment, audiotapes, microfilms, microcomputers, and phonograph records; and the offices of the Library Science Program.

Computer science, engineering, life sciences, nursing, and physical science materials are housed in the Science and Engineering Library. Legal documents and related materials are located in the Neef Law Library. Health science materials are located in the Shiffman Medical Library.

The Walter P. Reuther Library of Labor and Urban Affairs is a rich source of archival materials. It includes the personal papers of many
urban leaders and is an important source of original data regarding Detroit, the auto industry and unionization.

The location of Wayne State University in the heart of Detroit's cultural center provides additional advantages to the library science student. Readily available to the University student is the main branch of the Detroit Public Library, the professional research library of the Detroit Institute of Arts, and the Detroit Historical Museum.

Computer Laboratory: The Library Science Program has its own microcomputer laboratory equipped with state-of-the-art personal computers. Students can access the University Libraries' mainframe computer and a variety of common library databases. Located in the Purdy/Kresge Library, the laboratory provides hands-on experience in accessing a variety of information retrieval systems, as well as other applications in library and information service.


## Undergraduate Program

Undergraduate students interested in preparing for a career as library/media specialists in elementary or secondary schools, or those Liberal Arts students interested in public, academic, or special library work, are eligible to take a limited number of courses in the Library Science Program. Undergraduates interested in enrolling in library science courses should consult with an adviser in the Library Science Program regarding admission requirements, sequence of courses, the curriculum, career planning, professional development, and job opportunities.

## Graduate Degrees and Certificates

*Master of Science in Library Science<br>* Specialist Certificate in Library Science<br>* Certificate in Archival Administration

## Faculty

Office: 106 Kresge Library; (313) 577-1825
Dean of University Libraries and Library Science: Peter Spyers-Duran Director of Library Science Program: Joseph J. Mika

## Professors

Robert Booth (Emeritus), Genevieve M. Casey (Emerita), Michael Keresztesi (Emeritus), Charles Churchwell, 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, Bor-sheng Tsai

## Adjunct and Cooperating Faculty

Donald Bissett, Professor, College of Education; John Childs, Professor, College of Education; Georgia Clark, Arthur Neef Law Library; Anaclare Evans, Purdy Library; Margery Long, Associate Professor, Archives; Geneveive Oldani-Caruso, Detroit Public Library; R. Craig Roney, Associate Professor, College of Education; Albert Stahl, Associate Professor, College of Education; Jacqueline Tilles, Associate Professor, College of Education; Faith Van Toll, Shiffman Medical Library

## FINANCIAL AIDS, ACTIVITIES AND AWARDS

## Financial Aid

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 University Libraries.

In addition to these placements, several area libraries offer paid and valuable pre-professional experiences. For a list of current opportunities, consult the Director of the Library Science Program.

## Library 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.

## 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.

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.

American Library Association-Student Chapter: Chartered by the American Library Association in 1988, the Chapter sponsors professional activities, promotes professionalism, and is open to all student ALA members.

## COURSES OF INSTRUCTION ${ }^{1}$ (L S)

601. Introduction to the Information Profession. Cr. 3

The development and place of libraries in society; objectives, functions of and trends in major types of libraries.
611. Reference and Bibliographic Database Services. Cr. 4 Reference function of the library; major titles in the reference collection with criteria for their evaluation; sources of continuing knowledge of reference materials; online reference sources, systems and searching; includes laboratory sessions.
621. Technical Services in Libraries. Cr. 3

Survey of objectives and methods of acquisition, classification, cataloging, preparation of books and related materials in libraries.
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.

## 636. (I T 511) Educational Technology. Cr. 2

Technological applications to education, training, and instruction within educational, industrial, and human services settings. Students examine, develop, and/or evaluate unique instructional programs. For educators and non-educators interested in exploring technological applications in education.
637. (I T 512) Instructional Materials Workshop. Cr. 1-3(Max. 3) Design and development of audiovisual materials for use in educational, industrial, and/or human services programs. Students produce an audiovisual presentation.
638. (I T 510) Using Audiovisual Methods, Materials and Equipment. Cr. 2
Survey of educational media, methods, and materials. Principles of systematic instructional design applied to the design of group-based and individualized instructional materials. Operation of common audiovisual equipment; review of innovative instructional practices; computer applications and learning games.

## 651. (ELE 722) Survey and Analysis of Literature for Younger

 Children. Cr. 3Intensive 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.
( $\mathrm{F}, \mathrm{S}$ )
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.
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.
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.

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# College of Lifelong Learning 

DEAN: ROBERT CARTER

## Foreword

The College of Lifelong Learning (CLL) is principally responsible for outreach programs and off-campus course offerings of CLL and extension courses of other schools and colleges of Wayne State University. Through its Division of Metropolitan Programs and Summer Sessions, the College also administers the University Spring/Summer term. 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: persons pursuing university degrees; working adults who are unable to accomodate 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; 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. Through the Division of Metropolitan Programs and Summer Sessions, CLL offers off-campus (extension) 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 Division of Community Education helps adult students plan a university education by evaluating their preparedness for college and providing remedial and tutorial assistance where needed. Counselors of this Division work closely with students in program planning and the selection of classes.

## Class Schedules and Registration

A comprehensive schedule of CLL courses and programs is issued each semester. Individuals wishing to be added to the mailing list should contact the CLL Marketing and Public Relations Office, 6001 Cass Ave., Detroit Michigan 48202.

Registration materials may be presented at any CLL center or at the CLL Registration Services Office, 6001 Cass Ave., Detroit, Michigan 48202 , on the main campus. If registering by mail, materials and class schedules may be requested from this office; telephone: 577-4671.

For complete information regarding academic rules and regulations of the University, students should consult the General Information section of this bulletin, beginning on page 5. Additions and amendments in the following material pertain to the College of Lifelong Learning.

## 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
Downriver Center
Schafer High School 15100 Northline
Southgate, MI 48195
Telephone: 284-5335, 577-4680
Eastside Detroit Center
3127 E. Canfield
Detroit, MI 48207
Telephone: 577-4701
Harper Woods Center
Bishop Gallagher High School
19360 Harper Avenue
Harper Woods, MI 48225
Telephone: 881-2438

Northeast Center
St. Basil School
22860 Schroeder
East Detroit, MI 48201
Telephone: 771-3730, 577-3590
Northwest Activities
Center
18100 Meyers Road
Detroit, MI 48235
Telephone: 577-2937
Southfield Center
25610 W. Eleven Mile
Southfield MI 48034
Telephone: 358-2104, 577-3592
Sterling Heights Center
Heritage Junior High School
37400 Dodge Park
Sterling Heights, MI 48077
Telephone: 978-7881, 577-4470

Degree Programs

## Bachelor of General Studies

## Bachelor of Technical and General Studies



# DIVISION OF COMMUNITY EDUCATION 

Associate Director: Mary C. Dickson

## Instructional Support

English: Julie Mix; Mathematics: Fred Labafinejad

## Academic Advisers

Dannie Brown, Pamela Dale, Laverne Jimerson, Satrina John
The Division of Community Education (DCE) is an open-admissions educational outreach program. Founded in 1969, this program provides access into baccalaureate degree programs for individuals who often presume that their prior educational performance would deny them access to a university education. Intensive counseling, special remediation programs, and financial aid are available for program participants.

Participants in the Community Education Program are individuals who, though otherwise inadmissible to Wayne State University, may become eligible to transfer into other colleges or schools within the University after satisfactory completion of this twenty-four to thirty credit program. This course of study itself does not lead to a degree, but assists students in entering and completing degree programs offered by other schools and colleges in the University.

Admission Requirements: This program has an open admissions policy with no restrictions on age or previous academic performance. The minimum requirement is a General Equivalency Diploma (GED) or high school diploma. Under certain circumstances, individuals without these credentials may be considered admissable.

Prior to admission, participants are required to take a placement test. The results of this examination are used to evaluate academic needs and career potentials and to assist students in choosing curricula. These results are also used to plan the tutorial and remedial support which may be recommended to enhance the student's academic performance.

Application: Admission applications may be submitted at any time during the academic year. Applications should be submitted approximately two months prior to anticipated enrollment.

Program Requirements: To be eligible to transfer from the Division of Community Education into other colleges within the University, students must complete either twenty-four credits with a ' $B$ ' (3.0) average or thirty credits with a ' $C$ ' (2.0) average.

Advising is a major component of the Division of Community Education Program. DCE students are required to utilize the counseling/advising service; failure to comply may result in dismissal from the program. Students are assigned academic advisers at the centers nearest to their residence. The advisers provide assistance with course selections needed to fulfill program and subsequent degree requirements.

Financial Aid: Those interested in the Division of Community Education Program may apply for federal, state, or University grants using applications available from College of Lifelong Learning centers, the DCE office, or the University Financial Aids office.

# METROPOLITAN PROGRAMS AND SUMMER SESSIONS 

Associate Director of Metropolitan Centers and Registration: Kristopher Krzyzanski<br>Associate Director of Program Administration and Summer Sessions: Donna Sottile<br>Associate Director of Noncredit Career and<br>Professional Development Programs: Mary Catherine Urick

## Center Managers

Susan English, W. Kathryn Flack, Sharon O'Brien, Linda Robertson, Barbara Roseboro

## Program Coordinators

James Couto, Robert Erickson, Katherine Place, Lorraine Serra, William Slater, Fredrick Smith, Cynthia Ward

## Academic Advising

## Irene Gordon

The Division of Metropolitan Programs and Summer Sessions is responsible for making available off-campus 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. Courses carry full university credit and many 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 noncredit career and professional development courses. The Visitor's Program makes it possible for interested community members to enroll in a wide variety of Wayne State credit courses on a noncredit basis at reduced tuition rates. Program centers are maintained at convenient locations (see page 334).

## 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. Guest students should consult with their home institution when formulating their registration plans.

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, credits earned in this status may be applied toward degrees, subject to the approval of the admitting school or college. Students are advised to consult the specific degree program requirements and are urged to process formal application and admission documents as soon as possible.

## Advising

Advising services for students in the Division of Metropolitan Programs are provided by CLL academic advisers and the managers of the College's centers. Students who do not have formal matriculated status in the University are especially urged to confer with an adviser before registration. Skilled advisers offer assistance with educational problems or degree objectives. Appointments may be arranged by telephoning any conveniently-located center or the Registration Services Offics.

## 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 the Division of Metropolitan Programs and Summer Sessions of 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.

School of Business Administration courses in the 600-609 series, and all 700 -level courses, are open only to students holding matriculated graduate status at Wayne State University.

Education: Bachelor's, master's, and doctoral programs are offered at CLL extension centers; in-service courses and programs are offered at the request of local schools and districts. for information on current and upcoming programs, contact the Education Coordinator: 577-4682.

Engineering: Courses leading to a bachelor's degree with a major in electrical/electronic engineering technology are scheduled at the Northeast Center. Courses leading to a bachelor's degree with a major in mechanical engineering technology are scheduled at the Downriver Center. Periodically other courses from various departments in the College of Engineering are scheduled at CLL Centers. For specific information contact the Engineering Coordinator: 577-4682.

Fine and Performing Arts: Undergraduate courses in music, art, and dance are offered at most off-campus centers.

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.

Library Science: Graduate courses in library science are available at several CLL extension centers.

Nursing: Bachelor's and master's courses are offered at several locations, including Macomb County Community College.

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. Professional continuing education programs are also offered.

Urban, Labor and Metropolitan Affairs: Introductory and advanced courses are scheduled at most CLL centers.

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.

Travel Study: Travel-study programs are offered through CLL for the sponsoring schools and colleges. Times and locales vary each year; for information, telephone: 577-4671.

## Noncredit 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 sceduled both on and off campus for all interested individuals. Many of the noncredit professional education courses award Continuing Education Units (CEUs). The CEU is a nationally-recognized unit of measurement of professional-development education, and many professions require mandatory continuing education.

## 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 CLASSES

Since 1984 Wayne State University has operated a Personal Computing Center in Southfield. Eighteen personal Computers, experienced faculty, instruction on best-selling software, hands-on course presentation, and qualified laboratory assistance ensure a degree of quality found among few universities or commercial computer programs. A twelve clock-hour introductory course in personal computer use is offered; in addition, classes are available in spreadsheet, word processing, and data-base software programs. A second center is located in Sterling Heights.

## 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; national certifying examinations covering the subject matter of each of the ten courses are given in January and June.

## VISITOR'S PROGRAM

Individuals interested in taking a credit 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 Visitor courses may be completed by mail or telephone through any CLL center or the campus CLL Noncredit Registration Services office.

## CONTRACT PROGRAMMING

Courses are provided through CLL at business or organization sites for employees or members. Custom-designed programs for employee education and skills development may be arranged at a location designated by the employer. Courses for academic credit or for continuing education units (CEUs) can be made available.

## Registration Services

## Coordinator: Kristopher Krzyzanski

Office: Room 329, Criminal Justice Building, 6001 Cass Avenue, Detroit, Michigan 48202; telephone: 577-4671

Credit Registration: Registration for off-campus credit 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 the Division of Metropolitan Programs and Summer Sessions 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 Registration: Noncredit classes have no admission requirements and are open to all interested individuals. Course fees, refunds, and transfer policies vary with the offering. Registration for noncredit and professional development classes may be made by telephoning 577-4710, by mail, or in person at the Noncredit Registration Office, Room 215, 6001 Cass Avenue.

CLL also offers both credit and noncredit courses on alternative schedules, such as seminars and workshops, that are convenient to particular audiences.

## 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 conjunctin 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 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
Interim Associate Dean/Director ..... 577-4627
DIVISION OF COMMUNITY EDUCATION
Associate Director. ..... 577-4591
Counseling Services ..... 577-4695
DIVISION OF METROPOLITAN PROGRAMS AND SUMMER SESSIONS
Associate Director, Off-Campus Centers and Credit Registration577-4682
Extension Credit Registration Information/Academic Advising ..... 577-4672
Birmingham Center ..... $.577-3605$ or 642-2661
Downriver Center ..... $.577-4680$ or 284-5335
Eastside Detroit Center ..... 577-4701
Harper Woods Center ..... 771-3730
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
Associate Director, Program Administration and Summer Sessions ..... 577-4682
Business Administration. ..... 577-4682
Education ..... 577-4616
Engineering ..... 577-4682
Fine and Performing Arts ..... 577-4682
Health and Physical Education. ..... 577-4616
Liberal Arts. ..... 577-4682
Library Science ..... 577-4682
Nursing ..... 577-4616
Pharmacy and Allied Health ..... $57-4616$
Social Work ..... 577-4616
Telecourses ..... 577-4682
Urban, Labor and Metropolitan Affairs ..... 577-4682
Associate Director, Noncredit Career and Professional Development Programs ..... 577-4665
Career and Personal Development ..... 577-4665
Certified Employee Benefit Specialist Program ..... 577-4665
Personal Computing Centers
577-4665
Visitor's Program ..... 577-4665
DIVISION OF MARKETING
AND PUBLIC RELATIONS
Director ..... 577-4597

# UNIVERSITY STUDIES WEEKEND COLLEGE 

Office: Fourth Floor, Criminal Justice Building, 6001 Cass Avenue, Detroit, MI 48202<br>Interim Associate Dean and Director: Roslyn Schindler

## Professors

A. Ronald Aronson, Jerry G. Bails, Martin Glaberman, Clifford L. Maier, Richard Raspa, Rolland Wright

## Associate Professors

Eric A. Bockstael, David Bowen, Mary Lee Field, Gloria House, Julie T. Klein, Guerin C. Montilus, Roslyn Schindler, Norma Shifrin, Francis Shor, Roland Wacker

## Assistant Professors

Sandor Agocs, Robert L. Carter, Peter Friedlander, Andre Furtado, Theodore Kotila, Penelope Majeske, James Michels, Saul Wineman

## Degree Programs

Bachelor of General Studies

## Bachelor of Technical and General Studies

The curricula leading to the bachelor's degrees offered by CLL enable students to concentrate on a single broad theme each semester concurrent with the acquisition of a comprehensive general education. Each theme is presented by way of three distinct but coordinated types of courses using the following teaching methods:

Workshop Courses in the evenings provide after-work classroom opportunities for students to attend lectures and exchange ideas with professors and other students. Workshops meet one evening a week from 6:00 until 10:00 p.m. at neighborhood locations throughout southeast Michigan. Morning workshops are held on the main University campus and at selected neighborhood locations for persons wishing to study during the day. Completion of each workshop earns four credits.

Television Classes provide opportunities to complete most of the requirements for a course at home. Programs are broadcast over WTVS, Channel 56, and on cable via the College Cable Network and The Working Channel. Each is repeated several times; many adult learners choose to record them on video tape for greater convenience or to allow repeat viewing. Sessions providing the opportunity to discuss course content are held separately or in conjunction with workshops. Completion of each CLL television course earns three credits. Additionally, students may earn up to eight elective credits through independent study television courses developed by the International University Consortium and available for local viewing.

Conference Courses are held on the main campus of the University and provide special opportunities to hear a variety of speakers, including authorities on issues of vital contemporary interest. Together, students discuss and debate issues of immediate and long-term significance. Most conferences meet throughout the day on Saturday and Sunday three times each semester and earn three credits.

Most University Studies/Weekend College Program (US/WCP) students are able to complete three courses per semester, one from each of the above instructional formats, and to fulfill the requirements for a

Bachelor of General Studies degree in three to five years or less, or for a Bachelor of Technical and General Studies degree in two or three years. Students who need reduced credit loads to accomodate scheduling problems and/or personal responsibilities are encouraged to proceed at a slower pace.

## Bachelor of General Studies

This is a four-year interdisciplinary general studies degree program. The curriculum, organized to maximize related course sequences, focuses on historical, contemporary, and cross-cultural issues in the humanities, social sciences, natural sciences, and technology. Courses place special emphasis on critical thinking and analysis, writing ability, and research skills. In its concern with the development of humanistic and social consciousness, as well as science and technology literacy, this program draws upon the maturity and experience of the adult student.

Admission Requirements: Students must have earned a high school diploma or completed a General Equivalency Diploma (GED), and must be at least 21 years of age or have graduated from high school at least four years previously. Students who have completed an Associate of Applied Science degree are not restricted by these requirements. Admissions exceptions may be granted by the Associate Dean for Adult Degree Programs.

DEGREE REQUIREMENTS: Candidates for the Bachelor of General Studies degree must complete 120 credits including satisfaction of the University General Education Requirements (see below and page 20) and the credit distribution requirements as stated below. Note: Students not subject to the General Education Requirements (as described on pages $20-24$ ) must satisfy the University English and mathematics proficiency requirements, and the requirement in American government (see pages 24-27). Many requirements may be fulfilled by transfer credit earned at other accredited colleges and universities for courses in the fields of social science, humanities, and science/technology for which CLL subject area codes (GSS, GUH, and GST) are cited among the distribution requirements. Students should consult an adviser regarding the applicability of transfer credit to these general subject areas. Students may apply a maximum of sixty-four credits transferred from a community college or a maximum of eighty credits transferred from a four-year college to this degree, however, no more than eighty credits can be transferred from any combination of sources.

## Credit Distribution Requirements

LOWER DIVISION: In this phase students typically earn ten credits per semester, including a weekly workshop (four credits), a television course (three credits), and a weekend conference course (three credits); however, students may enroll for more or fewer credits per semester. Students need not pursue lower division course work in any specified order, but it is advisable to complete the required credits in one sequence before beginning another. Course sequences are defined as groups of three courses numbered 201-203, 231-233, or 271-273 within any CLL subject area code.

Credits
GIS 203 - Orientation to Interdisciplinary Studies: Concepts \& Methods..................... 2


Science and Technology Electives (GSD).........................................................................
UPPER DIVISION: In this phase students typically earn eleven credits per semester: a Foundations of Knowledge workshop (four credits), a weekend conference course (three credits), and a senior essay/project or senior seminar course (four credits). These are all CLL courses and are part of the residency requirement for which NO transfer credit is applicable.
Foundations of Knowledge (GIS) ..... 14
Senior Essay/Project or Seminar (AGS) .....  8

ELECTIVES (Thirty-eight Credits): Students may choose electives for career advancement, preparation for graduate school, or for personal satisfaction. Electives may be chosen from within the CLL course offerings, from other colleges of Wayne State University, or from other accredited institutions. Fifteen of these credits must be earned at the 300 level or above.

No more than twenty-nine semester credits in course work taken through the School of Business Administration may be applied toward the B.G.S. degree.

## - Capstone Program

This program is designed to enable holders of two-year associate of applied science degrees to earn four-year degrees by providing two years of general education to supplement two years of specialized technology course work. The capstone program itself consists of sixty-four credits of interdisciplinary general education, training in fundamental skills (writing, oral communication, critical analysis, computation, and research), and opportunities for more advanced study in areas of special interest.

Admission Requirements: Applicants must have an associate of applied science degree from an accredited college.

DEGREE REQUIREMENTS: Candidates in this program leading to the Bachelor of General Studies degree must complete 128 credits (forty of which must be earned as CLL resident credit), with a maximum of sixty-four credits transferrable from the associate degree level. Transfer credit may be allowed for requirements in social science, humanities, and science/technology, but NOT for the Foundations of Knowledge Sequence (GIS) or AGS 492 and GIS 308 cited below. The 128 credits must include satisfaction of the University General Education Requirements (see below and page 20) and the following distribution requirements. Note: Students not subject to the General Education Requirements as described on pages $\mathbf{2 0 - 2 4}$ must satisfy the University English and mathematics proficiency requirements, and the requirement in American government (see pages 24-27).

## Capstone Program Credit Distribution Requirements

## ASSOCIATE DEGREE TRANSFER CREDIT (Sixty-four Credits)

INTERDISCIPLINAR Y STUDIES (Forty Credits)
Credits
GIS 308 - Topics in Interdisciplinary Studies ..................................................... 4
GIS 151 - (BC) Written Communication Skills.................................................... 4
Social Science Electives (GSS)......................................................................... 7
Humanities Electives (GUH) ............................................................................. 7
Science and Technology Electives (GSD)............................................................ 7
Foundations of Knowledge Sequence (GIS) ........................................................ 7
AGS 492 - Senior Capstone Essay/Project........................................................... 4
ELECTIVES (Twenty-four Credits): Students must have a total of at least thirty-two credits of upper division course work, thus, seventeen of these elective credits must be at the 300 level or above. Courses may be chosen in a technical area, general studies, or a combination of these, depending upon the student's particular interests.

## Bachelor of Technical and General Studies

This is a capstone program designed for graduates of two-year technical, vocational, and professional associate of applied science (or equivalent) degree programs. The curriculum provides the opportunity to enhance prior technical or professional training with advanced course work from other schools and colleges of Wayne State

University and to supplement specialized concentrations of study with interdisciplinary general education offered by the College of Lifelong Learning.

Admission Requirements: Applicants to this program must have earned an associate of applied science degree or its equivalent from an accredited college.

DEGREE REQUIREMENTS: Candidates for this degree must complete 128 credits (of which forty must be CLL resident credit), with a maximum of sixty-four credits transferred from an associate degree program. The 128 credits must include satisfaction of the University General Education Requirements (see below and page 20) and the credit distribution requirements cited above under the Bachelor of General Studies Capstone Program, with the following exception for the twenty-four elective credits: for the technical studies degree, this elective credit must be used to develop a coherent sequence of broad, cognate, or specialized courses reflective of the student's technical, vocational, or professional field, or in an applied area which enhances prior training. Seventeen of these credits must be at the 300 level or above.

## College of Lifelong Learning Courses Satisfying General Education Requirements

The following US/WCP courses have been approved to fulfill the University General Education Requirements:

## Competency Requirements

| Basic Composition. | GIS 151 |
| :---: | :---: |
| Intermediate Compositio | AGS 491 |
| Writing-Intensive Course. | . AGS 496 |
| Oral Communication.. | GIS 156 |
| Computer Literacy | ..GST 271 |
| Critical Thinking. | GIS 326 |

Critical Thinking. ..... GIS 326
Group Requirements
Life Science ..... GST 202
Physical Science. ..... GST 232
Historical Studies ..... GIS 316
Social Science ..... GSS 271
American Society/Institutions. ..... GSS 151
Foreign Culture ..... GIS 341, GIS 343
Visual and Performing Arts ..... GUH 273
Philosophy and Letters ..... GUH 271

## Academic Procedures

Fees: Students in the US/WCP pay tuition according to the regular University fee schedule (see page 16 ).

Registration: Each student must register prior to attending class. Toward the end of each semester, couselors visit US/WCP classes to register students for the following term. Students are notified by mair of the exact dates for in-class registration, and registration forms may be returned by mail. Any student not registered during in-class registration sessions may register at the CLL Registration office or at any CLL center.

Orientation: During each semester, new students are required to participate in student orientation conferences where the baccalaureate degree program is fully explained through lecture presentations, group discussions, films, and slides.

Residency Requirement: An applicant for the degree of Bachelor of General Studies or Bachelor of Technical and General Studies must complete at least forty credits in University Studies/Weekend College.
courses, distributed according to specific degree requirements.
Transfer of Credit: Credit for courses taken at community colleges and other accredited institutions may be transferred as applicable to the bachelor's degree programs, provided that (1) the student has been admitted to the program, and (2) the grades earned for courses have been satisfactory (' C ' or better). A maximum of sixty-four semester credits or ninety-six quarter credits may be transferred from a community college. A maximum of eighty credits may be transferred from a four-year college or a combination of two-year and four-year colleges. Elective credit will be granted for successful completion of CLEP tests.

Probation: A student whose work falls below a 2.0 honor point average will be placed on probation and an academic hold will be placed on his or her academic record. The student will then be required to obtain permission from a US/WCP counselor before registering again. Such permission will be granted only after an interview.

Counseling: The counselors in the Division of Student Services are available to provide a broad range of information and assistance concerning University programs and various academic regulations. Students in the US/WCP arrange programs of study and register for their courses with a counselor each semester.

Financial Aid: Financial assistance is available on a limited basis to help students meet educational expenses. Interested students should contact the US/WCP office, or the University Office of Scholarships and Financial Aids, 222 Administrative Services Building.

## COURSES OF INSTRUCTION ${ }^{1}$

## General Science and <br> Technology (GST)

51. Practical Mathematics: Concepts and Applications. Cr. 3 Prereq: failure of mathematics proficiency test. No degree credit. Offered for $S$ and $U$ grades only. Review of concepts involving arithmetic, and algebra and algebraic equations, such as number systems, units conversions, ratio and proportion, exponents and radicals, and linear equations; word problems emphasized. Elementary geometry, interpretations of graphs, and probability.
(F,W)
52. (GUH 183) The Sciences and Humanities: Understanding the Human Condition. (GSS 183). Cr. 3
Registration restricted to one time only in each area: GUH, GSS, GST. Interdisciplinary conference course, meeting periodically on weekends during the semester, concerned with issues and problems which may usefully be treated from the viewpoints of the humanities, the social and natural sciences. Topics to be announced in Schedule of Classes.
53. Seminar in Interdisciplinary Science and Technology. Cr. 4-12
Selected studies in science and technology approached from an interdisciplinary perspective. Seminars may include: a practical and theoretical guide to the human body; geology and geography of Michigan; and psycho-chemical, psychosomatic and mental illness. Topics announced each semester.
54. Science and Technology: Directed Study. Cr. 2-4 (Max. 12)

Prereq: consent of instructor. Directed study supervised by a faculty member; appropriate if no course of instruction available in desired subject area.
201. Life and the Environment. Cr. 3

Critical health issues relevant to an industrialized society form the basis of this workshop course: the ecological and ethical factors associated with health in an urban context.
202. (LS) Changing Life on Earth. Cr. 4

Material fee as indicated in Schedule of Classes. The living world in context of theory of evolution; relations between physical and living worlds, and how humans have influenced them. Laboratory covers molecular genetics, adaptation, and population dynamics.
203. Conference on Biomedical Issues. Cr. 3

Semester-long course with periodic weekend sessions. Topics may include: aging and death; the delivery of health care; health and disease, and bioethics. Topics and dates announced each semester.
231. Energy Needs and Modern Society. Cr. 4

Workshop course leads students to consider problems and exercises concerned with energy that focus on the experimental approach to problem-solving, developing mathematical, reading and analytical skills and exploring fundamental principles of the concept of energy.
232. (PS) Energy, Technology, and Society. Cr. 3

Television course. Nature and forms of energy and energy transformations; emphasis on the physical sciences.
233. Current Issues in Energy Policy. Cr. 3

Semester-long course with periodic weekend sessions. Topics may include: nuclear energy, nuclear waste management; food technology and agriculture; solar energy, and alternative energy sources. Dates and themes announced each semester.
271. (CL) Computers and Society. Cr. 4

Computer technology as a case study of the interaction between technology and society; computer literacy and programming emphasized. Workshop course.
272. Values, Technology, and Society. Cr. 3

Television course. History of techno-social change, impacts of new technics, international aspects of technology, the nature and use of models, changes in work and leisure, and theoretical analysis of technological change.
273. Conference on Socio-Technological Issues. Cr. 3

Semester-long course with periodic weekend sessions. Conference themes and dates announced each semester.
371. Techno-Social Systems and Human Values. Cr. 4

Prereq: 8 credits in General Science and Technology courses or equiv., or consent of instructor. Technology as a human activity reflecting and shaping society's needs, desires and values. Multi-disciplinary approach with case studies in technological development used to study history and evolution of technology, especially in contemporary life.
${ }^{1}$ See page 433 for interpretation of numbering system, signs and abbreviations

## General Social Sciences (GSS)

## 151. (AI) American Political Development. Cr. 4

Survey of major developments in American political institutions and ideas; analysis of the curent operation of the national government. Workshop course.

## 152. Congress: We the People. Cr. 3

Telecourse: Individuals, interactions, organizations, and processes of the United States Congress. Topics include: constitutional roots of congressional powers and institutions; historic development, growth and change in congressional powers, organizations, and personnel; relationships of Congress with other branches of government.
153. The Politics of Contemporary America. Cr. 3

Semester-long conference course with periodic weekend sessions. Analysis of specific political, economic, and diplomatic issues confronting contemporary America. Specific theme each semester.
183. (GUH 183) The Sciences and Humanities: Understanding the Human Condition. (GST 183). Cr. 3
Registration restricted to one time only in each area: GUH, GSS, GST. Interdisciplinary conference course, meeting periodically on weekends during the semester, concerned with issues and problems which may usefully be treated from the viewpoints of the humanities, the social and the natural sciences. Topics to be announced in Schedule of Classes.
186. Seminar in Interdisciplinary Social Science. Cr. 4-12

Selected studies in social science approached from an interdisciplinary perspective. Seminars may include: black perspective on history; the history of disease; social perspectives on human sexuality; introduction to death and dying; and ethnocultural perspectives. Topics announced each semester.
190. Social Science: Directed Study. Cr. 2-4

Prereq: consent of instructor. Directed study supervised by a faculty member; appropriate if no courses of instruction are available in desired subject area.
201. Problems in Work and Labor. Cr. 4

Workshop course emphasizing problems related to the nature of work and jobs.
202. Work and Society. Cr. 3

Multidisciplinary television course defines and examines the problem of work and the lives of working people in modern society.
203. Conference on Work and Labor Today. Cr. 3

Semester-long course with periodic weekend sessions. Analysis of specific economic and social issues related to institutions and individuals in modern American society. Dates and themes announced each semester.
231. Perspectives on Conflict Workshop. Cr. 4

Phenomena of human conflict, emphasizing particular perspectives appropriate to the focus and types of conflict chosen for investigation.
232. Studies in Domestic and International Conffict: America, the Second Century. Cr. 3
Economic, political, diplimatic/military, and social developments which have shaped and continue to shape the United States: Centennial to present day.
233. Conference on Analysis of Conflict and Conflict Issues in the Modern World. Cr. 3
Semester-long course with periodic weekend sessions. Specific types of human conflict or conflict events. Dates and topics announced each semester.
(W)
271. (SS) Selected Perspectives on Ethnicity. Cr. 4

Interdisciplinary social science approach to ethnicity and immigration, historical and contemporary. Development of analytical skills. (F)
272. Culture, Community and Identity. Cr. 3

Television course. Concepts of culture, community and identity examined as reflective of social life in North America and as analytic tools which are used by social scientists to broaden our understanding.
(F)
273. Conference on Contemporary Issues in Ethnic Studies. Cr. 3 Semester-long course with periodic weekend sessions. Focus on institutions, neighborhoods, and ethnic groups; analysis of selected social problems, emphasizing the ethnic component. Dates and themes are announced each semester.


## General Urban Humanities (GUH)

## 183. The Sciences and Humanities: Understanding the Human Condition. (GSS 183) (GST 183). Cr. 3

Registration restricted to one time only in each area: GUH, GSS, GST. Interdisciplinary conference course, meeting periodically on weekends during the semester, concerned with issues and problems which may usefully be treated from the viewpoints of the humanities, the social and natural sciences. Topics to be announced in Schedule of Classes.
186. Seminar in Interdisciplinary Humanities. Cr. 4-12

Selected studies in humanities approached from an interdisciplinary perspective. Seminars may include: the saga of the frontier; media, art and society; politics and the arts. Topics announced each semester.
190. Urban Humanities: Directed Study. Cr. 2-4 (Max. 12)

Prereq: consent of instructor. Directed study supervised by a faculty member; appropriate if no course of instruction available in desired subject area.
201. Cultural Identity and the American Experience. Cr. 4

Origins, ideals, symbols and substance of American culture and character. Distinguishing features of American thought and culture and reasons for their uniqueness.
203. Visions of America Conference. Cr. 3

Semester-long course with periodic weekend sessions. Conference explores particular aspects of American society and culture, both as Americans and as people living in other parts of the world, past and present, have seen them. Topics and dates announced each semester.
(F)

## 212. The American Adventure. Cr. 3

Twenty-six video lessons on the human, political, and economic stories of America, from Columbian contact to the Civil War and Reconstruction; how wars and treaties, elections and legislation affected the people of the United States.

## 231. Modes of Perception. Cr. 4

Study of a variety of art forms, analytical approaches and activities; workshop exploration of modes of human perception or ways of knowing.
233. Critical Perspectives of Everyday Life. Cr. 3

Semester-long course with periodic weekend sessions. Ethical and philosophical themes critical to the modern world. The exploration involves a review of artistic expressions of these themes, as well as a survey of analytical treatments. Topics and dates announced each semester.
(W)
242. Paper Tiger: Information and Images in the Printed Media. Cr. 3
Television course examines messages contained in the printed media. Analysis of newspapers, news magazines, and popular journals to explore information and images that shape our social and symbolic environment.
271. (PL) Art and Aesthetics: Literature and Philosophy. Cr. 4 Analysis of literary works; philosophical approaches to the meaning and nature of literature, and of the criteria for its evaluation.

## 273. (VP) Meaning in the Visual and Performing Arts. Cr. 3

Weekend conference course: meaning and experience in the visual and performing arts from the perspectives of artist and audience. Analytical, interpretative, and evaluative approaches through case studies.

## 282. From Socrates to Sartre: An Introduction to Philosophy.

 Cr. 3Survey telecourse in history of western philosophy; major philosophical approaches to questions about the nature of reality, knowledge, and ethical conduct. Readings from Plato, Descartes, Hume, Kant, Hegel, Marx, Sartre.

## General Interdisciplinary Studies (GIS)

26. Learning to Learn: Strategies and Applications. Cr. 2

Open only to non-matriculated students. No degree credit. Offered for $S$ and $U$ grades only. Introduction to systematic thinking strategies, logical patterns of thought, and learning processes applicable to higher education curricula. Information mapping for comparison and analysis, problem solving, diagram interpretation, task management, and scheduling.
(F,W)
151. (BC) Written Communication Skills. Cr. 4 (Max. 8)

Must be taken in first 36 credits in US/WC Program. General language awareness and written communication skills emphasized; writers learn to participate imaginatively in the universe of human discourse.
156. (OC) Dimensions of Oral Communication. Cr. 4 (Max. 8) Students explore and give order to elements of their world, learn to establish a relationship with an audience, and develop skills in communicating ideas to have an effect on others.
203. Orientation to Interdisciplinary Studies: Concepts and Methods. Cr. 2
Required of all entering Weekend College students; exceptions require consent of director. Semester-long course with periodic weekend sessions. Historical development of academic disciplines. Disciplinary and interdisciplinary concepts and methods contrasted. Sources and philosophy of Weekend College curriculum described.
251. Representation and Analysis of Quantitative Information. Cr. 4
Prereq: passing in-class arithmetic test or Mathematics Qualifying

Examination. Introduction to mathematical methods for representing and analyzing data; model building in the natural and social sciences. Use of algebra, graphs, transcendental functions, probability and statistics is discussed.
277. Travel Study: Lower Division. Cr. 4-12

Interdisciplinary examination of cultural, political, social and/or scientific-technological aspects of the destination country by accompanying instructor or guest lecturers.
303. Foundations of Knowledge Conference I. Cr. 3

Prereq: upper division standing. Semester-long course with periodic weekend sessions. Selected topics, in weekend conference format, similar or related to material handled in Foundations of Knowledge Seminar courses. Dates and specific topics announced for each Fall semester.
304. Foundations of Knowledge: Directed Study. Cr. 4(Max. 12) Prèeq: upper division standing or consent of instructor. Appropriate only when other Foundations of Knowledge courses are unavailable. Materials for the course are drawn from topics developed for the Foundations of Knowledge seminars and conferences.
306. Foundations of Knowledge Seminar: Cross-Cultural Perspectives. Cr. 4
Prereq: upper division standing. Cross-cultural, pluralistic approach to knowledge as a work of civilizations across space and time; critical analysis of philosophical, social, and scientific theories as the result of dynamic interaction of the human mind and nature in a varied, pluralistic world.
(F,W)

## 308. Topics in Interdisciplinary Studies. Cr. 4

Conference; examples of interdisciplinary research demonstrating the utility and limitations of this approach, compared with traditional disciplinary methods.

## 313. Foundations of Knowledge Conference II. Cr. 3

Prereq: upper division standing. Semester-long course with periodic weekend sessions. Selected topics, in weekend conference format, on issues similar or related to material handled in Foundations of Knowledge Seminar courses. Dates and specific topics announced for each Winter semester.

## 316. (HS) World War I as a Turning Point: Historical Perspectives. Cr. 4

Prereq: upper division standing. Examination of a critical period in twentieth century history; comparative analysis of human experience as shaped by historical forces: political, social, economic, intellectual, and technological. Workshop course.

## 323. Foundations of Knowledge Conference III. Cr. 3

Prereq: upper division standing. Semester-long course with periodic weekend sessions. Selected topics, in weekend conference format, on issues similar or related to material handled in Foundations of Knowledge Seminar courses. Dates and specific topics announced for each Summer semester.
326. (CT) Methods of Search and Critical Thinking. Cr. 4

Prereq: upper division standing. Analysis of various techniques for generating and validating knowledge in diverse disciplines; assessment of structure and strengths of inductive and deductive forms of argument.
328. Foundations of Knowledge Seminar: World Religions. Cr. 4 Prereq: upper division standing. Interdisciplinary cross-cultural and epistemological analysis of religion as self expression of the most intimate relationship between humans and the universe, and as response to social conflict.
341. (FC) The Africans: A Triple Heritage. Cr. 4

Prereq: upper division standing. Examination of the contribution and
impact of the three cultures which have shaped contemporary Africa: the indigenous inheritance, and Islamic and Western cultures.

## 343. (FC) The Chinese: Adapting The Past, Building the Future.

 Cr. 3Prereq: upper division standing. Lecture-tv-discussion; examination of Chinese culture, social institutions, and political structures; some historical background.
384. General Interdisciplinary Directed Study. Cr. 2-4(Max. 12) Prereq: upper division standing and prior consent of instructor. Elective. Directed study supervised by a faculty member. Appropriate if no courses of instruction are available covering desired interdisciplinary topic area.

## 386. Interdisciplinary/Integrated Advanced Studies Seminar. Cr. 4-12

Prereq: upper division standing. Elective. Explorations of the theoretical implications of the basic course sequences in social science, science and technology, and urban humanities. Topics and dates announced each semester.
477. Travel Study: Upper Division. Cr. 4-12

Prereq: upper division standing. Interdisciplinary examination of cultural, political, social and/or scientific/technological aspects of the destination country by accompanying instructors or guest lecturers. Assignments, papers, and projects appropriate to upper division students.

## Advanced General Studies (AGS)

334. Advanced Directed Study: Science and Technology. Cr. 2-4(Max. 12)
Prereq: upper division standing and consent of instructor. Directed study supervised by a faculty member. Appropriate if no courses of instruction are available covering desired science and technology topic area. Elective.

## 336. Science and Technology Advanced Studies Seminar. Cr. 4(Max. 12)

Prereq: upper division standing. Current and historical studies of issues and topics from interdisciplinary science and technology. Topics announced each semester. Elective.
344. Advanced Directed Study: Social Science. Cr. 2-4(Max. 12)

Prereq: upper division standing and consent of instructor. Advanced directed study supervised by a faculty member. Appropriate if no courses are available covering desired social science topic area. Elective.

346. Social Science Advanced Studies Seminar. Cr. 4(Max.12)

Prereq: upper division standing. Area and period studies, problems and themes in interdisciplinary social science. Topics announced each semester. Elective.

## 354. Advanced Directed Study: Urban Humanities.

## Cr. 2-4(Max. 12)

Prereq: upper division standing and consent of instructor. Directed study supervised by a faculty member. Appropriate if no courses of instruction are available covering desired humanities topic area. Elective.

## 356. Urban Humanities Advanced Studies Seminar.

## Cr. 4(Max. 12)

Area and period studies, problems and themes from interdisciplinary urban humanities. Topics announced each semester.
413. Senior Elective Conference II. Cr. 3

Prereq: upper division standing. Semester-long course with periodic weekend sessions. Dates and topics announced each semester. Offered once each academic year.
455. Field Studies/Practicum. Cr. 2-4(Max. 12)

Prereq: upper division standing and consent of instructor. Study opportunities in a non-traditional setting. Students learn by experience under the supervision of a professional. Practice is integrated with appropriate research and methods, and evaluation is based on evidence of growth and mastery of specific skills. The ratio of clock hours to credits is 15 to 1 .
(I)

## 476. Senior Seminar I: Comparative Civilizations. Cr. 4

Prereq: upper division standing. A seminar on topics determined by the upper division faculty is designed to draw together and reassess fundamental values and themes underlying the US/WCP curriculum. Core readings and a substantial paper are assigned.
486. Senior Seminar II: Problems of Humanity. Cr. 4

Prereq: AGS 476, upper division standing. Topics determined by the upper division faculty in science and technology, social science, and the humanities to be announced each semester. Readings and a substantial paper are assigned.
491. (IC) Senior Essay Seminar I. Cr. 4

Prereq: upper division standing. Research for and development of a senior essay on a topic approved by the directing faculty adviser; culminates in an oral presentation for approval by faculty panel. (T)
492. Senior Capstone Essay/Project. Cr. 4

Prereq: senior level standing. One-semester senior capstone essay/project for Bachelor of General Studies-Capstone and Bachelor of Technical Studies students. Research for and development of essay or project on topic by directing faculty adviser.
496. (WI) Senior Essay Seminar II. Cr. 4

Prereq: AGS 491. Continuation of AGS 491. Lecture and tutorial course in which students complete a major research paper.
-

## School of Medicine

INTERIM DEAN: ROBERT SOKOL

## Foreword

The primary mission of the School of Medicine is to improve the health of the community through its combined educational, research and service programs.

The School offers educational programs leading to the following degrees: Doctor of Medicine, Doctor of Philophy, Master of Science and Master of Arts. Graduate education in clinical fields, post-doctoral study and continuing medical education programs are also offered within the School. Two hundred fifty-six students are admitted annually to the M.D. program and approximately two hundred fifty students are enrolled in Ph.D. or Master's degree study in thirteen program areas, predominantly in the basic medical sciences. More than seven hundred and fifty students are post-graduate trainees as medical residents, post-doctoral fellows, or fellows in twenty-four different clinical programs. Continuing education programs, seminars and colloquiums serve the faculty and students of the School as well as professionals throughout the community as a resource for current and on going developments in the health sciences. In addition to degree programs, the School offers courses in many basic medical science disciplines which are appropriate for students in other colleges and schools of the University. Non-degree enrollment in basic science courses at the graduate level is permitted on a limited basis for qualified students.

Research focusing on human health is the foundation of the activities in the School of Medicine. Fundamental and applied research in biomedical sciences, clinical specialities, and heath care systems is directed by faculty of the School. Research programs at the School are supported by more than thirty million dollars annually through research grants, contracts and gifts. Members of the faculty serve on scientific boards, panels, study groups and in professional leardership roles in health care regionally, nationally and internationally. The reseach facilities of the School are modern, well equipped and continually growing with the pace of current technological advances.

The clinical services provided by the faculty, post-graduates and students in the School are rendered predominantly through the Detroit Medical Center Institutions. The School, through the University, has entered into partnership with the Detroit Medical Center hospitals. The chairpersons of our departments or their designees serve as heads of departments or divisions within each of the Medical Center hospitals. The School also perceives a responsibility to the population of the Detroit metropolitan region as a whole, both as an educational institution and as a supplier of physicians who are highly-skilled providers of health care to staff other institutions and to practice in the community. Furthermore, the School is committed to its educational and care delivery activities within the context of medical education as a national activity, to which each institution contributes responsibly according to its abilities and resources.

## History of the School

The School of Medicine of Wayne State University has been operating and granting degrees as a college of medicine since 1868. It was originally called The Detroit Medical College and was founded by Dr. Theodore A. McGraw, a native of Detroit who returned to the city in 1865 after serving for two years in the United States Army as a contract surgeon.

In 1879 a second medical college, the Michigan College of Medicine, opened in Detroit. The two colleges soon united to become the Detroit College of Medicine. In 1919, the Detroit College of Medicine and Surgery, as it was known then, became an official part of the Detroit Board of Education and thus an important unit in the rapidly
developing Colleges of the City of Detroit. The year 1933 saw the name of the Colleges of the City of Detroit changed to Wayne University in honor of the American Revolutionary War hero, General Anthony Wayne, to whom the British surrendered this region in 1796. It was in 1956 that Wayne University became a State institution.

The School of Medicine has entered its second century with a period of unparalleled growth and the creation of a totally new campus in the Detroit Medical Center. With the opening of the Gordon H. Scott Hall of Basic Medical Sciences in 1971, the size of the entering class increased to 256 students, making the Wayne State University School of Medicine the largest single campus medical school in the country. 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.

## Detroit Medical Center Facilities

## The Detroit Medical Center includes:

Children's Hospital of Michigan, which specializes in medical research and treatment for infants and children - in particular, pediatric hematology, oncology, cardiac surgery, and the treatment of renal disease; and houses a major poison control center;

Detroit Receiving Hospital and University Health Center, which specializes in the treatment of adult emergency/trauma cases, and includes special facilities for the care of emergency psychiatry, burn and spinal injuries; The University Health Center, connected to the hospital, is one of the country's largest multidisciplinary outpatient facilities, with twelve primary care service groups and more than twenty-five medical specialty services for ambulatory care;

Harper Hospital, a division of Harper-Grace Hospitals, which specializes in oncology, cardiology, general surgery and a number of additional surgical specialties and subspecialties;

Hutzel Hospital, which includes among its areas of excellence: obstetrics, gynecology, gynecologic oncology, opthalmology, 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 Insitute of Wayne State University, housed in Hutzel Hospital, which is a major center for research and treatment of eye diseases;

Gershenson Radation 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.

## Wayne State University Medical Facilities

Gordon H. Scott Hall is the main education building for the School of Medicine. It provides facilities for pre-clinical and basic science education, basic science departments, research laboratories for basic and clinical programs and the administrative offices of the School.

The Helen Vera Prentis Lande Medical Research Building houses research laboratories for clinical and basic science faculty.

The Louis M. Elliman Clinical Research Building, a new facility to be occupied in 1989, will provide research laboratories, experimental surgical suites and specialized ressearch facilities for the Departments of Internal Medicine, Surgery, Pediatrics, and Neurology.

The C. S. Mott Center for Human Growth and Development provides research space for programs in human reproduction, growth and development.

The School of Medicine is closely affiliated with the Lafayette Clinic, a State-operated psychiatric hospital; a Veterans' Administration hospital, and seven other major urban and suburban hospitals in the metropolitan Detroit area. All offer programs for third- and fourth-year medical students.

The medical school participates in nationally-funded programs through the Meyer L. Prentis Comprehensive Cancer Center of Metropolitan Detroit, one of twenty-one centers comprising a network of cancer research and treatment; and the Wayne State University Comprehensive Sickle Cell Center, one of ten national centers for the study and treatment of sickle cell anemia.

## Shiffman Medical Library

Director: Faith Van Toll
Librarians: John Coffey, Lora Robbins, Ruth Taylor

## Hours

| Friday...............................................................................................00 $9: 00 \mathrm{p}$.Saturday............. |
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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 185,000 volumes and including over 2,900 current journal subscriptions.

Library services, including circulation and the card catalog, are automated using NOTIS software. In addition to the usual circulation, reference assistance, library instruction and computerized database services to the School of Medicine faculty, students and staff, the library borrows materials through interlibrary loan as needed, for this clientele.

A special feature of the library is the Computer Resources Laboratory. The Laboratory supports the computer literacy, medical desision-making and medical information aspects of the School of Medicine's curriculum. Two IBM XT computers and two MacIntosh SE computers are housed in the Laboratory. Software in the areas of tutorials, clinical decision making, case simulations and reprint file management is also provided.

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 is 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. The library furnishes material to other institutions through interlibrary loan, requests for which number approximately 12,000 per year.

## 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 committment to provide each matriculant with support services so that the rigorous educational program can be presented within as comfortable an environment as possible.

## 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.<br>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.

## Admission to the First-Year Class

Medical College Admission Test This 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.
Procedures: 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: Julia M. Simmons, M.A.

This unit is responsible for assisting in maintaining a representative enrollment of minority students through a combination of counseling and academic programs for high school, college, and post-baccalaureate students. The post-baccalaureate program guarantees admission to the School of Medicine for all students who perform satisfactorily in the program. This unit is also responsible for the summer program for incoming minority students.

## Graduate Programs

## 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. Doctoral programs are offered in the areas cited below under graduate degrees.

## 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
Cancer Biology
Cellular and Clinical Neurobiology
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
Pharmacology
Physiology
Radiological Physics

## * Master of Arts with specialization in Audiology

(The Ph.D. program with specialization in audiology is offered by the College of Liberal Arts.)

## Greduate Certificate in Community Health <br> Services Research and Evaluation

## 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 Research 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

# College of Nursing 

DEAN: GLORIA R. SMITH

## Foreword

Nursing is a service profession and an academic discipline. As a profession, nursing uses knowledge creatively in response to the health care needs of society. Experience in a variety of clinical settings is the primary mode for the development of practical competencies, and the faculty affirms the necessity and value of clinical practice as part of the nursing program.

As a discipline, nursing develops a body of knowledge, and the College of Nursing, functioning within the context of Wayne State University, supports liberal arts education, in the belief that knowledge acquisition and the capacity for critical inquiry, reflection and decision making prepare learners to respond to issues that will confront them as professionals. Accordingly, the faculty believes that nursing programs must be composed of the intellectual, social and technical components of both a liberal and a professional education.

Learners from diverse backgrounds enter the College to begin or continue their nursing education. The diverse characteristics of students add to the richness of the learning experience. As self-directed participants in the learning process, students develop personal goals and values significant to the nursing profession. Consequently, the programs of the College seek to accommodate these goals, special needs, and abilities, and the faculty supports the right of students to question, challenge and debate within the context of inquiry as an essential ingredient to their development.

The handbooks of the College of Nursing, available from the College, provide more specific information regarding the history, philosophy, goals and objectives of the undergraduate and graduate programs.

## Accreditation

The baccalaureate program is approved by the Michigan State Board of Nursing, and graduates are admitted to the licensing examination for professional nurses in the State of Michigan. The baccalaureate and master's programs of the College are accredited by the National League of Nursing.

## Degree Programs

## Bachelor of Science in Nursing

## * Master of Science in Nursing- with clinical focuses 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

FACULTY

Offices: 5557 and 5454 Cass Avenue

## Professors

Lorene Fischer, Madeline Leininger, Barbara McArthur, Gloria Smith

## Associate Professors

Marcia Andersen, Arnold Bellinger, Jacquelyn Campbell, Mary Denyes, Judith Floyd, Effie Hanchett, Ingvarda Hanson, Marjorie Isenberg, June Kuczynski, Kathlene Monahan, Darlene Mood, Marilyn Oermann, Noreen O'Neill, Barbara Pieper, Jeannette Poindexter, Virginia Rice, Fredericka Shea, Dawn Zagornik

## Assistant Professors

Elizabeth Burki, Joette Clark, Geraldine Flaherty, Judith Fouladbakhsh, Marie Luise Friedemann, Judith Fry-McComish, Hertha Gast, Mark Hirschmann, Lois Hunt, Mary Jirovec, Carolyn Lindgren, Laurel Northouse, Fern Sturgis, Nancy Trygar-Artinian, Olivia Washington, Regina Williams

## Lecturers

Francis Board, Margery Caldwell, Patricia Carney, Margaret Cassey, Debra Fifield, Carlee Grey, Diane Hischke, Kaye McDonald, June Miller, Margie Miller, Sara Mooney, Sukhta Pradatsundarasar, Darlene Schott-Baer, Beatrice Shaw, Helen Shaw, Evelyn Sims, Carol Walls, Diane Warren

## Part-Time Faculty

Judith Bumbalo, Diane Burgermiester, Nancy Dobson, Beverly Kober, Beth Kurdunowicz, Linda Luna, Laura Pittiglio, Jo Anna Risk, Kathryn Smith

## College of Nursing Directory



# BACHELOR OF SCIENCE IN NURSING 

The undergraduate program is designed to prepare students upon graduation to begin the practice of professional nursing. The program leads to the degree of Bachelor of Science in Nursing (B.S.N.) and provides a basis for graduate study in nursing. This curriculum consists of courses in both general and professional education.

## Admission Requirements

Depending upon the level of preparedness, students are admitted with different standing, and accordingly may pursue different programs. Students should anticipate enrollment predicated on their status in one of the following admissions categories.

Generic Students: High school graduates (not Registered Nurses) are admitted to the College of Liberal Arts for preprofessional study (see University undergraduate admission requirements, page 13). Applicants for undergraduate study in the College of Nursing are admitted in the sophomore year, after having completed at least thirty credits including specified prerequisite courses (see below) with high scholastic achievement.

Merit Scholars: W.S.U. Merit Scholars are admitted directly to the College of Nursing as freshmen or transfer students. Merit Scholars must satisfactorily complete all prerequisite courses (see below) by July 10 in order to proceed to the immediate subsequent sophomore year (fall term) and must maintain Merit Scholarship standards, including an honor point average of 3.0 or above.

Transfer Students: Students may transfer credit for the prerequisite courses from community colleges or universities and apply for admission to the College of Nursing. Students may apply for transfer to upper division levels from B.S.N. accredited programs. Transfers to the upper division level will be determined by the equivalency of curriculums as determined by the Associate Dean and upon available space in the program in upper division courses. The College determines transfer credit applicable to the B.S.N. degree.

Registered Nurse Students: Licensed R.N. students are admitted initially to the College of Nursing in a non-degree granting category. Upon completion of all prerequisite courses and requirements (see page 354), the R.N. student may apply for advanced standing to the senior year in the College of Nursing.

## Application

All students must file an Application for Admission or Re-entry Application including transcripts to the College of Nursing by the specified deadline dates. Students may elect to submit information included in the optional section of the application form for review by the faculty committee. All materials submitted to the College by the applicant or on the applicant's behalf will be evaluated. The College reserves the right to solicit additional information from the applicant for purposes of determining eligibility to the College.

The College is limited in the number of students that can be accommodated in the B.S.N. program and has final jurisdiction in the selection of its students. Inquiries regarding admission and readmission to the College of Nursing and specific information not listed in this Bulletin should be directed to the Office of Student Services, College of Nursing; telephone: 577-4082.

## Admission to the College of Nursing

Prerequisites for Generic Students: Prior to admission to the nursing major, generic students (for definition, see above) must have completed a minimum of thirty credits including the following:
credits
BIO 101 or B10 105 -(LS) Basic Biology I .....  4

- (LS) An Introduction to Life. .....
B10 220 - Introduction to Microbiology (Laboratory). .....  4
CHM 102 - (PS) General Chemistry I .....  4
CHM 103 - General Chemistry II (Laboratory) .....  4
ENG 102 - (BC) Introductory College Writing. .....  4
PSY 101 - (LS) Introductory Psychology .....  4
SOC 200 or ANT 210
- (SS) Understanding Human Society .....  3
-(SS) Introduction to Anthropology .....  3
PSY 240 - Developmental Psychology ..... 4
UGE 100 - (GE) The University and its Libraries .....
Completion of
Admission to Nursing Courses
Prerequisites for All Students:
I. Admission to the College of Nursing or approval of the Associate Dean for Undergraduate Studies.

2. Health Status Report: Students admitted to the College are required to have a Health Clearance Form on file in the Office of Undergraduate Studies. The health clearance must indicate that the student is in good health and free from communicable disease. Specific health examinations are specified on the clearance form; some must be repeated yearly. Verification of compliance must be supplied annually to the Office of Undergraduate Studies. Throughout the program students must maintain a level of health consistent with meeting the objectives of the curriculum and practicing nursing safely. If a health problem occurs during a student's educational program, the faculty members responsible for clinical practice will assess the student's ability to continue in the program and will make recommendations for action to the Associate Dean for Undergraduate Studies. The University and the College reserve the right to refuse or cancel a student's admission or to direct his/her activities in the College if the health status indicates such action is warranted for safeguarding the patient, the student, other students, or the University.
3. Liability Insurance: The minimum amount of malpractice liability insurance acceptable is $\$ 200,000 / \$ 600,000$ to cover each year of the student's nursing studies. Each student is to present a copy of his/her insurance policy to the Office of Undergraduate Studies no later than August 31 of each year. This copy must show the amount of coverage, the expiration date, and the student's name. Students may not participate in clinical courses without a copy of this policy being on file.
4. Course Material Fee Cards (CMF): The student must purchase course material fee cards for certain courses identified in the Schedule of Classes. The cards must be presented each time the student takes part in the clinical placement lottery.
5. BLCS Certification: All students must have the equivalent of BCLS (Basic Cardiac Life Support) certification for entry to clinical courses. It must be updated each year and students must have current, updated certification on file in the Office of Undergraduate Studies by August 31 of each year. Faculty are directed to deny students access to clinical experiences if students cannot present proof of current health clearance, BCLS certification, and malpractice insurance.

Registration: Prior to mail-in registration, the student selects courses and laboratory sites by means of a lottery system. These classes and laboratory sections are thereby reserved, and the student must register during the mail-in registration period in order to hold his/her space in the program. Students may not attend classes unless they are officially registered. The usual full-time undergraduate program is $\mathbf{1 2 - 1 6}$ credits per term.

## Admission to the Senior Year

Prerequisites for Registered Nurses: Admission in this status is contingent upon current licensure as a Registered Nurse in the State of Michigan. National League of Nursing examinations in Medical Surgical Nursing, Parent Child Nursing, and Psychiatric Mental Health Nursing must be passed satisfactorily within three years of beginning senior clinical courses. Due to the rapid developments within the profession, older results may become dated and require repeat testing.

ALL STUDENTS MUST ACHIEVE grades of ' C ' or better in all courses cited below. These courses may NOT be taken for Passed/Not Passed grades. Natural science credits older than ten years will not count toward fulfillment of these requirements. A cumulative University h.p.a. of 2.00 or above must be maintained.
credits

## BIO 101 or B10 105

-(LS) Basic Biology I ....................................................................... 4
-(LS) An Introduction to Life............................................................ 4
BIO 220 - Introduction to Microbiology (Laboratory)........................................... 4

CHM 102 - 〈PS) Generai Chemistry I............................................................. 4
CHM 103 - General Chemistry II (Laboratory) ................................................... 4
ENG 102 - (BC) Introductory College Writing ................................................... 4
ENG 303 - (IC) Writing the Research Paper.................................................... 3
NFS 221 - Human Nutrition....................................................................... 3
PSY 101 - (LS) Introductory Psychology ......................................................... 4
PSY 240 - Developmental Psychology ............................................................ 4
SOC 200 or ANT 210

- (SS) Understanding Human Society .................................................. 3
- (SS) Introduction to Anthropology ................................................... 3

NUR 200 - Conceptual Basis of Protessional Nursing Practice ............................. 2
NUR 300 - Assessment: History Taking \& Physical Examination .............................. 3
NUR 330 - Pathophyssiology Related to Nursing....................................................... 2
NUR 340 - Introduction to Research........................................................................... 2
Completion of University Proficiency Requirements in English and Mathematics (see pages 21-22)

Students admitted to Wayne State University for the first time in the Fall Semester 1987 and thereafter will be required to have satisfied the remaining University General Education Requirements (see page 20):

UGE 100 - (GE) The University and its Libraries 1
Demonstrable competency in critical thinking
One course in computer literacy (recommended: NUR $111-2 \mathrm{cr}$.)
One course in foreign culture (recommended: NUR $480-3 \mathrm{cr}$.)

Degree Requirements
Candidates for the Bachelor of Science in Nursing must complete 126 credits in course work in accordance with the academic procedures of the University and the College; see pages 5-35 and 357-358, respectively. The credit distribution for the degree is predicated on the date of first time admission to the University: before, or beginning and after Fall Semester 1987. General Education Requirements as well as professional nursing requirements for each group (shown as sample curricular patterns) are cited below. The last thirty credits of the degree must be taken at W.S.U.

## General Education Requirements <br> for All Students Enrolled Prior to Fall 1987

A minimum of sixty-three credits including:
Communication: English composition and the writing of a research paper.

Natural Sciences: General biology, human nutrition, anatomy, physiology and pathophysiology, microbiology, inorganic and organic chemistry, biochemistry, introductory and developmental psychology. (Biology and chemistry courses must include a laboratory.)

Social Sciences: A minimum of three courses including: principles of American government or equivalent (see page 24), introductory sociology or anthropology, and one advanced course in the social sciences or psychology. Advanced courses are at the 400-600 level and therefore may not be transferred from community colleges.

Humanities: A minimum of two courses including at least one course in American or English literature.

Other: Electives to complete the sixty-three credits as well as sufficient preparation to pass the University-required proficiency examinations in mathematics and English (to be completed by the time sixty credits have been earned toward the baccalaureate. See page 24).

## Professional Education Requirements for Generic Students Enrolled Prior to Fall 1987

A minimum of sixty-three credits in nursing courses is required for the B.S.N. degree.

## GENERIC CURRICULUM PATTERN (Sample)

## Sophomore Year



## Junior Year

## First Semester

NUR 311 - The Nurse and the Individual Within the Family I ..... 10
NUR 554 - Assessment: History Taking \& Physical Examination .....  1
ENG 303 - (IC) Writing the Research Paper .....  3
Second Semester
NUR 312 - The Nurse and the Individual Within the Family II .....  .9
NUR 554 - Assessment: History Taking \& Physical Examination .....  .1
NFS 221 - Human Nutrition .....  3
NUR 340 - Introduction to Research .....  .2
Senior Year
First Semester
NUR 411 - Nursing Within a Microsystem. .....  .7
and/or
NUR 435 - Seminar in Process and Dynamics of Groups .....  .2
and/or
One Senior Elective (NUR 419, 420, 422, 426, 427, 428, or 429) ..... 2.4
Second Semester
NUR 412 - Nursing Within a Macrosystem .....  7
and/or
NUR 435 - Seminar in Process and Dynamics of Groups ..... 2
and/or
One Senior Elective (NUR 419, 420, 422, 426, 427, 428, or 429) ..... 2.4
and
NUR 450 - Perspectives in Nursing .....  3
Professional and General Education
Requirements for Generic Students
Enrolled Fall 1987 or Thereafter
The following curriculum outlines the total 126 credits required for theBachelor of Science in Nursing, including sixty-one credits in nursingmajor courses and sixty-five credits in general education courses. Thelast thirty credits of the degree must be taken at Wayne State.
Freshman Year
Freshman Year
First Semester * credits
ENG 102 - ( BC ) Introductory College Writing .....  4
BIO 101 or BIO 105

- (LS) Basic Biology I ..... 4
-- (LS) An Introduction to Life. .....  .4
CHM 102 - (PS) General Chemistry 1 ..... 4
PSY 101 - (LS) Introductory Psychology .....  .4
UGE 100 - (GE) The University and Its Libraries. ..... 1


## Second Semester

PSY 240 - Developmental Psychology ..... 4
B10 220 - Introductory Microbiology. ..... 4
CHM 103 - General Chemistry II ..... 4
SOC 200 or ANT 210

- (SS) Understanding Human Society ..... 3
- (SS) Introduction to Anthropology ..... 3
Satisfaction of Mathematics Proficiency Requirement


## Sophomore Year

First Semester
BIO 287 - Anatomy and Physiology .....  5
Computer Literacy proficiency elective (NUR 111 recommended) ..... 0.2
Critical Thinking elective .....  3
NUR 200 - Conceptual Basis of Professional Nursing Practice .....  .2
NUR 211 - Nursing Care of the Well Client .....  3
NUR 300 - Assessment: History Taking \& Physical Examination .....  1
Total: 14-16
Second Semester
NUR 212 ~ Foundations of Nursing Care in Illness. .....  5
NUR 221 - Nursing Implications of Drug Administration .....  2
NUR 300 - Assessment: History Taking \& Physical Examination .....  1
NFS 221 - Human Nutrition. .....  3
NUR 330 - Pathophysiology Related to Nursing Practice .....  2
Oral Communication proficiency elective. .....  0-2Total: 13-15
Junior Year
First Semester
NUR 311 - Nursing Care of Adults with Complex Health Needs I .....  5
ENG 303 - (IC) Writing the Research Paper
ENG 303 - (IC) Writing the Research Paper .....  3 .....  3
NUR 312 - Nursing Care of Adults with Complex Health Needs II. .....  .5
NUR 340 - Introduction to Research .....  2
NUR 300 - Assessment: History Taking \& Physical Examination .....  1
Total: 16
Second Semester
Philosophy/Letters elective ..... 3
History elective .....  3
NUR 321 - Nursing Care of Childbearing Families .....  5
NUR 322 - Nursing Care of Childrearing Families. .....  5Total: 16
Senior Year
First Semester
American Society elective. .....  3
Visual and Performing Arts elective .....  3
NUR 411 - Psychiatric/Mental Health Nursing .....
NUR 450 - Perspectives in Nursing .....  3
Total: 15
Second Semester
Foreign Culture elective (NUR 480 recommended) ..... 3
NUR 412 - Community Focused Nursing Practice .....  .6
Nursing elective ..... 3
NUR 422 - Leadership and Management in Nursing Practice. ..... 4
Total: 16
Total B.S.N. Credits ..... 126
Professional Education Requirements
for Registered Nurses
Enrolled Prior to Fall 1987

The curriculum for students holding Registered Nurse Licensure and pursuing a baccalaureate degree in nursing is divided into Phases I and II.

Phase I: Students may be admitted to the University and to the College in a non-degree granting status during which they complete all College admission prerequisites including liberal arts courses and testing requirements; see pages 24 and 353 . Nursing courses which may be taken in Phase I and which are prerequisites for admission to Phase II are as follows:
credits
NUR 213 - The Nurse and the Individual Ifl .....  3
NUR 330 - Pathophysiology Related to Nursing Practice .....
NUR 340 - Introduction to Research .....
NUR 554 - Assessment: History Taking \& Physical Examination .....  3
The following courses may also be taken in Phase I depending oncompletion of prerequisites and available space:
NUR 450 - Perspectives in Nursing ..... 3
NUR 434 - Group Theory Process and Dynamics Applied to Nursing ..... 1
NUR 435 - Seminar in Process and Dynamics of Groups .....  2
Phase II: Students apply for admission to senior year courses after having completed all prerequisites, testing, and having met all application deadlines (see above). The student may elect full-time or part-time study on campus or in the Outreach curriculum. The on-campus curriculum provides a means for completion of the senior year nursing content in TWO consecutive semesters of FULL-TIME study (this content may also be taken part-time); the Outreach curriculum provides a means for completion of the senior year content in FOUR consecutive semesters of PART-TIME study.

## ON-CAMPUS SENIOR YEAR CURRICULUM (Sample)

Fall Semester ..... credits
NUR 411 - Nursing within a Microsystem .....  7
and/or
NUR 434 - Group Theory Process and Dynamics .....  1
and/or
NUR 435 - Seminar in Process and Dynamics of Groups ..... 2
and/or
NUR 450 - Perspectives in Nursing .....  3
and/or
Senior Elective (NUR 420, 426, 427, 428, or 429) ..... 2-4
Winter Semester
NUR 412 - Nursing within a Macrosystem. .....  7
Plus: All of the remaining courses listed above which were not completed in the Fall semester, to include: NUR 434: Group Theory; NUR 435: Seminar; NUR 450: Perspectives; and one of the senior electives.
Students may register for full-time (minimum twelve credits) or part-time study in which less than twelve credits are elected per semester.

## OUTREACH SENIOR YEAR CURRICULUM (Sample)

## Fall Semester

NUR 413 - Nursing in a Microsystem (HPTG). .....  3
NUR 450 - Perspectives in Nursing. ..... 3
Winter Semester
NUR 414 - Nursing in a Microsystem (Family) .....  4
NJR 434 - Group Theory Process and Dynamics. .....  1
Summer Semester
NUR 415 - Nursing in a Macrosystem (HCDS) ..... $\ldots 3$
Senior Elective ..... 2.4
Fall SemesterNUR 416 - Nursing in a Macrosystem (Community). 4
NUR 435 - Seminar in Process and Dynamics of Groups .....  .2

## Professional and General Education Requirements for Registered Nurses <br> Enrolled Fall 1987 or Thereafter

1. Registered Nurses must satisfy the University Requirements for General Education (see page 20).
2. The revised professional curriculum outline above should be pursued by all Registered Nurses beginning 200 -level nursing courses in Fall 1988 or thereafter.
3. While individualized plans of study may be necessary for Registered Nurses already enrolled in part-time pursuit of a B.S.N., nurses who plan to be seniors beginning in the Fall 1990 semester must follow the revised professional curriculum. Nursing 211 will be replaced by an upper division three credit transition course for Registered Nurses: NUR 400, Professional Nursing Practice with Groups and Aggregates.


## Academic Procedures

For complete information regarding academic rules and regulations of the University, students should consult the section beginning on page 5. The following additions and amendments pertain to College of Nursing students.

## Attendance

Regularity in attendance and scholastic performance is necessary for success. Students are expected to abide by attendance requirements and to assume responsibility for seeking guidance and direction as needed. Students are responsible for all information presented in class, including all-College announcements and instructions. Absence from field practice must be reported prior to the scheduled time both to the agency and faculty.

## Scholarship

1. All students must maintain a satisfactory ( 2.00 ) honor point average in both: a) cumulative grades (general education and nursing); and b) professional courses (nursing only).
2. Students must achieve a 2.00 h.p.a. in each nursing course. A student may not continue in subsequent courses for which the failed course is a prerequisite until a minimum of 2.00 has been achieved.
3. A grade of ' $D$ ' in a nursing course is unsatisfactory for progression.
4. Students may repeat a nursing course, as space is available, only once to raise the grade to the 2.00 level or above.
5. Students may repeat a maximum of three nursing courses within the program.
6. No nursing course for which a student has received a passing grade may be repeated without written approval of the Associate Dean for Undergraduate Studies.
7. A student receiving an ' $D$ ' grade or less in either the theory or the clinical portion of any nursing course will have recorded no higher than a ' $D$ ' for the total course and will be required to repeat it before progressing to the next clinical core course.
8. Grades of 'l' received in course(s) prerequisite to courses in the subsequent semester must be completed by no later than the second week of class of the following semester.
9. Students must achieve at least a grade of ' $C$ ' in Biology 287 (Anatomy and Physiology) or equivalent prior to entry in any course for which this is a prerequisite.

## Probation

Probationary status is a warning to a student to improve his/her academic performance in order to remain in the program.

1. A student is placed on probation if he/she does not maintain a minimum cumulative honor point average of 2.00 . The final grade report will carry official notice of academic probation.
2. A student is placed on professional probation if he/she does not maintain a minimum honor point average of 2.00 in the nursing courses. The Office of Undergraduate Studies notifies the student of professional probation.
3. An honor point average must be returned to a minimum of 2.00 to remove probationary status. Probationary status must be removed by the time the student has earned thirty credits subsequent to having been put on probation.
4. Students on probation are not eligible to represent the College in any student activity.

## Exclusion

1. A student who fails to satisfactorily complete a nursing course after two attempts will be excluded from the College.
2. A student will be excluded if he/she has had to repeat more than three nursing courses.
3. A student who fails to remove probationary status following thirty semester credits will be excluded.
4. 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 irresponsible performance in field practice assignments.

## Graduation Residency Requirement

The last thirty credits of the degree must be taken as resident credit at Wayne State Universty.

## Graduation With Distinction

A candidate eligible for the bachelor's degree may receive a special diploma with Cum Laude, Magna Cum Laude, or Summa Cum Laude indicated. For the University guidelines regarding these distinctions, see page 34.

## Dean's List and Honors List

Students completing twelve semester credits in study at Wayne State University are eligible for appointment each semester. The semester honor point average at Wayne State must be 3.75 or above in order to qualify for the Dean's List. The Honors List requires a minimum honor point average of 3.50. Lists of students on the Dean's List and Honor's List will be posted in 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 the College of Nursing and otherwise becoming informed 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. (See also Exclusion, above.)

Student Rights and Responsibilities for the University: see page 32.

## College of Lifelong Learning

The College of Nursing, through the College of Lifelong Learning (CLL), offers courses for credit in various locations throughout the greater Detroit metropolitan area. 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.

## Financial Assistance

The University Office of Scholarships and Financial Aids, Room 222, Administrative Services Building (see page 19), administers scholarships, grants, loans and emergency funds available to all University students and funds provided especially for College of Nursing students. Early application is encouraged.

Among the private funding available to nursing students are the Helen Newberry Joy Fund, the College of Nursing Alumni Fund, the Golda Krolik Fund, the John Helfman Fund; and the Rosso, Colquhoun, Wandelt, and Dean's Scholarships. These funds provide limited assistance for financially and academically qualified students. Most awards are in the form of no 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 Undergraduate Studies, College of Nursing.

## 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.
W.S.U. Chapter of the National Student Nurses' Association provides a means of professinal development for students and for direct participation by students in the continuing development of nursing.

Sigma Theta Tau, International Honor Society of Nursing, installed Lambda Chapter on the Wayne State University campus 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.

## 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. A twelve-week spring-summer extern program, granting College of Nursing credit for thirty-two hours of paid hospital work and two hours of correlated weekly seminars, is available to nursing majors who have completed NUR 312 and are recommended by faculty for the program.

## COURSES OF <br> INSTRUCTION¹ (NUR)

## 111. (CL) Introduction to Computers and Technology for Health Care Professionals. Cr. 2

Introduction to computer terminology, hardware, software, telecommunication, word processing; impact of computer technology on health care practitioners.
(F,W)
200. Conceptual Basis of Professional Nursing Practice. Cr. 2 Introduction to conceptual foundations of professional nursing practice. Students assisted in conceptualizing nursing role: theory, conceptual frameworks, research, process, and practice. (F,W)

## 211. Nursing Care of the Well Client. Cr. 3

Prereq: admission to College of Nursing; coreq: NUR 200, BIO 287, one credit in NUR 300, PSY 240. BCLS certification, liability insurance, health clearance required. Focus on basic human needs throughout life span; applications of normal growth and development theories, human interaction and therapeutic relationships. Amplification of use of nursing process; concepts of family, community, culture, and caring.
(F,W)

## 212. Foundations of Nursing Care in Illness. Cr. 5

Prereq: NUR 200, NUR 211, BIO 287; coreq: NUR 221, NUR 330, one credit in NUR 300, NFS 221. BCLS certification, liability insurance, health clearance required. Material fee as indicated in Schedule of Classes. Basic human needs throughout the life span in times of illness. Nursing process: development of biophysical and psycho-social nursing diagnoses and acquisition of psychomotor skills. Nursing care provided to persons with minimal health care needs.
(F,W)

## 221. Nursing Implications of Drug Administration. Cr. 2

Prereq: BIO 287, NUR 200, NUR 211; coreq: NUR 212. Emphasis on the clinical application of content related to the effects of various classes of drugs and the response of patients. Concepts of drug and solution calculations.
(F,W)

## 300. Assessment: History Taking and Physical Examination.

 Cr. 1 (3 req.)Prereq: admission to College of Nursing and/or R.N. licensure in Michigan; coreq: NUR 200 (modules 1-4), NUR 212 (modules 5-8), NUR 300 (modules 9-12). Offered for $S$ 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).
311. Nursing Care of Adults with Complex Health Needs I. Cr. 5 Prereq: NUR 212, 221, 330, NFS 221; coreq: ENG 303, two credits in NUR 300, NUR 340. BCLS certification, liability insurance, health clearance required. Material fee as indicated in Schedule of Classes. Providing holistic health care throughout adult life to individuals experiencing acute or chronic complex health problems. Nursing diagnosis related to alterations of the respiratory, circulatory and digestive systems; ethical decision-making, research utilization; development of additional psychomotor skills in managing total patient care.
(F,W)
${ }^{1}$ See page 433 for interpretation of numbering system, signs and
abbreviations
312. Nursing Care of Adults with Complex Health Needs II. Cr. 5 Prereq: NFS 221, NUR 311, two credits in NUR 300. BCLS certification, liability insurance, health clearance required. Material fee as indicated in Schedule of Classes. Nursing diagnoses related to endocrine, sensorineural, urinary and musculoskeletal systems. Comprehensive assessment to provide and evaluate holistic care.
(F,W)

## 321. Nursing Care of Childbearing Families. Cr. s

Prereq: NUR 312, 340. BCLS certification, liability insurance, health clearance required. Material fee as indicated in Schedule of Classes. Caring for parents and infants during perinatal period. Developmental, family, and teaching-learning theories which are integrated in care of child-bearing families.
(F,W)
322. Nursing Care of Childrearing Families. Cr. 5

Prereq: NUR 312, 340. BCLS certification, liability insurance, health clearance required. Material fee as indicated in Schedule of Classes. Use of nursing process to promote health of children from infancy through adolescence. Supporting children and their families facing illness and hospitalization.
(F,W)
330. Pathophysiology Related to Nursing Practice. Cr. 2

Prereq: anatomy and physiology courses, including a laboratory or equiv. Pathophysiologic process as related to normal physiology, signs and symptoms of disease, laboratory tests. Biophysical component of individual as used in the nursing process.
340. Introduction to Research. Cr. 2

Prereq: NUR 200, 212; computer literacy or NUR 111. Introduction to the research process in nursing. Relationship of research methods to the study of nursing problems.

## 411. Psychiatric/Mental Health Nursing Care of Individuals and

 Groups. Cr. 6Prereq: senior standing. BCLS certification, liability insurance, health clearance, licensure for R.N. students required. Material fee as indicated in Schedule of Classes. Theory-based practice in providing health care to individuals of all ages and groups with varying degrees of psychiatric-mental health needs. Emphasis on group process and dynamics, promotion of personal and community mental health, humanistic care of the acutely and chronically ill client.
(F,W)
412. Community-Focused Nursing Practice. Cr. 6

Prereq: NUR 411. BCLS certification, liability insurance, health clearance, licensure for R.N. students required. Material fee as indicated in Schedule of Classes. Analysis of role of professional nurse in community settings: caring for individuals and aggregates at any stage of development, on any point of the health-illness continuum, and as they may have evolved from diverse cultural backgrounds.
(F, W)
413. Nursing of Individuals, Families and Groups within a Microsystem (Focus: HPTG). Cr. 3
Prereq: admission to nursing senior year; Michigan R.N. licensure; BCLS certification; liability insurance; health clearance. Material fee as indicated in Schedule of Classes. Nursing care supporting the adaptation of individuals, families and groups as microsystems with complex health needs. Teaching learning theory and primary prevention concepts related to groups in the community.
(F,W)
414. Nursing of Individuals, Families and Groups within a Microsystem (Focus: Family). Cr. 4
Prereq: admission to nursing senior year; Michigan R.N. licensure; CPR certification; liability insurance; health clearance. Material fee as indicated in Schedule of Classes. Nursing care supporting the adaptation of individuals, families and groups as a microsystem with complex health needs.
415. Nursing of Individuals, Families and Groups within a Macrosystem (Focus: HCDS). Cr. 3
Prereq: admission to nursing senior year; Michigan R.N. licensure;

BCLS certification; liability insurance; health clearance. Course equates to 3 credits in NUR 412, which may not be taken for credit after NUR 415. Material fee as indicated in Schedule of Classes. Nursing care supporting the adaptation of individuals and groups with complex health needs within the community and health care macrosystem. General systems theory, health care delivery system and organizational theory.
( $\mathrm{F}, \mathrm{W}$ )
416. Nursing of Individuals, Families and Groups within a Macrosystem (Focus: Community). Cr. 4
Prereq: admission to nursing senior year; Michigan R.N. licensure; BCLS certification; liability insurance; health clearance. Course equates to 4 credits in NUR 412, which may not be taken for credit after NUR 416. Material fee as indicated in Schedule of Classes. Nursing care supporting the adaptation of individuals and groups with complex health needs within a community; community assessment, health care delivery system, epidemiology and primary prevention concepts related to the community, broad-scale health issues, values and sanctions of communities.
(F,W)
419. Nurse Externship in Clinical Nursing Practice. Cr. 2-4

Prereq: senior standing. Expanded theory and professional development of the student nurse in class and clinical setting; student is employed concurrently in same clinical setting. Application of theory to practice with groups of clients within work environment.

## 420. Special Topics in Care of the Physically Ill Adult. Cr. 2-4(4 req.)

Prereq: senior standing. BCLS certification, liability insurance, health clearance required. Student selects one of the following topics for in-depth study: oncology nursing; nursing management of groups of physically ill adults in a hospital setting; patients in acute psychobiological crises; pharmacology for nurses; patients experiencing surgical intervention; general medical-surgical nursing; emergency nursing; rehabilitative aspects of nursing; cardiovascular nursing care; legal and/or ethical issues in nursing practice. (F,W)
426. Research Process Applied to Health Problems. Cr. 2-4 (4 req.)
Prereq: senior standing. Research experience dealing with health variables; formulation of research questions; development and implementation of a small study.

## 427. Special Topics in Maternal and Child Nursing.

 Cr. 2-4(4 req.)Prereq: senior standing. BCLS certification, health clearance, liability insurance required. Advanced study in specialized clinical areas related to the nursing care of women and children. Topics include: high-risk mother and infant, nursing of children, family centered care in maternity nursing, nursing management of reproductive health problems in women.

## 428. Special Topics in Psychiatric Mental Health Nursing. Cr. 2-4(4 req.)

Prereq: senior standing. BCLS certification, health clearance, liability insurance required. Provides senior nursing students with an opportunity to explore in depth an aspect of psychiatric-mental health nursing. Topics: human sexuality and mental health; emotionally disturbed child; psychological responses to physical illness; community mental health nursing. Mental health needs of the adolescent; the after-care of patients; mental health care of the aging person; child psychiatric mental health nursing; addictions nursing.

## 429. Special Topics in Community Health Nursing.

 Cr. 2-4(4 req.)Prereq: senior standing. BCLS certification, liability insurance, health clearance required. Provides students with an in-depth community health nursing experience. Special topics include: community health problems; interdisciplinary collaboration in health care; transcultural nursing, theory and practice; families in crisis. (Y)

## 434. Group Theory, Process and Dynamics Applied to Nursing.

 Cr. 1Prereq. or coreq: NUR 435 for R.N. or transfer students. Theories of the group and their use in nursing; use of group processes and dynamics in nursing; communication networks and development phases in nursing groups; strategies for decision-making and conflict resolution; leadership and nurse leader interventions and power in small groups; strategies for obtaining power relevant to nursing.
435. Seminar in Processes and Dynamics of Groups Applied to Nursing. Cr. 2
Prereq. or coreq: NUR 434 for transfer or R.N. students. Experiential seminar. Concepts related to group process in health care settings; concepts and methods of group assessment analysis and evaluation; nursing intervention approaches and strategies useful in working with staff groups to increase the quality of nursing care; the process of making clinical nursing judgments within a group context.
450. Perspectives in Nursing. Cr. 3

Historical development underlying current trends in nursing practice, education and research. Analysis of current issues in the profession of nursing.
480. (FC) Transcultural Health Through the Life Cycle. Cr. 3

Prereq: junior standing; completion of sixty credits. Transcultural health differences and similarities in selected Western and non-Western cultures, from birth through old age. Use of theories and research methods from the health and social sciences and humanities in study and analysis of different cultures.
490. Directed Study. Cr. 1-4

Prereq: admission to College of Nursing; written consent of associate dean for undergraduate studies.
491. Directed Study for International Students. Cr. 1-12

Prereq: consent of instructor and graduate officer. Open only to special international students. Special topics in nursing and health care.
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.
555. Advanced Assessment: History Taking and Physical Examination. Cr. 1-3
Prereq: NUR 300 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.
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.
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)

# College of Pharmacy and Allied Health Professions 

## 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.

## 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, and the Shapero Annex, 1390 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 a wealth of settings in which students may participate as part of their professional development.

## Accreditation

Wayne State University is accredited by the North Central Association and all professional programs in the College of Pharmacy and Allied Health Professions are accredited by their respective bodies or agencies.

## DEGREES AND CERTIFICATES

Upon completion of the requirements listed in each of the programs, the College of Pharmacy and Allied Health Professions grants the following:

## Bachelor of Science in Medical Technology

Bachelor of Science in Medical Technology

- Cytotechnology Concentration


## Bachelor of Science in Mortuary Science

## Certificate in Mortuary Science

## Bachelor of Science in Occupational Therapy

## Certificate in Occupational Therapy

## Bachelor of Science in Pharmacy

## Bachelor of Science in Physical Therapy

Bachelor of Science in Radiation Therapy Technology

## *Graduate Certificate in Experimental Techniques

 in the Pharmaceutical Sciences* 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:
George C. Fuller 105 Shapero Hall; 577-1574

## Deputy Dean of Allied Health Professions:

Dorothy M. Skinner
428 Shapero Hall;577-1368

## Associate Dean:

W. Dale Walls ........................... 103 Shapero Hall; 577-1708

Assistant Dean:
Gary D. Fenn ............................ 121 Shapero Hall; 577-0820

## Assistant to the Dean:

Billie L. Brown
. 127 Shapero Hall; 577-1574

## Business Manager:

Mary R. Mistaleski
101 Shapero Hall; 577-1576

## Graduate Officer:

Gary D. Fenn ............................. 121 Shapero Hall; 577-0820

## Continuing Education Programs:

Paul J. Munzenberger
. 337 Shapero Hall; 577-5384

## Minority Recruitment and Retention:

T. Delores Clark

145 Shapero Hall; 577-4814

## Registrar:

Richard H. Schell........................ 139 Shapero Hall; 577-1716

## Student Affairs:

Frank P. Facione ...................... 143 Shapero Hall; 577-1719

## Faculty of Pharmacy

Pharmaceutical Sciences:
Hanley N. Abramson
.528 Shapero Hall; 577-1737

## Pharmacy Practice:

Gary D. Fenn
. 328 Shapero Hall; 577-0824

## Faculty of Allied Health Professions

Anesthesia:
Prudentia A. Worth
2V-4, Detroit Receiving Hospital; 745-3610

## Medical Technology:

Dorothy M. Skinner $\qquad$ . 233 Shapero Hall; 577-1384

## Mortuary Science:

Gordon W. Rose $\qquad$ 102 Mortuary Science; 577-2050

## Occupational and Environmental Health:

207 Shapero Annex; 577-1551

## Occupational Therapy:

Miriam C. Freeling
.309 Shapero Hall; 577-1435

## Physical Therapy:

Mable B. Sharp ......................... 439 Shapero Hall; 577-1432

## Radiation Technology:

Diane K. Chadwell $\qquad$ 117 Shapero Hall Annex; 577-1137
Mailing address for all offices: College of Pharmacy and Allied Health Professions, Wayne State University, Detroit, Michigan 48202.

## FACULTY OF PHARMACY

## History

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. This unit of the College of Pharmacy and Allied Health Professions traces its past through two pharmacy colleges.

In 1890, the Detroit College of Pharmacy was founded as a program in the Detroit Medical College, the forerunner of the Wayne State University School of Medicine. The Detroit College of Pharmacy later separated from its parent institution, operated independently for two years, and in 1907, affiliated with the Detroit Institute of Technology.

In response to the urging of Detroit area pharmacists, and developing from the six-year course in pharmacy established at Cass Technical High School two years earlier, a new College of Pharmacy was organized by the Detroit Board of Education in 1924. This College of Pharmacy and the Detroit Board of Education's Colleges of Medicine, Education, Liberal Arts, Engineering and Graduate School were united in 1933 into a university called the Colleges of the City of Detroit and named Wayne University in 1934. In 1957, one year after Wayne University became Wayne State University, the College of Pharmacy at the Detroit Institute of Technology joined the College of Pharmacy at Wayne by merging into Wayne State University.

## Goals

Wayne State University is committed to the advancement of higher education and the contribution of services and research to the advancement of society. 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 setting.

Pharmacy is a dynamic and essential component of the health care delivery system. Updating the curriculum and 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, provision or regulation.

## The Profession of Pharmacy

The practice of pharmacy is a diverse and challenging health-care profession of much broader scope than could possibly be realized from casual contact with any particular place in which a pharmacist may practice his/her profession. One of the great appeals of the profession of pharmacy is the variety of positions available to pharmacists. Completion of the pharmacy program qualifies pharmacists for employment in a community pharmacy, hospital or related institution, industrial or distributive complex, governmental or private agency, laboratory, professional organization or other health care settings.

According to State of Michigan law, practice of pharmacy means a health service, the clinical application of which includes the assurance of safety and efficacy in the prescribing, dispensing, administering, and use of drugs and related articles for the prevention of illness, and the maintenance and management of health.

The great majority of students who complete the professional programs in pharmacy enter community or hospital practice.

Graduate programs are available to exceptional students who aspire to careers in academia, research, and specialized pharmacy practice.

The Faculty of Pharmacy works energetically to encourage its students to acquire the education to practice the profession of pharmacy, develop the desire and ability to keep abreast of growing knowledge in the healing arts or health sciences, make contributions to their profession which they gladly share with others, and have a willingness to accept the responsibility of wise community leadership.

Because the profession of pharmacy offers opportunities of wide variety, the Faculty is dedicated to preparing its students for broad practice, rather than preparing them for a single place of practice within pharmacy.

## Accreditation

The Wayne State University College of Pharmacy and Allied Health Professions is a member of the American Association of Colleges of Pharmacy and is accredited by the American Council on Pharmaceutical Education.

The degree of Bachelor of Science in Pharmacy conferred by the College is recognized by all state boards of pharmacy.

## PHARMACY PRACTICE

Office: 328 Shapero Hall

Acting Chairperson: Gary D. Fenn

## Associate Professors

David J. Edwards, Gary D. Fenn, Paul J. Munzenberger, Michael J. Rybak, David K. Solomon

## Adjunct Associate Professors

Brack A. Bivins, Kenneth H. Fish, Richard L. Lucarotti, Percy R. McClain, Douglas A. Miller, Michael F. Powell, Larry K. Shoup, Vern F. Thudium, Ronald T. Turnbull

## Assistant Professors

Terry J. Baumann, Frank P. Facione, Susan C. Fagan, Merlin V. Nelson, David R. Rutledge, Candace V. Simkins, Mary Sudekum

## Adjunct Assistant Professors

Mona Abul-Husn, J.V. Anandan, Daniel M. Ashby, David S. Bach, Richard C. Berchou, Julie R. Berman, Roger D. Blevins, Steven C. Boike, Christine M. Brettfeld, Thomas G. Burnakis, Paul W. Bush, Pranatharthi H. Chandrasekar, James N. Clarke, Daniel M. Colaluca, Clyde N. Cole, William A. Cornelis, Simon M. Cronin, Brian W. Dennis, Cynthia G. Derouin, Gerald L. Emmer, Cynthia L. Gillespie, Joseph A. Harris, Ashwaq E. Hermes, Richard H. Jennings, Matthew H. Johnson, Barry M. Karath, Donald P. Levine, David B. Levy, Ronald H. Lukasiewicz, Neil Massoud, Robert Milewski, Martha J. Miller, John F. Mitchell, William C. Porter, Michael A. Preuss, Stephanie A. Rybak, Randy F. Schad, Cynthia K. Schnaar, Janice M. Shier, Susan A. Sluis, Geralynn B. Smith, Diana L. Twyman, Bruce E. Vinson, Ilona L. Wozniak, David B. Wright, Barbara J. Zarowitz

## Lecturer

Linda A. Jaber

## Adjunct Instructors

Maudestine Bell, James W. Bock, Gerald E. Bodendistel, Marija G. Brandoline, Lawrence Cantor, Michael G. Ciluffo, E. Philip Cole, John S. Dryps, Ervin A. Galecki, Dennis B. Halstead, Keith D. Hazely, Rayne A. Henderson, David L. Jakubowski, Thomas R. Jantz, Kevin L. Kaufmann, Beverly P. Kershaw, Thomas R. Kochis, G. Richard Krieger, Jack Kutnick, Anne E. Laginess, Michael J. Lehr, William W. MacDonald, Gary I. Mark, Stella R. Martin, Ronald A. McEachen, Linda S. McIntyre, Julius S. Megyesi, Sheila A. Meshinski, Thomas P. Michalski, Jerome D. Mills, Zdzislaw J. Miloboszewski, Henry J. Mioduch, Mark E. Mlynarek, Michael M. Mouzakis, Marilyn T. Nash, Leonard W. Ptak, Linda Ringer, Alan Rogalski, Thomas F. Rolands, David Ruta, Barbara A. Salmela, Bernard A. Schiff, Deborah H. Schweyen, Richard Shore, Elizabeth A. Simpson, Laurence M. Sirois, Richard T. Smolarek, Laura J. Solomon, Martha K. Sorrentino, Robert T. Stankiewicz, Joseph A. Stark, Lawrence M. Stein, Edward G. Szandzik, Cheryl A. Szof, Steven J. Tebay, Mary C. Thorsby, Bernard J. Victor, Lisa R. Welford, Karl W. Widak, James E. Williams, Christopher Witting, Joseph Wolf, Alison Q. Wolfson, Moses C. Wu

## PHARMACEUTICAL SCIENCES

Office: 528 Shapero Hall<br>Chairperson: Hanley N. Abramson

## Professors

Hanley N. Abramson, Harold E. Bailey (Emeritus), Martin Barr, Raymond J. Dauphinais (Emeritus), Melvin F. W. Dunker (Emeritus), George C. Fuller, Robert T. Louis-Ferdinand, Willis E. Moore (Emeritus), Janardan B. Nagwekar, Henry C. Wormser

## Associate Professors

Randall L. Commissaris, Bhupendra R. Hajratwala, Richard K. Mulvey (Emeritus)

## Assistant Professor

Craig K. Svensson

## Adjunct Assistant Professor

John J. Nagelhout

## Lecturer

Patrick M. Woster

## Instructor

Cecelia N. Turczynski (Emeritus)

## Degree and Certificate Programs

## Bachelor of Science in Pharmacy

* Graduate Certificate in Experimental Techniques in the Pharmaceutical Sciences
* Doctor of Pharmacywith a major in Clinical Pharmacy
*Master of Science—with majors in
Hospital Pharmacy
Pharmaceutical Science with specialization in Medicinal Chemistry
Pharmaceutical Administration
Pharmaceutics
Pharmacology/Toxicology
*Doctor of Philosophy—with a major in
Pharmaceutical Sciences with specialization in
Medicial Chemistry
Pharmaceutical Administration
Pharmaceutics
Pharmacology/Toxicology


## BACHELOR OF SCIENCE IN PHARMACY


#### Abstract

The minimum undergraduate program of all nationally accredited colleges of pharmacy is one of five academic years. Candidates for the degree of Bachelor of Science (Pharmacy) must complete at least two years of acceptable pre-professional work at non-pharmacy colleges such as the University's College of Liberal Arts, a community College, etc., and then apply for admission to the professional program of Pharmacy in the College of Pharmacy and Allied Health Professions.


## Preprofessional Admission

Admission requirements for the College of Liberal Arts are satisfied by the general requirements for undergraduate admission to the University; see page 13. Counselors are available in the Office of Admissions for personal conferences to aid the prospective student.

Recommended High School Preparation: Fifteen units of high school work are required for admission. The following units are recommended:

English ...........................................................................................................3-4 units
Foreign Language............................................................................................ $1-2$ units
Mathematics .................................................................................................3-4 units
Laboratory Science .........................................................................................2-3 units
Social Studies and History ................................................................................. 2 units
Students will find it advantageous to have had at least one year each of algebra, biology, chemistry, and physics. English, mathematics, and science are strongly recommended.

Application: For applicants who have not previously attended Wayne State University as undergraduate students, an official Application for Undergraduate Admission with a $\$ 20.00$ Application Fee must be filed in the University Office of Admissions before any consideration regarding admissibility can begin. The application blank may be secured from the Office of Admissions. High school students in Michigan can secure an application from their high school counselor.

In order to be considered for admission, applicants must have their completed application, including official transcripts and any other records necessary for admissions consideration, in the appropriate office well in advance of the semester for which they are applying.

## PREPROFESSIONAL COURSE REQUIREMENTS

The following courses (or their equivalents) may be taken at Wayne State University, another university, or a community college. Students should be advised that no more than sixty-four community college credits may be transferred as applicable to the Bachelor of Science in Pharmacy degree. Requirements to be completed prior to admission to the pharmacy curriculum are:

1. Completion of sixty liberal arts credits (from the total of seventy-three required for the B.S. degree) including the core courses listed below.
2. Completion of each of the following core courses (or their equivalents) with the grade of ' $C$ ' or better.
[^76]
## First and Second Years - Preprofessional Core

BIÓ 101 - (LS) Basic Biology I (lab required) .....  4
B1O 220 - Introduction to Microbiology (lab required) .....  4
CHM 107 - (PS) Principles of Chemistry I (lab required) ..... 4
CHM 108 - Principles of Chemistry II (lab required) ..... 5
CHM 224 - Organic Chemistry I. ..... 4
CHM 226 - Organic Chemistry II .....  .4
CSC 101 - (CL) Introduction to Computing ..... 3
ECO 100 - (SS) Surrey of Economics. .....  4
ENG 102 - (BC) Introductory College Writing .....  .4
ENG 301 - (IC) Intermediate Writing .....  3
MAT 201 - Calcuíus I .....  .4
PHY 213 - (PS) General Physics (lab required) .....
PHY 214 - General Physics (lab required) .....  4
PS 101 - (Al) American Government .....  .4
Credits
(These requirements must be completed by the end of the Spring/Summer semester of the year for which professional admission is sought.)

Students must elect additional liberal arts courses, including fulfillment of the University General Education Requirements (see below, and page 20), for a minimum total of seventy-three credits.

General Education Requirements: see page 20. Some pre-pharmacy courses, indicated by parenthetical prefixes to course titles in the list above, fulfill University General Education Requirements. To complete the General Education Program, students must take one course in each of the following areas (contact Pharmacy Registrar for specific course recommendations):

## Credits



Historical Studies (HS)...................................................................................... 3

Visual and Performing Arts (VP).................................................................. 3

UGE 100 - (GE) The University and its Libraries ................................................ 1
Admission to the Pharmacy curriculum is competitive and consideration is given to the following criteria:
A. Core honor point average which is calculated from the grades earned in the required courses listed in section 2 above.

Honor point averages are calculated on the basis of the last grade earned in any course. Core courses may be repeated to elevate a student's h.p.a. However, students with an excessive number of repeats will be given lower priority in the admissions evaluation.
B. Two completed recommendation forms-from either two faculty members, or one faculty member and one employer. (These forms are available in the Office of the Registrar and must be submitted before the application will be evaluated.)
C. Biographical essay (part of Pharmacy application).
D. Fulfillment of the University English Proficiency Requirement (see page 21).

In addition, a personal interview with a member of the Admissions Committee may be required.

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## Professional Program Admission

Enrollment in the pharmacy curriculum is limited to applicants who have met the general University admissions requirements and present evidence of professional admissibility and promise of academic and professional competence in pharmacy. Admissions decisions are made by the Admissions Committee of the Faculty of Pharmacy. Admission to the Pharmacy Curriculum is granted only for the Fall semester.

Application: For admission to the pharmacy curriculum, applicants must submit an Application for Admission to Undergraduate Professional Programs, College of Pharmacy and Allied Health Professions. This application is available from, and should be submitted to, the Office of the Registrar, College of Pharmacy and Allied Health Professions, 139 Shapero Hall.

This application is in addition to the Application for Undergraduate Admission or the Application for Change of Undergraduate College Within Wayne State University required for those applicants attending another college within the University.

Application Deadline: The pharmacy application should be submitted by May 1, in order to ensure a decision before the Fall semester begins.

Students transferring from outside the University who anticipate admission to the pharmacy curriculum (see page 367 ), granted only in the Fall semester, will find it advantageous to have their Wayne application completed no later than April 1, and their Pharmacy application no later than May 1.

Post-Degree Students: Students having at least a baccalaureate degree from this college or another college of pharmacy may be admitted as post-degree students. This rank permits registration in pharmacy courses subject to the approval of the Dean or the Dean's designee. Post-degree status is an undergraduate classification and therefore course credits earned cannot be converted to graduate credit.

Readmission Following an Interruption in Residence: Undergraduate students whose attendance in the pharmacy curriculum has been interrupted for two or more consecutive semesters are required to apply for readmission at the Office of the Registrar, College of Pharmacy and Allied Health Professions, 139 Shapero Hall. Deadline dates for such applications are the same as those for regular admission to the University.

## Degree Requirements

The Bachelor of Science in Pharmacy program consists of a total of five years of academic study and a minimum of 170 credits: seventy-three credits in preprofessional courses and ninety-seven credits in professional courses. These include the core curriculum required in the pre-pharmacy program (see above, pages $365-366$ ), elective and/or specific courses to satisfy the University General Education Requirements (see page 20), the pharmacy curriculum as outlined below, and the clinical externship (see page 368). All course work must be done in compliance with the academic procedures of the University (see pages $5-35$ ) and the College (see page 368 ) as well as the following standards:

Residence: a student must have devoted at least three academic years to resident study in an accredited college or colleges of pharmacy, of which the final professional year and last thirty credits must be taken at the Wayne State University College of Pharmacy and Allied Health Professions.

Honor Point Average: a student must maintain an honor point average of at least 2.0 in total residence credit and in all pharmacy courses.

Curriculum and Program Requirements: a student must complete the curriculum and program requirements, remove any marks of 'I' or ' Y ', and be recommended by the faculty for the degree. The student must complete the required minimum number of credits, elect courses in the proper sequence in the appropriate curriculum shown below, and meet any course prerequisite or corequisite, unless excused from doing so by the Dean.

## PHARMACYCURRICULUM

## First Professional Year

## Fall Semester

## Credits

IHS 310 - Basic Mechanisms of Human Disease I............................................ 5
PPR 300 - Pharmaceutical Calculations ........................................................ 1
PPR 305 - Orientation to Pharmacy.............................................................. 1
PPR 310 - Jurisprudence and Ethics ...........................................................................
PSC 310 - Pharmaceutics........................................................................... 3
PSC 330 - Pharmaceutical Biochemistry 1....................................................... 2
Total: 17

## Winter Semester

IHS 320 - Basic Mechanisms of Human Disease II .....  5
IHS 321 - Basic Mechanisms of Human Disease: Laboratory ..... 1
PPR 320 - Pharmaceutical Compounding and Dispensing .....  .4
PPR 340 - Non-Prescription Medication .....  4
PSC 340 - Pharmaceutical Biochemistry II .....  3
Total: 17

## Second Professional Year

## Fall Semester

PPR 430 - Techniques in Patient Counseling and Education. .....  2
PPR 450 - Pathophysiology and Therapeutics I .....  .4
PSC 410 - Pharmacology I .....  5
PSC 423 - Principles of Pharmacokinetics and Biopharmaceutics .....  3
PSC 430 - Medicinal Chemistry I .....  3
Total: 17
Winter Semester
PPR 400 - Statistics in Drug Literature Evaluation .....  2
PPR 410 - Pharmacy Practice and the Health Care System .....  .2
PPR 460 - Pathophysiology and Therapeutics II .....  5
PPR 467 - Applied Pharmacokinetics .....  2
PSC 420 - Pharmacology II. .....  4
PSC 440 - Medicinal Chemistry II .....  2
Total: 17

## Last Professional Year

In one semester of the last professional year, one half of the class must zomplete the required credits in pharmacy externship which consist of two required rotations and one elective rotation (no other course work may be taken during this term):


Total: 15
In the other semester students must select one of the three options below and enroll for the courses indicated. Professional electives are chosen from other undergraduate offerings of the Faculty of Pharmacy, including those courses required in other options.


## Alternate Last Professional Year

Qualified undergraduate students who have been provisionally admitted to the Graduate Professional Program leading to the Doctor of Pharmacy (Pharm.D.) will elect the following program for their last professional year, beginning in the Spring/Summer semester immediately following the second professional year. This program meets the requirements for the bachelor's degree, fulfills the prerequisite coursework for the Pharm.D. program and includes six of the thirty-five graduate semester credits (taken under Senior Rule) required ir the Pharm.D. The successful applicant will then proceed directly into the second year of the Pharm.D. program and complete requirements in one calendar year after the bachelor's degree.

Spring/Summer Semester Credits
PPR 512 - Hospital Pharmacy Externship ............................................................. 7
PPR 513 - Community Pharmacy Externship............................................................... 4
One of the following:
PPR 514 - Pediatric Pharmacy Externship.............................................................. 4
PPR 515 - Psychiatry/Neurology Pharmacy Externship....................................... 4

PPR 517 - Enteral/Parenteral Nutrition Externship........................................... 4
PPR 518 - Geriatric Pharmacy Externship ...................................................... 4
PPR 519 - General Adult Internal Medicine Externship ...................................... 4
PPR 520 - Critical Care Pharmacy Externship.................................................. 4
PPR 521 - Clinical Pharmacokinetic Externship ........................................................... 4
Total: 15

* Selected from:

pharmaceutics, or | medicinal |
| :---: |
| pharmacology. | chemistry, pharmaceutical administration,

PPR 5xx - Pharmacy Professional Elective. .....  2
PPR 590 - Directed Study .....  3
PPR 660 - Biostatistics. ..... 3

- PPR 661 - DP\&T 1: Immunology/Cardiology .....  3
PPR 662 - DP\&T 2: Pulmonary/Infectious Disease .....
PPR 663 - DP\&T 3: Hematology/Oncology .....  2
Total: 15
Winter Semester
1 PPR 664 - DP\& 4: Psychiatry/Neurology. ..... 2
PPR 665 - DP\&T 5: Gastroenterology/Endocrinology .....  2
PPR 666 - DP\&T 6: Nephrology/Fiuid \& Electro .....
PPR 667 - DP\&T 7: Rheumatology/Pediatrics \& Patient Assess ..... 2
${ }^{2}$ PPR 760 -Introduction to Clinical Research ..... 2
${ }^{2}$ PPR 767 -Applied Pharmacokinetics: Advanced .....  .4
${ }^{2}$ PPR 784 -Seminar in Clinical Pharmacy ..... 2


## Clinical Externship Requirement

In order to provide the pharmacy student with training in the application of the scientific knowledge he/she has gained throughout the pharmacy curriculum, an externship is provided. This externship gives the graduating senior student an opportunity to apply his/her pharmaceutical training in a variety of patient-care settings in community and hospital locations within the metropolitan Detroit area. Each student in the externship is individually assigned to varying types of experiences with a total time allocation in excess of 520 hours. The externship is required of all students. The student is expected to provide his/her own transportation and professional liability insurance.

## Pharmacist Licensure

Licensure as a pharmacist is available to graduates of the professional pharmacy programs of the College of Pharmacy and Allied Health Professions, either by examination or by reciprocity, in all states and in the District of Columbia.

## Internship

Internship is an educational program of professional and practical experience under the supervision of a preceptor in a pharmacy approved by the Michigan State Board of Pharmacy beginning after a student has been licensed by the Board of Pharmacy as an intern. Students are eligible for licensure as interns when they begin the professional curriculum of the College.

For additional information regarding internship, examination or licensure in Michigan, write: The Executive Secretary, Michigan State Board of Pharmacy, 611 W. Ottawa Street, P. O. Box 30018, Lansing, Michigan 48909.

Reciprocity information is available from: The Executive Director, National Association of Boards of Pharmacy, O'Hare Corporate Center, 1300 Higgins Road, Suite 103, Park Ridge, Illinois 60068.

# COURSES OF INSTRUCTION: 

## Interdisciplinary Health <br> Sciences ( IHS )

## 200. Introduction to Health Careers. Cr. 1-2

Offered for S and U grades only. Members of health professions introduce students to the functions performed by each profession in the maintenance or restoration of health.
(F,W)
310. Basic Mechanisms of Human Disease I. Cr. 5

Prereq: admission to professional program in allied health or pharmacy. Material fee as indicated in Schedule of Classes. First part of two-semester sequence: anatomy, physiology, and pathology of human organ systems.
320. Basic Mechanisms of Human Disease II. Cr. 5

Prereq: IHS 310. Material fee as indicated in Schedule of Classes. Continuation of IHS 310. Second part of two-semester sequence.
(W)
321. Basic Mechanisms of Human Disease: Laboratory. Cr. 1 Prereq: IHS 310; coreq: 320. Prosections to understand ariatomical relationships.
330. Pharmacology for Allied Health Professions. Cr. 1

Prereq: IHS 310,320 or equiv. Open only to allied health professions students. Basic course for allied health professions students in mechanisms of drug action (pharmacodynamics), and the use of drugs in the prevention and treatment of disease (pharmacotherapeutics).
574. Health Alternatives in Contemporary Society. Cr. 3

Prereq: last professional year standing or consent of instructor. Material fee as indicated in Schedule of Classes. Critical evaluation of alternative health claims; preparation of pharmacist to provide public with information on efficacy of medical alternatives. Oral report.

## Pharmaceutical Sciences (PSC)

## 310. Pharmaceutics. Cr. 5

Prereq: admission to professional curriculum. Physico-chemical principles which form the basis for pharmaceutical dosage forms. (Formerly PHA 310)
330. Pharmaceutical Biochemistry I. Cr. 2

Prereq: admission to professional curriculum. Material fee as indicated in Schedule of Classes. Survey of biological chemistry, mechanisms of action of drug molecules, and other facets pertinent to the pharmaceutical sciences. (Formerly M C 330)
340. Pharmaceutical Biochemistry II. Cr. 3

Prereq: PSC 330. Continuation of PSC 330. (Formerly M C 340)

[^78][^79]410. Pharmacology I. Cr. 5

Prereq: IHS 320; coreq: PSC 430. Material fee as indicated in Schedule of Classes. General principles of pharmacology and toxicology; influence of drugs on the autonomic, cardiovascular and excretory systems. (Formerly PCL 410)
420. Pharmacology II. Cr. 4

Prereq: PSC 410; coreq: 440. Material fee as indicated in Schedule of Classes. Action of drugs on the central nervous system (such as stimulants, psychotropics, analgesics, general anesthetics); local anesthetics. Endocrine products and synthetics used as medicinal agents; influence of drugs on endocrine secretions. Drugs influencing the gastrointestinal tract and lungs. (Formerly PCL 420)
(W)
423. Principles of Pharmacokinetics and Biopharmaceutics. Cr. 3 Prereq: PSC 310, PPR 320. Material fee as indicated in Schedule of Classes. Pharmacokinetics of drug absorption, distribution, metabolism and excretion and applications of pharmacokinetic principles in understanding drug dose response relationship, drug bioavailability from pharmaceutical dosage forms, drug dosage regimen design, and possible drug-drug interaction in patients. (Formerly PHA 423)
430. Medicinal Chemistry I. Cr. 3

Prereq: PSC 340. Discussion of organic medicinals within the framework of the physical and chemical properties of the compounds; significance of these for pharmacological actions, for stability and storage. Structure-activity relationships. (Formerly M C 410)
440. Medicinal Chemistry II. Cr. 2

Prereq: PSC 430. Continuation of PSC 430. (Formerly M C 420)
520. Qualitative Drug Analysis. Cr. 2

Prereq: consent of instructor. Open only to undergraduates. Spectral and chromatographic techniques used in identification of medicinal agents. Operation of infrared, ultraviolet and nuclear magnetic resonance spectrometers. (Formerly M C 520)
560. Recreational Drug Use and Drug Abuse. Cr. 3-4

Prereq: PCL 410, PCL 420; PPR 450, PPR 460; fifth year standing. 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 531) (W)
576. Pharmaceutical Manufacturing. Cr. 2

Prereq: last year professional standing. The procedures employed in the manufacture of pharmaceuticals. (Formerly PHA 576)
585. Seminar in Medicinal Chemistry. Cr. 1(Max. 2)

Prereq: consent of instructor. Open only to undergraduates in good academic standing. Reports and discussions of current literature and recent advances in the field. Assigned topics presented by students. (Formerly M C 589)
(F,W)
586. Seminar in Pharmaceutics. Cr. 1(Max. 2)

Prereq: consent of instructor. Open only to undergraduates in good academic standing. Reports and discussions on current literature and recent advances in the field. Assigned topics presented by students. (Formerly PHA 589)
587. Seminar in Pharmacology. Cr. 1(Max. 2)

Prereq: consent of instructor. Open only to undergraduates in good academic standing. Reports and discussions on current literature and recent advances in the field. Assigned topics presented by students. (Formerly PCL 589)
590. Directed Study in Medicinal Chemistry. Cr. 1-3(Max. 3) Prereq: consent of instructor. Open only to undergraduates in good academic standing. (Formerly M C 590)
591. Directed Study in Pharmaceutics. Cr. 1-3(Max. 3)

Prereq: consent of instructor. Open only to undergraduates in good academic standing. (Formerly PHA 590)
592. Directed Study in Pharmacology. Cr. 1-3(Max. 3)

Prereq: consent of instructor. Open only to undergraduates in good academic standing. Material fee as indicated in Schedule of Classes. (Formerly PCL 590)
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 M C 600)
610. Survey of Pharmacology 1. 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.
620. Survey of Pharmacology II. Cr. 3

Prereq: PSC 610. Continuation of PSC 610.
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.
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)
680. Introduction to Research. Cr. 4

Prereq: last professional year, graduate, or graduate professional standing. Introduction to research in the pharmaceutical sciences for students contemplating or beginning graduate study.
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)

## Pharmacy Practice (PPR)

## 300. Pharmaceutical Calculations. Cr. 1

Prereq: admission to professional curriculum. The application of the systems of weights and measures and mathematical calculations involved in pharmaceutical procedures and practices.
305. Orientation to Pharmacy. Cr. 1

Prereq: admission to professional curriculum. Offered for $S$ and $U$ grades only. Background history, literature, professional organizations, education, career opportunities in pharmacy profession.

## 310. Jurisprudence and Ethics. Cr. 3

Prereq: P S 101; admission to professional curriculum. Material fee as indicated in Schedule of Classes. Various state and federal laws and regulations affecting pharmacy practice and drug control. Introduction to ethical principles guiding professional practice and
conduct.
320. Pharmaceutical Compounding and Dispensing. Cr .4 Prereq: PSC 310, PPR 300, PPR 305, 310. Material fee as indicated in Schedule of Classes. Elements of compounding and dispensing.
340. Non-Prescription Medication. Cr. 4

Prereq: admission to professional curriculum. Material fee as indicated in Schedule of Classes. Various therapeutic classes of non-prescription medication with particular reference to rationale for use, products available, comparative effectiveness and contraindications.
400. Statistics in Drug Literature Evaluation. Cr. 2

Prereq: fourth year standing. Emphasis on statistics principles needed in analysis of medical and therapeutic literature.

## 410. Pharmacy Practice and the Health Care System. Cr. 2

Prereq: PPR 310; fourth year standing. Review of the history, development and present status of the health care system in the United States. Discussion of trends and projected future development of the system; discussion of the roles and strategies for effective pharmacy practice within the system.
430. Techniques in Patient Counseling and Education. Cr. 2

Prereq: fourth-year standing. Communication techniques, oral and written patient counseling, medication compliance, and patient education techniques. Modes of instruction include: lectures, discussions, and workshops.
450. Pathophysiology and Therapeutics I. Cr. 4

Prereq: fourth year standing; coreq: PSC 410, PSC 430. Material fee as indicated in Schedule of Classes. Major disease states; emphasis on drug therapy of choice and appropriate therapeutic monitoring.
460. Pathophysiology and Therapeutics II. Cr. 5

Prereq: fourth year standing, PSC 420, PSC 440. Material fee as indicated in Schedule of Classes.
467. Applied Pharmacokinetics. Cr. 2

Prereq: PSC 423. Material fee as indicated in Schedule of Classes. Utilization of pharmacokinetic theory in the interpretation and evaluation of clinical literature. Application of these principles in drug therapy. Lectures, library research and discussion.

## 512. Hospital Pharmacy Externship. Cr. 7

Prereq: last professional year standing. Material fee as indicated in Schedule of Classes. Practicum experience in institutional pharmacy practice including aspects of drug information services, intravenous additive services, ambulatory pharmacy services, clinical pharmacy services and hospital pharmacy administration.
(F,W)

## 513. Community Pharmacy Externship. Cr. 4

Prereq: last professional year standing. Practicum experience includes community pharmacy management, medication dispensing, and patient-oriented services such as consultation on the use of prescription and non-prescription medications, monitoring patient profiles and obtaining medication histories.
(F,W)
514. Pediatric Pharmacy Externship. Cr. 4

Prereq: last professional year standing. Practicum experience in provision of pharmaceutical services to pediatric patients. ( $\mathrm{F}, \mathrm{W}$ )

## 515. Psychiatry/Neurology Pharmacy Externship. Cr. 4

Prereq: last professional year standing. Practicum experience in neurology and psychiatry. Students receive clinical experience in monitoring therapy, participation in patient-care conferences. ( $\mathrm{F}, \mathrm{W}$ )
516. Ambulatory Pharmacy Externshíp. Cr. 4

Prereq: last professional year standing. Practicum experience
designed to familiarize the student with the provision of primary care/ambulatory pharmacy services.
(F,W)

## 517. Enteral/Parenteral Nutrition Externship. Cr. 4

Prereq: last professional year standing. Practicum experience in the provision of enteral/parenteral nutrition to ambulatory and hospitalized patients, using a multidisciplinary team approach to total health care.
518. Geriatric Pharmacy Externship. Cr. 4

Prereq: last professional year standing. Practicum experience in the provision of patient-oriented pharmaceutical services to geriatric patients.
(F,W)

## 519. General Adult Internal Medicine Externship. Cr. 4

Prereq: admission to Pharm.D. program. Practicum experience in provision of clinical pharmacy services in health care facilities.

## 520. Critical Care Pharmacy Externship. Cr. 4

Prereq: last professional year standing, consent of instructor. Exposure to and experience in managing critically ill patients. Evaluation and management of fluid and electrolyte abnormalities, CV support, treatment of infectious complications and control of pain.

## 521. Clinical Pharmacokinetic Externship. Cr. 4

Prereq: last professional year standing, consent of instructor. Practicum experience in provision of clinical pharmacokinetic services in health care facilities.
(F,W)
540. Hospital and Institutional Practice Management. Cr. 3 Prereq: PPR 410. Introduction to policies and procedures in hospital/institutional organization and practice including distribution, use and training of supportive personnel; formulary and bid purchasing. JCAH rules and guidelines.
550. Community Pharmacy Management. Cr. 3

Prereq: PPR 410. Principles of management of a community pharmacy practice: advertising, merchandising, purchasing and inventory control; operating and financial records; financial management, insurance and risk factors; security and pilferage problems; purchasing a pharmacy and alternatives in community practice; contractual relationships in practice.

## 560. Special Topics in Hospital Pharmacy Practice. Cr. 3

Prereq: last professional year standing. Discussion of current professional problems in hospital and institutional pharmacy practice. (W)
570. Special Topics in Community Pharmacy Practice. Cr. 2

Prereq: last professional year standing. Discussion of current professional problems in community pharmacy practice.
571. Special Topics in Professional Practice. Cr. 1-2

Prereq: last professional year standing. Offered for S and U grades only. Open only to undergraduates. Discussion of current problems affecting professional pharmacy practice.
572. Special Topics in Clinical Pharmacy. Cr. 2

Prereq: last professional year standing. Lectures and discussions on pharmacotherapeutics and philosophies of clinical pharmacy practice.
(W)

## 573. Drug-Induced Diseases. Cr. 3

Prereq: fifth year standing. Material fee as indicated in Schedule of Classes. Elective on pathology produced by administration of drugs; how therapeutic agents may injure different organ systems.
575. Oncology Therapeutics. Cr. 2

Prereq: last professional year standing. Material fee as indicated in Schedule of Classes. Lecture and discussion on terminology and the basic principles of therapy of the major malignancies, including
pathophysiology and therapy. Ancillary therapy of patients with malignancies.
580. History of Pharmacy. Cr. 2

Prereq: last professional year standing. History of pharmacy from antiquity to modern times; emphasis on development since eighteenth century, especially in Western Europe and the United States.
581. Intravenous Therapeutics. Cr. 2

Prereq: last professional year standing. Material fee as indicated in Schedule of Classes. The 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)
588. 'Seminar in Pharmaceutical Administration. Cr. 1(Max. 2)

Prereq: consent of instructor. Open only to undergraduates in good academic standing. Reports and discussions on current literature and recent advances in the field. Assigned topics presented by students. (Formerly P A 589)
589. Seminar in Pharmacy Practice. Cr. 1 (Max. 2)

Prereq: consent of instructor. Open only to undergraduates in good academic standing. Reports and discussions on current literature and recent advances in the field. Assigned topics presented by students.
590. Directed Study in Pharmacy Practice. Cr. 1-3(Max. 3)

Prereq: consent of instructor. Open only to undergraduates in good academic standing.
591. Directed Study in Pharmaceutical Administration. Cr. 1-3(Max. 3)
Prereq: consent of instructor. Open only to undergraduate students in good academic standing. (Formerly P A 590)
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 $\mathbf{P}$ A 510)
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.

## 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.

## 662. Disease Processes and Therapeutics II: Pulmonary/Infectious

 Diseases. Cr. 2Prereq: 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.

## 663. Diseases Processes and Therapeutics III: Hematology/Oncology. Cr. 2

Prereq: admission to Pharm.D. program. Material fee as indicated in Schedule of Classes. Pathophysiology of disease states, clinical pharmacology and therapeutic application of drugs: hematology and oncology.
664. Disease Processes and Therapeutics IV: Psychiatry/Neurology. Cr. 2
Prereq: admission to Pharm.D. program. Material fee as indicated in Schedule of Classes. Pathophysiology of disease states, clinical pharmacology and therapeutic application of drugs: psychiatry and neurology.
665. Disease Processes and Therapeutics V:

Gastroenterology/Endocrinology. Cr. 2
Prereq: admission to Pharm.D. program. Material fee as indicated in Schedule of Classes. Pathophysiology of disease states, clinical pharmacology and therapeutic application of drugs: gastroenterology and endocrinology.
666. Disease Processes and Therapeutics VI: Nephrology/Fluid and Electrolytes. Cr. 3
Prereq: admission to Pharm.D. program. Material fee as indicated in Schedule of Classes. Pathophysiology of disease states, clinical pharmacology and therapeutic application of drugs: nephrology and fluid electrolytes.
(W)
667. Disease Processes and Therapeutics VII: Rheumatology, Pediatrics and Patient Assessment. Cr. 2
Prereq: admission to Pharm.D. program. Material fee as indicated in Schedule of Classes. Pathophysiology of disease states, clinical pharmacology and therapeutic application of drugs: rheumatology, pediatrics, patient assessment.
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.
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.
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.
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.
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.
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.

## ACADEMIC PROCEDURES

For complete information regarding academic rules and regulations of the University, students should consult the section beginning on page 5. The following additions and amendments pertain to pharmacy students.

## Credits

A credit (credit hour) is defined as one class hour requiring a minimum of two hours of preparation per week carried through a semester. A three hour laboratory period is generally regarded as the equivalent of one class hour.

Some of the early course work of a student attempting to complete degree requirements may become out-of-date, because of a protracted interruption in his/her education or irregular registration over an extended period of time. Such determinations are made by the Faculty of Pharmacy and a student may be required to take refresher work or otherwise demonstrate preparation for advanced courses.

## Academic and Professional Progress

The Faculty of Pharmacy expects its students to develop professional competence and to satisfy the same high standards of exemplary character, appearance, and ethical conduct expected of professional pharmacists.

To merit confidence and esteem, both personally and in the health care professions, appropriate dress and demeanor are expected of each student in the academic and professional program in pharmacy. The Committee on Academic and Professional Progress reviews student performance regularly and makes decisions concerning probationary status. A student may be excluded from the college at any time for an unsatisfactory academic or professional record, for irresponsible attendance, or other failures to diligently pursue the academic and professional program.

## Time Limitation

Because of the rapid changes in technology and in the methods and concepts of patient care, students in the pharmacy program must complete their preprofessional science credits within the six years just prior to admission to the professional program and must complete their professional program within five years. Students who interrupt their academic program will have to apply for reinstatement on an individual basis.

## Probation

Probationary status is a warning that, unless a student's academic performance improves, he/she is subject to dismissal from the College. Any student who is on probation is required, as a condition of his/her continued registration, to meet with his/her faculty adviser not less than three times during each semester he/she remains on probation. While on probation, a student may not represent the college in student activities nor hold student elective offices. The Report of Final Marks sent to a student is notice of his/her academic status. Recei: of a mark/grade of 'I,' ' $E$,' ' $X$,' or ' $W$,' continuation on professional and/or academic probation or failure to meet requirements specified by terminal or special probation may be considered sufficient reason to dismiss a student from the pharmacy curriculum.

Semester Probation: A student in the pharmacy curriculum is on semester probation when his/her semester honor point average is below 2.0.

Professional Probation: A student in the pharmacy curriculum is on professional probation when his/her honor point average in pharmacy courses (i.e., professional honor point average) falls below 2.0 (supercedes semester probation).

Academic Probation: A student in the pharmacy curriculum is on academic probation when his/her cumulative honor point average falls below 2.0 (supercedes professional probation).

Terminal Probation: A student in the pharmacy curriculum who has been on professional and/or academic probation has his/her status changed to terminal probation if his/her professional and cumulative honor point averages have not reached 2.0 after two semesters. This represents a final notice to the student that if the professional and cumulative honor point averages have not reached 2.0 by the end of that semester, the student will be dismissed from the program.

The undergraduate student on semester, professional, academic or terminal probation regains regular standing when the current semester, professional and cumulative honor point averages are at least 2.0.

Special Probation: A student in the pharmacy curriculum may be placed on special probation irrespective of his/her honor point average when, in the judgement of the Committee on Academic and Professional Progress, he/she has failed to satisfactorily complete curricular requirements (i.e., receipt of marks/grades of ' $I$, ' $E$,' ' $X$,' or ' $W$ ') or by the accumulation of an excessive number of ' $D$ ' grades in pharmacy courses. The designation of special probation supercedes semester, professional and academic probation. A student who is on special probation has his/her program requirements (i.e., course elections and required minimum academic performance) specified for each semester until the student is either returned to regular status or dismissed from the program.

## Readmission <br> Following Academic Dismissal

Undergraduate students who have been dismissed from the pharmacy program for academic reasons may apply for readmission after not less than one calendar year following the effective date of their dismissal. Application should be made at the Office of the Registrar, College of Pharmacy and Allied Health Professions, 139 Shapero Hall. Deadline dates for such applications are the same as those for regular admission to the University. Readmission requires a favorable recommendation by both the Admissions Committee and the Committee on Academic and Professional Progress.

Failure in a Pharmacy Course: Consistent with University and College policy, each member of the Faculty of Pharmacy establishes criteria required for successful completion of individual courses. It is the student's responsibility to know these criteria, and to consult as appropriate or necessary, with the faculty member as to his/her progress in the course. Questions concerning any aspect of a student's performance in a course should always be directed to the faculty members who teach the course.

The status of a student receiving an ' $E$ ' grade in a course in the pharmacy curriculum will automatically be referred to the Academic and Professional Progress Committee for review of the student's academic performance in all pharmacy courses taken that semester. Based upon Committee assessment of the student's total status, a recommendation may be provided to the instructor that a re-examination be offered to the student and a deadline established for
completion of the re-examination, where appropriate. The faculty member retains the right to accept or reject this recommendation. The instructor always retains responsibility for setting criteria for adequate completion of a re-examination.

Decisions of the Committee on Academic and Professional Progress may be appealed to the Committee by the student involved. This should be in the form of a letter of petition explaining clearly the student's reason(s) for appeal.

If this petition is denied by the Committee, the student may pursue the following line of appeal: The Faculty of Pharmacy, the Dean, and ultimately, the University Provost.

## Attendance

Regularity in attendance and performance is necessary for success in college work. At the beginning of each course the instructor will announce the specific attendance required of students as part of the successful completion of the course.

## Student Conduct

Every student is subject to all regulations set forth by the College and the Faculty of Pharmacy, governing student activities and student behavior within courses of the College and in use of its facilities. The College and Faculty have the responsibility of making these regulations known to its students. It is the student's responsibility to become thoroughly familiar with College regulations and obtain clarification of any rules unclear to him/her. Questions and concerns regarding regulations should be brought to the appropriate faculty member and/or the Dean's office.

There are obligations inherent in registration as a student in the College. Students entering the profession of pharmacy are expected to have the highest standards of personal conduct so as to be a credit to themselves, the College, and the profession. When there are reasonable grounds to believe a student has acted in a manner contrary to ethical standards, the law, or mores of the community, such student may be disciplined. This discipline may include suspension or dismissal from the program after due process in accord with published policies.

Attendance at Commencement: a student is expected to be present at Commencement exercises.

## Dean's List of Honor Students

A regular undergraduate student who achieves an honor point average of 3.7 or more for at least twelve credits of course work in a given semester is, upon vote of the Committee on Academic and Professional Progress, notified by the Dean of his/her citation for distinguished scholarship and professional progress. The student's name is placed on the Dean's List of Honor Students.

## Graduation with Distinction

A candidate eligible for the degree of Bachelor of Science in Pharmacy may receive a diploma designated for scholastic excellence, as evidenced by the cumulative honor point average. The designations, which are University-wide, are: Cum Laude, Magna Cum Laude, and Summa Cum Laude. Graduation with distinction will be indicated on the student's diploma and on the transcript.

Graduation with Distinction will recognize at each graduation the top twenty per cent of students in each college who have earned the highest
honor point average in their colleges, with the following approximate distribution:

| Summa | five per cent |
| :---: | :---: |
| Magna Cum Laude | Next five per cent |
| Cum Laude | Next ten per cent |

The specific minimum honor point average will be determined each year in the following manner, except that it shall not be less than 3.0 :

Based on the honor point average distributions of the previous year's senior class, the honor point average cut-offs for each college will be established to provide for recognition of the top eighteen to twenty per cent of the graduating students.

The criteria for Graduation with Distinction include:

1. A minimum of sixty credits in residence at Wayne State University.
2. A qualifying minimum honor point average (calculated as explained above) on all work at Wayne State University must be completed by the end of the semester of graduation. (For notation in the commencement program, the honor point average on all work completed prior to the semester of graduation will be used.)

## Outside Employment

The undergraduate curriculum has been arranged with the presumption that the student will devote full time and energy to the pharmacy program. Pharmacy internship and other pharmaceutical employment is recognized as an integral part of the academic and professional growth of the pharmacy student. The student, however, has the responsibility for maintaining the appropriate balance between work outside of the College and satisfactory achievement in the classroom.


## STUDENT AND ALUMNI ACTIVITIES

The Pharmacy Student Advisory Board (PSAB) is a representative organization of the pharmacy student body, organized for the purpose of advancing the College, the University, and the profession of pharmacy. This Board consists of representatives from the various pharmacy student organizations and the class officers.

The College has a Chapter of the Academy of Students in Pharmacy (ASP), which also is affiliated with the Michigan Pharmacists Association. The purpose of ASP is to encourage an early respect for pharmacy as a profession, and to promote student activities on a professional level. The Chapter accomplishes these goals by supporting professional functions at the College, encouraging attendance of students at local, state, and national conventions, and promoting membership in professional associations. The Deal. appoints a member of the faculty to serve as adviser to ASP.

A chapter of the Student National Pharmaceutical Association (SNPhA) was established at Wayne State in 1976. The purpose of this organization is to plan, organize, supplement and coordinate a comprehensive program to improve the health, educational and social environment of minority groups in the United States; to aid both individuals and families in achieving a rich sense of dignity and self-respect. SNPhA hopes to provide a greater opportunity by which health-oriented minority students can achieve greater self awareness and a larger representation in colleges and universities of the United States.

The Alpha Chi Chapter of Rho Chi, the national honor society of pharmacy, elects students to membership who attain the requirea academic qualifications and who are recommended by the faculty.

The following national professional pharmaceutical fraternities maintain active chapters at the College: Kappa Psi, Phi Delta Chi, and Lambda Kappa Sigma.

## Pharmacy Alumni Association

The Pharmacy Alumni Association was established for the purpose of maintaining a close relationship between the Faculty of Pharmacy and its graduates.

The Alumni Association contributes to the development and general welfare of the Faculty of Pharmacy, its students, and the profession of pharmacy. The Association very actively cooperates with the Faculty in fostering various annual and special events of interest to the students, faculty, and alumni.

## FINANCIAL AIDS, SCHOLARSHIPS AND AWARDS

Students may apply directly for federal financial aids (both scholarship and/or loan programs) at the University Office of Scholarships and Financial Aids, Room 222, Administrative Services Building. Additionally, the College has a limited amount of funds available for students who were denied funding from the University office. These funds are designed primarily for students who need short-term assistance. Students enrolled in the pharmacy curriculum of the College may apply for these funds by completing the Pharmacy Financial Assistance Application form which can be obtained from Room 143 Shapero Hall.

## Scholarships

Martin Barr Rho Pi Phi Scholarship: A $\$ 100$ check is awarded annually by Rho Pi Phi Fraternity to a second year student who, in the judgment of the faculty and a fraternity committee, has distinguished himself scholastically and professionally.

Sidney Barthwell Pharmacy Scholarship/Loan Fund: This fund is established to provide financial assistance primarily for black American pharmacy students in good standing for fees and books for a period not to exceed two semesters.

Paul C. and Nettie Deutch Scholarship Fund: A check in the approximate amount of $\$ 1,000$ is awarded to a pharmacy student who has completed a minimum of four academic courses in the professional program with an honor point average of at least 3.0 . The applicant must demonstrate financial need and be ineligible for Federal, State, or other governmental financial educational assistance. If two students are eligible, the one with the greater financial need is given priority; if their need is equal the scholarship may be divided into two awards of approximately $\$ 500$ each.

Bernard Thomas Downs Pharmacy Scholarship: This fund is established to assist black junior or senior undergraduate pharmacy students. Recipients are selected on the basis of scholastic achievement (minimum 2.7 overall honor point average), desirable qualities of character and leadership, and financial need.

Fairlane Pharmacy Scholarship: A fund established by Fairlane Pharmacies provides partial tuition for two pharmacy students each year. Preference is given to students residing in Warren, Michigan.

John Helfman Pharmacy Fund: An endowment fund has been established by the estate of John Helfman to be used for the benefit of the College, including scholarship support for pharmacy students.

K mart Corporation Pharmacy Scholarship: Each year the K mart Corporation presents a scholarship to a second or third professional year student in good academic standing who has demonstrated interest in the community practice of pharmacy.

National Association of Chain Drugstores Foundation Scholarship: This scholarship is established to support undergraduate pharmacy education and encourage talented students to pursue careers in community pharmacy practice. The recipient must be a second or third professional year student who has expressed an interest in the community practice of pharmacy; when appropriate, the award may be divided between two students.

Pharmacy Alumni Association Scholarship Fund: A fund is maintained by the Pharmacy Alumni Association to assist financially needy and worthy pharmacy students.

Frank O. Taylor Scholarship of Wayne State University (Pharmacy): An endowment fund has been established by the estate of Frank 0 . Taylor to provide scholarship funds for students in their last year of undergraduate work or in the graduate program. Eligible students shall be those indicating an interest in pursuing a career in Industrial Pharmacy.

## Loans

Alfred Berkowitz Pharmacy and Allied Health Professions Student Loan Fund: This fund was established by Mr. Alfred Berkowitz in March 1975 to provide financial assistance to needy students in the College.

Robert L. Fleischer Memorial Loan Fund: This fund was established by friends of the Fleischer family to honor the memory of Mr. Fleischer, a 1933 pharmacy graduate of Detroit Institute of Technology. It provides financial assistance to pharmacy students in good standing for fees, books and supplies.

Arthur Koorhan Student Loan Fund: Arthur Koorhan is the first recipient of the Harold W. Pratt Award sponsored by the National Association of Chain Drug Stores, Inc. Mr. Koorhan donated the monetary award to Wayne State University; it can be loaned to pharmacy students who are in good standing and who need financial assistance for fees, books, and supplies.

Roland T. Lakey Student Loan Fund: A loan fund was established in honor of Dean Emeritus Roland T. Lakey by the Pharmacy Alumni Association, Rho Pi Phi Fraternity, and friends of Dean Lakey. Pharmacy students are eligible for loans from this fund when students have completed twelve credits in the College with an honor point average of at least 2.2 .

Bernard J. Levin Emergency Student Loan Fund: This fund established in memory of Mr. Levin, a pharmacy graduate of Detroit Institute of Technology, provides financial assistance to pharmacy students in good standing for fees, books and supplies.

Minnie and Max Millman Memorial Student Loan Fund in Pharmacy: This fund established by the Detroit Alumni of Alpha Zeta Omega Pharmaceutical Fraternity, in memory of the Millmans, provides financial assistance to pharmacy students in good standing for fees, books and supplies.

Max Milstein Memorial Loan Fund: A memorial fund established by the family and friends of Mr. Max Milstein, alumnus of the College, to provide loans (intended for fees, tuition, books, and supplies) to pharmacy students of the College who are in good academic standing. Available to undergraduate and graduate students.

Burton J. Platt Student Loan Fund: This loan was established as a memorial to Mr. Burton J. Platt in February 1975 and is available to worthy students in the Pharmacy program.

Morris Rogoff Student Loan Fund: The family and friends of Mr. Morris Rogoff, a dedicated alumnus of the College, have established a loan fund in his memory. These funds will provide financial assistance for pharmacy students in the undergraduate and graduate programs and are intended primarily for fees, books and supplies.

Student Loan Funds have been established by the following organizations to provide financial assistance to pharmacy students in good standing:

Perry Drug Stores, Inc.
Wayne County Pharmacists Association
Wayne State University Pharmacy Alumni Association
Student Loan Funds have been established by the following pharmacy graduates and staff of the College as a result of gifts from the Burroughs-Wellcome Company: Martin Barr, Louis Bloch, Earl Cheresh, G. Oliver Daniel, Eugene Dembicki, Jack Kutnick, Ronald E. Mankowski, Leo Pikstein, Linda Ringer, Albert C. Rizzo, Lloyd V. Suey

## Awards

American Pharmaceutical Association Certificate: A certificate of commendation is issued annually by the American Pharmaceutical Association to the graduating student who has contributed most in developing membership and encouraging participation in the activities of the student chapter of the College.

Arbor Drug A ward: A $\$ 100$ check and plaque is awarded annually to a graduating student in recognition of superior achievement in community pharmacy practice.

Asklepios Key Award: A distinctive recognition key is presented annually by Mu Omicron Pi Chapter of Kappa Psi Pharmaceutical Fraternity, to the member who has been most active in the interests of the fraternity.

Bristol Awards: An appropriate book is awarded annually to the graduating student who, in the judgment of the faculty, has shown the greatest professional growth.

An appropriate book is awarded annually to a Doctor of Pharmacy candidate who, in the judgment of the faculty, has shown overall excellence in the clinical practice component of the curriculum.

Burroughs Wellcome Co. Doctor of Pharmacy Scholarship A ward: An annual award of $\$ 500$ is presented by Burroughs Wellcome Co. to a student enrolled in the first year of the Doctor of Pharmacy program, on the basis of academic achievement and demonstration of financial need.

Melvin F. Dunker Award: A distinctive plaque and a check for $\$ 100.00$ is presented to recognize the achievements of a graduating pharmacy student who through diligent, hard work has completed degree requirements having overcome a handicap.

Ruth Davies Flaherty Award: A certificate is presented by the Grand Council of Lambda Kappa Sigma Pharmaceutical Fraternity for Women to a member of the Omicron Chapter of the Fraternity to recognize outstanding chapter loyalty and service.

Ethel J. Heath Scholarship Key: A distinctive honor key is awarded by Omicron Chapter of Lambda Kappa Sigma International Pharmaceutical Fraternity for Women, to each graduating member in good standing who has attained a cumulative scholastic rank in the upper ten percent of all candidates eligible for graduation.

Hoechst-Roussel Award: Each year, Hoechst-Roussel Pharmaceuticals, Inc., presents a plaque and a copy of Martindale's The Extra Pharmacopeia to the graduating Doctor of Pharmacy candidate who, in the opinion of the practice faculty and the doctor of pharmacy students, has excelled in all aspects of the program and is most likely to make the greatest impact on clinical practice.

Kappa Psi Graduate Chapter Award: A silver bowl or tray is awarded annually by the Detroit Graduate Chapter of Kappa Psi Pharmaceutical Fraternity to the graduating student with the highest scholastic average.

Kappa Psi Pharmaceufical Fraternity A ward: A silver tray is awarded annually to the graduating member of Mu Omicron Pi Chapter of Kappa Psi Pharmaceutical Fraternity who attains the highest scholastic average.

Kappa Psi Pharmaceutical Fraternity Grand Council Award: A distinctive recognition key and certificate are awarded by Kappa Psi Pharmaceutical Fraternity to a member of the Fraternity who attains the highest scholastic average in the College graduating class.

Lambda Kappa Sigma Recognition Key: A recognition key is presented by Omicron Chapter of Lambda Kappa Sigma International Pharmaceutical Fraternity when, in the opinion of the Fraternity, a graduating member has displayed distinguished service to the Fraternity and College, and is in good standing academically and professionally.

Lemmon Company Student Award: Upon recommendation of the faculty, a plaque and a $\$ 150$ check is awarded by the Lemmon Company to a graduating student in recognition of superior scholastic performance and outstanding co-curricular professional involvement.

The Lilly Achievement A ward: Upon recommendation of the faculty, a gold medal encased in a suitable plastic mounting is awarded annually by Eli Lilly and Company, to a graduating student for superior scholastic and professional achievement, leadership qualities, and professional attitude.

Martec Recognition Award: Upon recommendation of the faculty, Martec Pharmaceuticals, Inc., awards a plaque and $\$ 150$ to a student in the second professional year who has demonstrated academic achievement and leadership in professional and co-curricular affairs.

McNeil Mortar and Pestle Dean's Award: A distinctive replica of an antique Revolutionary War mortar and pestle is awarded annually to the fourth year student who, in the judgement of the faculty, exhibits exceptional interest, aptitude, and achievement in pharmaceutical administration.

Merck Award: Two sets of books consisting of The Merck Index and The Merck Manual are awarded annually, one to the graduating student attaining the highest average in the overall College program; the other to the graduating student attaining the highest average in the pharmacology and pharmacotherapeutics courses, except that in the event the same individual qualifies for both awards, the second award will be presented to the graduating student with the second highest average in the overall College program.

Mylan Pharmaceuticals Excellence in Pharmacy Award: A distinctive certificate as well as a subscription to Drug Interaction Facts is presented annually to the graduating pharmacy student who has demonstrated superior proficiency in the provision of drug information services as well as outstanding professional motivation. The recipient must be in the top twenty per cent of the graduating class.

Perry Pharmacy Achievement Award: A $\$ 100$ check is awarded annually by Perry Pharmacies, Inc. to the student who has earned the highest scholastic average in the area of pharmaceutical administration.

Pfizer Pharmaceuticals Community Pharmacy Internship Award: Upon recommendation of the practice faculty, a suitably engraved plaque is awarded by Pfizer Laboratories to a graduating student in recognition of excellence in the community pharmacy component of the externship program.

Phi Delta Chi Alpha Eta Alumni Award: Each year the name of the graduating member of Alpha Eta Chapter of Phi Delta Chi Fraternity who attains the highest scholastic average of all such eligible graduating students is engraved on a plaque, which is presented to the student by the fraternity.

Phi Delta Chi Award: A $\$ 100$ check is awarded annually by the Phi Delta Chi Fraternity to a second year student in the College, selected from at least three nominees in the top twenty-five percent of their class recommended by the faculty, and determined by the awards committee of the Fraternity to have demonstrated potential leadership in intraprofessional activities by the second professional year of the pharmacy program.

Roche Pharmacy Communications A ward: Upon recommendation of the practice faculty, a suitably engraved plaque is awarded by Roche Laboratories to a graduating student in recognition of superior patient communication skills in clinical pharmacy practice.

Sandoz Doctor of Pharmacy A ward: Upon recommendation of the practice faculty, an engraved plaque and a check for $\$ 100$ is awarded by Sandoz Pharmaceuticals to a graduating Doctor of Pharmacy candidate in recognition of outstanding performance in the doctoral program.

Smith Kline Beckman Award: A plaque is presented annually to a graduating senior student in recognition of superior achievement in clinical pharmacy practice.

Syntex Laboratories Preceptor of the Year Award: Upon recommendation of the practice faculty, a suitably engraved plaque is awarded by Syntex Laboratories to a pharmacy practitioner in recognition of outstanding participation in the externship component of the pharmacy curriculum.

The Upjohn Award: Awarded annually to the graduating senior who, in the judgment of the faculty, has been most active in off-campus public service activities.

The Upjohn Pharmacy Research A ward: Upon recommendation of the practice faculty, the Upjohn Company presents a plaque and $\$ 250$ to the graduating doctor of pharmacy candidate, resident, or fellow who has demonstrated excellence in research. The research project must have been completed or published within the previous two years.


## FACULTY OF <br> ALLIED HEALTH PROFESSIONS

## Programs

Anesthesia, medical technology, occupational and environmental health, occupational therapy, physical therapy and radiation therapy are among the allied health programs which contribute in vital ways to the practice of medicine and provision of health care. Mortuary science offers students a professional degree program in funeral service education. These fields of study lead to interesting and rewarding careers.

Anesthesia*: The nurse anesthetist is a specialist who, as a member of a health-care team, is qualified to administer anesthesia to patients for all types of operations under the direction of a physician. The anesthetist is also prepared in the management of cardiopulmonary resuscitation and in the application of modern methods and procedures of respiratory care.

Medical Technology*: Students in medical technology learn the scientific principles and theories behind the many laboratory tests performed to aid the diagnosis of disease. During the latter part of their curriculum, they become proficient in the performance of these tests and familiar with the practical aspects of the hospital laboratory. The work of the medical technologist is indispensable to effective care of the sick, because results of their analytical work often establish a basis for diagnosis which must be made before medical care can be instituted.

Cytotechnology: Students in medical technology-cytotechnology concentration enter a challenging field involving the microscopic inspection and evaluation of slide preparations of various human cells and/or organs. A cytotechnologist practices under the direction of a pathologist in identifying changes in the body's cells. While the majority of cytotechnologists work in hospitals, graduates are also prepared for positions in research laboratories, private and clinical laboratories, and in cytotechnology education.

Occupational and Environmental Health*: The complex industrial environment of today exposes the worker to many physical and chemical factors capable of provoking stress or irreversible damage to health. The Department of Occupational and Environmental Health offers the Master of Science degree with specialization in industrial hygiene or industrial toxicology.

The profession of industrial hygiene, devoted to the prevention of occupational illness, is founded on the belief that safe and healthful working conditions can be established by proper control of environmental stresses. Industrial toxicology, upon which industrial hygiene is largely based, concerns itself with determining the amounts of potentially toxic substances which may be safely tolerated and the mechanisms by which these substances cause harm. Engineers, physicians, chemists, physicists, biologists and other scientists will find these disciplines stimulating, with opportunities for research and application continually increasing. The scarcity of well-trained professionals in these fields and the heightened interest of federal, state and local legislators in health problems have resulted in excellent employment prospects for qualified persons with good remuneration and opportunities for advancement.

Occupational Therapy*: Education in occupational therapy prepares the student to assist individuals who have limitations in the performance of tasks required in normal routines of daily living, i.e., self-care, work and play. To be competent therapists, students learn to utilize concepts of treatment related to the restoration, development and maintenance of physical, psychological, social, emotional and cognitive functions. The curriculum includes instruction in the use of specific evaluative procedures, the application of a wide variety of activities related to daily living tasks, including creative and manual skills and the procedures for functioning as a member of a health-care team. The occupational therapist's goal is to provide the client the means for assessing his/her abilities to function as independently as possible. Seeing this accomplished provides the therapist the satisfaction of fulfilling a needed role in society.

Physical Therapy: Undergraduate education in physical therapy prepares students to practice in a health-care profession which strives to enable people, despite disease, disability or physical handicap, to function as contributing members of society. The curriculum, didactic and clinical, provides opportunities for the student to learn basic skills and techniques in evaluation, treatment procedures, and selection of appropriate therapeutic procedures, primarily affecting the neuro-musculo-skeletal system, to meet the needs of the individual. The physical therapist is an integral member of the medical team in the planning, implementation and evaluation of the patient's health-care program. Physical therapy graduates have the opportunity to initiate and influence social change by establishing close relationships with people in a wide variety of settings.

Radiation Therapy: The program in radiation therapy technology is designed to prepare students to administer treatment with ionizing radiation to patients with malignant diseases. The didactic portion of the curriculum provides the mathematics, physics, basic science and psychology as a background which the student then learns to apply in a clinical setting. The clinical portion of the curriculum places considerable emphasis on learning the practical skills and techniques required to handle the various materials and operate the sophisticated machinery of a radiation therapy facility. The clinical training also provides opportunity for the student to interact with physicians and graduate technologists in the treatment planning process and with patients who are receiving treatment with ionizing radiation.

Mortuary Science: The program in mortuary science prepares students for a career in funeral service. The curriculum provides the study of the fundamentals of applied biological and physical sciences as background for understanding techniques and procedures applicable to the preparation and disposition of human bodies and to public health and safety measures. Other areas of study include a thorough understanding of the theory and a proficiency in the practice of the technical skills pertinent to funeral service, and the instillation of high standards of ethical conduct required to foster and uphold the dignity of funeral service.

## 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 5. The following additions and amendments pertain to allied health students.

## Recommended High School Preparation

Students who plan to enter the University as freshmen should have included in their high school programs at least three years of English, one year of algebra, one year of plane geometry, at least one course in a laboratory science and at least two years of a foreign language. Some programs require additional work in mathematics and science.

## Admission to Preprofessional Programs

Preprofessional programs in medical technology, mortuary science, occupational therapy, physical therapy and radiation therapy technology are taken in the College of Liberal Arts and all students must apply for admission to that College, requirements for which are satisfied by general undergraduate admission to the University. The Office of Admissions is located at HNJ Student Services Building, 3 East, Wayne State University, Detroit, Michigan 48202; telephone: 577-3577. Admissions counselors are available for personal conferences to aid the prospective student.

## Admission to Professional Programs

Each of the Allied Health programs is limited in the number of applicants that can be accepted. This limitation is created not only by the number of faculty members available, but also by the number of positions available in health care facilities where much of the field work experience is conducted at a $1: 1$ or $1: 2$ faculty-to-student ratio.

Students are admitted to the professional program annually. In the sophomore year the student should make application to the program of his/her choice. However, because of special requirements for each program, students are urged to contact the department for counseling and application deadline dates a year before they plan to enter.

For admission to the professional Allied Health programs, applicants must have acquired a minimum of sixty credits (or their equivalent) and have completed all equivalent preprofessional course and other requirements. Students admitted to the professional program usually have an honor point average of $2.5(\mathrm{~A}=4.0)$ or better. To be considered, all applicants (except those in mortuary science) must have taken the Allied Health Professions Admissions Test (AHPAT), a standardized evaluation procedure that has been developed similar to the Medical College Admissions Test. It provides admissions officers throughout the country with comparative data on an applicant's verbal and quantitative abilities, reading comprehension and science preparation. This test will be administered several times each year at Wayne State University as well as other locations throughout the country. Applicants should plan to take this test no later than January or March preceding entry into the professional programs. Application forms and detailed information can be obtained from the Registrar's Office, 139 Shapero Hall, College of Pharmacy and Allied Health Professions.

Although academic achievement is important, personal qualities are considered of equal importance since the students selected will eventually be working as members of a team in the delivery of health care. Therefore, criteria for selection are also based on such qualities as maturity, motivation, knowledge of the profession, ability to
communicate, personal integrity and empathy for others. Consequently, evaluations from faculty and academic advisers, as well as a personal interview, are given great weight in the selection of candidates by admissions committees.

## Academic Advising

A staff of academic advisers is available in the University Advising Center, 3 West, Joy Student Services Building, for students interested in allied health professions.

Students, during their sophomore year, should confer with the professional program adviser of the Allied Health profession of their choice whenever they have questions about degree requirements, academic regulations, course elections, programs of study, or difficulties in their academic work. Course elections are arranged in consultation with the professional program advisers.

## Normal Program Load

The requirements for graduation are based upon a normal program of fifteen credits per semester for eight to ten semesters. Because courses are of varying length, students cannot always arrange programs of exactly fifteen credits; hence the normal load is fourteen to eighteen credits.

## Probation

If a student's work falls below the required cumulative average for professional studies, he/she will be placed on probation. If a student incurs a serious honor point deficiency in a semester, or remains on probation for more than one semester, he/she will not be allowed to re-register in the College unless he/she obtains permission from the Office of the Dean. Such permission will be granted only after an appraisal of the student's situation and some assurance from the student that the previous causes of failure will not be operative in the proposed program.

Program Probation: A student whose semester honor point average falls below the required average will be placed on program probation. Each student must meet the academic and probationary requirements of his or her program.

Removal of Probation: The student will be removed from probation at the end of any semester in which he/she achieves the average required.

Academic Honesty: Students are expected to abide by the principle of honesty which is fundamental to the life of a scholarly community. If any act of academic dishonesty (cheating or plagiarism) is discovered, the instructor is expected to take appropriate action, which can include one or more of the following: reprimand, repeat of assignment, a failing grade for the assignment, a failing grade for the course. Serious acts of dishonesty can lead to suspension or dismissal. The instructor will notify the student of the alleged violation and inform him/her of any action being taken. Both the student and the instructor are entitled to academic due process should the instructor's action be contested.

Further information can be obtained from the College's Office of the Dean.

## Student Conduct

Students are expected to abide by the principle of honesty. Dishonesty in the academic community is a deliberate attempt to deceive the educational process by submitting work which is not the product of one's own intellect and diligence. Attempts to give a false impression of academic performance may take many forms, such as the unauthorized use of notes, direct copying from another's examination paper, or collusion between students to exchange information during an examination. Acts of deception may also include plagiarism, or the submission under the guise of personal achievement of any material or idea resulting from unauthorized assistance.

Academic dishonesty or cheating not only tends to destroy an individual's character and integrity, but also diminishes confidence in the educational system on the part of persons who exert honest effort. Students, faculty, and support staff all have a duty to eliminate dishonesty from the educational system.

A faculty member has inherent responsibility for the academic conduct and moral character of each course he/she teaches. If the teacher suspects academic dishonesty within a class, appropriate steps should be taken to ascertain the facts in the matter, consistent with the rights of the parties involved, before invoking sanctions commensurate with the nature of the offense. A copy of the complete policy of the College may be obtained from the Registrar's Office, 139 Shapero Hall.

## Dean's List of Honor Students

Full-time students whose honor point averages are 3.7 or above in a given term are eligible for citation for distinquished scholarship. Part-time students are eligible for inclusion in the Dean's List of Honor Students after each accumulation of twelve credits.

## 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.

## Attendance

Regularity in attendance is necessary for success in college work. Each instructor, at the beginning of the course, will announce attendance requirements.

## Student Rights and Responsibilities

The Faculty reserves the right to dismiss at any time a student who does not appear to be suited for the work or whose conduct or academic standing is regarded as unsatisfactory. Students are urged to review the specific policies of their respective department.

## BACHELOR'S DEGREE REQUIREMENTS

Specific requirements for the several bachelor's degrees offered by the Faculty of Allied Health Professions are enumerated in the departmental sections of this bulletin (see pages 380-399). Following are general College and University policies governing baccalaureate programs.

## University General Education Requirements

For complete description, see pages 20-27.
University Requirement in American Government --see pages 23, 24.
University Proficiency Requirements in English and Mathematics: All undergraduate students who register for the first time at Wayne State University in Fall Semester 1983 or thereafter will be required to demonstrate proficiency in English and mathematics by the time they have earned sixty semester credits toward a bachelor's degree. For full particulars of these requirements, see the General Information section of this Bulletin, pages 21, 22, 24.

## Residence

The last thirty credits of work applicable to the degree, exclusive of credit by special examination, must be completed in an undergraduate college or school of Wayne State University.

## Time Limitation

Because of rapid changes in technology and in the methods and concepts of patient care, students in the allied health programs must complete their preprofessional science credits within the six years just prior to admission to the professional program and must complete their professional program within three years, unless exception is granted by the Department Chairperson. Students who interrupt their academic program will have to apply for reinstatement on an individual basis to have their performance evaluated. They may be required to pass examinations comparable to those given to current students at that level sought for re-entry into the program.

## Outside Employment

The undergraduate curriculum has been arranged with the presumption that students will devote full time and energy to their college and university experience. Students are encouraged to limit their outside employment in order to benefit from the full complement of academic and cultural opportunities that are a vital part of higher education.

## Requirements for Graduation

In addition to the formal academic requirements for graduation, students in the Allied Health Professions must demonstrate traits of character, stamina and emotional stability appropriate for work in a health-care field. Students may be required to withdraw from the College when, in the judgment of a committee of the faculty, they are deficient in these qualities so as to make them unsuitable for their chosen profession.

Graduation with Distinction: See page 34.

## MEDICAL TECHNOLOGY

## Office: 233 Shapero Hall

Chairperson and Deputy Dean of Allied
Health Professions: Dorothy M. Skinner
Associate Professor
Dorothy M. Skinner

## Assistant Professors

Janet Brown Castillo, Ann Wallace

## Adjunct Professors

A. William Shafer, Richard Walker, Joseph Wiener

## Adjunct Associate Professors

Barbara Jenkins, Aaron Lupovich, Gerald Mandell

## Adjunct Assistant Professors

James Adams, Kathryn Beattie, Mara Christiansen, Jean Garza, Grace Hill, Carol Hillman, Joyce Salancy, Shobha Shah

## Adjunct Instructors

Diane Crockett Brown, Sheila Finch, William Sherman
Cooperating Faculty
L. McCoy, M. Pak, D. Walz

## Degree Programs

## Bachelor of Science in Medical Technology

Bachelor of Science in Medical Technology with a concentration in cytotechnology

* Master of Science in Medical Technology with specializations in clinical laboratory instrumentation, education management, hematology, and immunohematology.

Medical technology is a health profession offering many challenging opportunities for men and women with an aptitude in the basic sciences and an interest in a career devoted to giving indispensable aid to the effective practice of medicine. The Medical Technology Program at Wayne State University provides the interested student with the technical knowledge and specialized skills necessary to the profession. The work of the medical technologist involves:

1. Provision of accurate diagnostic information to the physician through performance of a vast array of laboratory tests.
2. Comparative evaluation and utilization of the best possible methods of performance of these tests.
3. Operation of sophisticated laboratory equipment.
4. Effective teaching and supervision of students and auxiliary laboratory personnel.

While the majority of medical technologists work in hospital or other clinical laboratories, graduates are also prepared for positions in federal, state and local health departments, in industrial or research laboratories and in medical technology education.

The programs offered by the Department of Medical Technology utilize the facilities of the College of Liberal Arts, the Faculty of Allied Health Professions and the pathology departments and clinical laboratories of hospitals affiliated with the Department of Medical Technology.

## Bachelor of Science in Medical Technology

The program leading to the Bachelor of Science degree in Medical Technology fulfills the requirements for medical technology education of the Committee on Allied Health Education and Accreditation. A graduate from Wayne State University with this Bachelor of Science degree is eligible to take a national certification examination in medical technology. The degree program consists of a preprofessional curriculum and a professional curriculum, as follows:

The freshman and sophomore years constitute the preprofessional program comprising the liberal arts courses taught by the faculty of the College of Liberal Arts.

The junior year begins the professional program and is taught by the faculty of the Department of Medical Technology and the School of Medicine.

The senior year consists of clinical experience in the laboratories in one of the affiliated hospitals.

## Admission

Preprofessional: Students seeking admission to the preprofessional program in the College of Liberal Arts should refer to the admission requirements of the University, page 13. High school prerequisites for applicants pursuing the Bachelor of Science in Medical Technology are:

|  | high school units |
| :---: | :---: |
| Physics. | .. 1 |
| Chemistry. | ............ 1 |
| Algebra. | 1.5 |
| Geometry... | ................ 1 |
| Trigonomet | ............ 0.5 |

Recommended: Latin, German or French, or proficiency in one or more computer programming languages (e.g., BASIC, FORTRAN).

Although the College of Liberal Arts does not offer course work in the first unit of algebra, some mathematics deficiencies can be eliminated by taking Mathematics 090 (see page 281). Students with NO preparedness in mathematics will have to remedy this deficiency at a high school. Before the first course in college chemistry or college mathematics can be taken, the student must pass a placement test.

A deficiency of any of the above high school units may extend the time required for completion of the courses prerequisite to beginning the professional curriculum in the junior year, or it may restrict the electives which may be taken. Any entrance deficiencies should be made up as early as possible, preferably in the first year.

[^80]
## PREPROFESSIONAL PROGRAM

Courses in this program are taken under direction of the College of Liberal Arts:
First Year
BIO 101 - (LS) Basic Biology I .............................................................................. 4

Professional Program Admission: The junior class is admitted to the professional curriculum in September only. An application for admission to the program must be submitted to the Department of Medical Technology by April 15 of the year one wishes to enter the professional program.

The Admissions Committee is composed of medical technologists on the faculty and adjunct faculty of the Department of Medical Technology. The Admissions Committee will interview and consider for admission all those students who-

1. Have the following cumulative honor point averages by the end of the second semester of the year preceding admission to the professional program:
(a) 2.5 or greater overall average; and
(b) 2.3 or greater combined science average (biology, chemistry, computer science, mathematics and physics).
2. Will have completed all preprofessional courses (see above) by the end of the summer semester prior to admission to the professional program.
3. Have taken the English Proficiency Examination prior to the beginning of the fall program (test is given during the week preceding the beginning of each semester; see the University Schedule of Classes for date and time).
4. Submit, in addition to the application, the following:
(a). References (reference forms available in the University Advising Office) from: One employer and one science faculty member (If no employer, two science faculty references may be submitted).
(b). If the student has transferred to Wayne, official transcripts from all former undergraduate schools must be included.

Since the clinical positions are limited, the Admissions Committee must consider each applicant individually. A sound academic background, a familiarity with the profession and its demands, together with a desire to advance the field of medical technology through research, teaching or service are important factors for consideration. Emotional stability, maturity and the ability to communicate are among the criteria used in considering the student.

The decision of the Admissions Committee will be: (1) Accepted, (2) Denied, or (3) Conditional Acceptance. (If applicants have courses in progress which are prerequisites to the program, acceptance will not be final until satisfactory completion of the requirements.)

All requests for additional information should be addressed to the Chairperson, Department of Medical Technology, College of Pharmacy and Allied Health Professions.

## Degree Requirements

Candidates for the Bachelor of Science in Medical Technology must complete 132 credits in course work, plus sufficient credits to fulfill the University General Education Requirements not satisfied by either required courses or the student's choice of electives in the preprofessional program. The distribution of the total credits for the degree will be between the preprofessional program (see above) and the professional program as follows:

## PROFESSIONAL PROGRAM

Basic science courses in this program are taken under the direction of the faculty of the Department of Medical Technology in cooperation with the faculty of the School of Medicine and staff of affiliated clinical institutions.

## Third Year



Medical Technology 400, 401, 402, 403, and 406 will be taken at a hospital affiliated with the College of Pharmacy and Allied Health Professions.

Academic Standing-Dismissal and Readmission: No senior student will be graduated with a grade of less than ' $C$ ' in any clinical course.

[^81]Any student with a semester h.p.a. less than 2.0 is subject to dismissal. The student who receives a final grade of ' $E$ ' and/or a second ' $D$ ' in a junior (first professional) year course is automatically dismissed from the program.

Students who have been dismissed for academic reasons and wish to be readmitted to the medical technology professional curriculum will have the opportunity to do so only once. The decision to readmit a student will be on a competitive basis and readmission is not guaranteed. If, upon readmission, the student fails to meet the academic standards of this Department he/she will be dismissed and not readmitted any time thereafter.

Any student who has been dismissed for academic reasons during the first admission to the program but has successfully completed, with a grade of C or better, any of the following courses, need not repeat these courses upon final readmission. If more than one year elapses from the time these courses were sucessfully completed, the student must repeat the entire course of study. The faculty, however, reserves the right to alter this policy when warranted in any specific case.

Change of Status: Any student wanting to have their status changed from full-time to part-time must comply with the following guidelines:

1. Request the status change no later than the ninth week of classes from the Department Chairperson.
2. Present a reason or reasons acceptable to this Department as determined by the faculty, realizing that this decision will be final.
3. Continue as a part-time student under the predetermined curriculum as set forth by this Department.
4. Understand that this option may be limited by current and future enrollment; again, the decision of the faculty on this basis is final.

Residence: See the section above on Academic Procedures for the Faculty of Allied Health Professions, page 379.

Time Limitation: See the section above on Academic Procedures for the Faculty of Allied Health Professions, page 379.

## Bachelor of Science <br> in Medical Technology <br> Cytotechnology Concentration

Cytotechnology is a challenging field involving the microscopic inspection and evaluation of slide preparations of various human cells and/or organs. A cytotechnologist practices under the direction of a pathologist in identifying changes in the body's cells. Microscopic examinations of specially stained slides are made to detect cytoplasmic or nuclear changes of cells which may differentiate healthy cells from those suspected of being cancerous or of having other structural abnormalities. While the majority of cytotechnologists work in hospitals, graduates are also prepared for positions in research laboratories, private and clinical laboratories and in cytotechnology education.

The freshman and sophomore years constitute the preprofessional curriculum with courses taught by the faculty of the College of Liberal Arts (or equivalent courses at another accredited institution). The junior year begins the professional curriculum and is taught by the faculties of the Department of Medical Technology, the College of Liberal Arts, and the College of Education. The senior year consists of an eleven month clinical experience in the laboratory of an affiliated hospital.

Accreditation: The degree program in cytotechnology is four years in duration, culminating in the degree Bachelor of Science in Medical Technology with a concentration in cytotechnology. The four-year program fulfills the requirements for cytotechnology education of the Committee on Allied Health Education and Accreditation in collaboration with the American Society of Cytology. A graduate from Wayne State University with a degree in Medical Technology with a concentration in cytotechnology is eligible to take a national certification examination in cytotechnology.

## Admission

Preprofessional: Students seeking admission to the preprofessional program in the College of Liberal Arts should refer to the admission requirements of the University as stated on page 13. High school prerequisites for applicants pursuing the Bachelor of Science in Medical Technology with a concentration in cytotechnology are:
high school units
Algebra................................................................................................................. 1.5
Biology ..................................................................................................................... 1
Chemistry................................................................................................................. 1
Geometry.................................................................................................................. 1
Physics..................................................................................................................... 1
Trigonometry.......................................................................................................... 0.5
Typing ...................................................................................................................... 0.0
Recommended: Latin, German, and/or French, and profeciency in one or more computer languages (e.g., BASIC, FORTRAN).

Although the College of Liberal Arts does not offer course work in the first unit of algebra, some mathematics deficiencies can be made up by taking MAT 090 (see page 281). Students with NO preparedness in mathematics will have to remedy this deficiency at a high school. Before the first course in college mathematics or college chemistry can be taken, the student must pass qualifying examinations in these subjects.

A lack of any of the high school units listed may extend the time required for completon of the courses which are prerequisite to beginning the professional curriculum in the junior year, or may restrict the electives which may be taken. Any entrance deficiencies should be made up as early as possible, preferably in the first year.

## PREPROFESSIONAL PROGRAM

Courses in this program are taken under the direction of the College of Liberal Arts. Students must pass the required preprofessional courses with a grade of 'C' or better.


## Second Year

BIO 102 - Basic Biology II................................................................................... 4
BIO 220 - Introduction Microbiology................................................................... 4
BIO 271 - Comparative Vertebrate Zoology ........................................................... 4
CHM 224 - Organic Chemistry I............................................................................ 4
ENG 303 - (IC) Writing the Research Paper .......................................................... 3
HIS 110 - (HC) The Ancient World ........................................................................ 3
P S 101 - (AI) American Government.................................................................... 3
Humanities Electives........................................................................................... 6
Foreign Culture Elective....................................................................................... 3
Residence: See the section above on Academic Procedures for the Faculty of Allied Health Professions, page 379.

Time Limitation: See the section above on Academic Procedures for the Faculty of Allied Health Professions, page 379.

Professional Program Admission: The junior class is admitted to the professional curriculum in the Fall Semester only. An application for admission to the program must be submitted to the Department of Medical Technology by April 15 of the year one wishes to enter the professional program. Professional program admission requirements are the same as for the general Bachelor of Science in Medical Technology; see page 381. For further information, write: Department of Medical Technology, College of Pharmacy and Allied Health Professions, Wayne State University, Detroit, Michigan 48202.

## Degree Requirements

Candidates for the medical technology degree Bachelor of Science with a concentration in cytotechnology must complete 130 credits in course work, plus sufficient credits to fulfill the University General Education requirements not satisfied by either required courses or the student's choice of electives in the preprofessional program. The distribution of the total credits for the degree will be between the preprofessional program (see above) and the professional program as follows:

## PROFESSIONAL PROGRAM

Basic science courses in this program are taken under the direction of the faculty of the Department of Medical Technology in cooperation with the College of Liberal Arts and the staff of the affiliated clinical institutions. The third year begins ONLY in September.
Third Year
B10 340 - Principles of Physiology
Credits
B10 507 - Genetics .....  4
B10 563 - Histology .....  4
Bl0 567 - Endocrinology .....  .4
CSC 100 - Introduction to Computer Science. ..... 3
M T 302 - Hematology 1 .....  2
M T 312 - Hematology I Laboratory .....  2
MT 305 - Hematology II .....  2
M T 315 - Hematology II Laboratory. ..... $\ldots .$.
M T 310 - Medical Technology Parasitology .....  3
M T 450 - Cytotechnology Technique 1 .....  4
EER 763 - Fundamentals of Statistics .....  3
Electives. .....  3
Fourth Year
M T 450 - Cytotechnology Technique I ..... 13
M T 451 - Cytotechnology Technique II ..... 16

Academic Standing-Dismissal and Readmission: For procedures regarding probation and dismissal, students should refer to the paragraphs immediately following the general Bachelor of Science professional program, page 381.

## Student Aid

The University offers opportunities to students in need of financial assistance to meet the expenses of their education. Information about scholarships and loans is available from the University Office of Scholarships and Financial Aids, 2 East, HNJ Student Services Building, Detroit, Michigan 48202.

In addition, the Michigan Society of Medical Technologists offers a scholarship or loan to qualified junior or senior students in the professional program. Also, student loan funds have been established to assist students in good standing in medical technology; they include: the Medical Technology Student Loan Fund, and the W. K. Kellogg Foundation Loan Fund.

## Medical Technology Alumni Association

Organized in 1978, the Medical Technology Alumni Association was established for the purpose of developing and maintaining rapport between the graduates and faculty of the Department of Medical Technology. In addition to being supportive of the University, one of the main functions of the Alumni Association is to provide continuing educational opportunities and social activities for alumni, faculty and students of the Medical Technology Department.

Student Professional Activities: All students may participate in the local, state and national organizations of the American Society for Medical Technology.


# COURSES OF INSTRUCTION ${ }^{1}$ <br> Biochemistry (BCH) 

## 101. Introductory Biochemistry. Cr. 2

Prereq: CHE 101. Fundamentals of biochemistry, especially areas of importance to students of occupational and physical therapy.
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.
503. General Biochemistry Lecture. Cr. 2

Prereq: BCH 501. Clinical enzymology; metabolism of steroids; hormones; biochemistry of tissues and body fluids.

## Immunology And Microbiology (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.
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.

## Medical Technology (M T)

101. Introduction to Medical Conditions of Community Concern: A Laboratory Perspective. Cr. 2-3
Variety of medical conditions presented from perspective of laboratory tests required for diagnosis. Brief description of the condition and its mechanism of action; presentation of laboratory tests; indication of test results.
102. Medical Technology Seminar. Cr. 1

Offered for $S$ and $U$ grades only. Introduction to medical technology, its opportunities and responsibilities.
(F,W)
290. Preprofessional Directed Study. Cr. 1-3

Prereq: enrollment in pre-medical technology program. Offered for $S$ and $U$ grades only. Independent study under faculty supervision.
( $\mathrm{F}, \mathrm{S}$ )

## 302. Hematology I. Cr. 1-2

Prereq: junior in medical technology program or consent of instructor. Basic study of blood-forming organs and components of blood; explanation of basic hematological procedures.
${ }^{1}$ See page 433 for interpretation of numbering system, signs and abbreviations
304. Immunohematology. Cr. 2

Prereq: junior in medical technology or consent of instructor. Principles of immunology and theory of procedures employed in the clinical blood bank. Survey of the organization and operation of a blood bank.
305. Hematology II. Cr. 2

Prereq: M T 302. In-depth study of blood and blood forming organs (normal and pathological) from the standpoint of interpretation and diagnosis.
(W)
306. Serology. Cr. 2

Prereq: junior in medical technology or consent of instructor. Material fee as indicated in Schedule of Classes. Theoretical and practical information on serology theory and laboratory methodology.
307. Urinalysis/Hemostasis. (PSL 307). Cr. 2-3

Prereq: junior in medical technology or consent of instructor. Material fee as indicated in Schedule of Classes. Theory of diagnostic analysis of urine and other body fluids; correlation of test results with pathophysiology. Theoretical information on hemostasis, coagulation and fibrinolysis. Lecture and laboratory.
308. Principles of Clinical Laboratory Instrumental Methods. Cr. 3-4
Prerèq: junior standing in medical technology program or consent of instructor. Material fee as indicated in Schedule of Classes. Introduction to fundamental laws of electronics, the theoretical basis of instrument design, and quality control in laboratory testing. Application of instrumental methods, including spectrophometric, flurometric, electroanalytical, and chromatographic methods to the clinical laboratory.
309. Medical Technology Professional Seminar. Cr. 1

Prereq: junior in medical technology program. Weekly group discussion on medical technology matters. Medical ethics and professionalism.
(W)
310. Medical Technology Parasitology. Cr. 3

Prereq: registration in medical technology program, consent of instructor. Material fee as indicated in Schedule of Classes. Discussion and practical considerations of parasitic organisms as disease agents in man, their epidemiologic, clinical pathological significance and practical diagnostic methodology.
312. Hematology I: Laboratory. Cr. 1-2

Prereq: junior in medical technology program. Material fee as indicated in Schedule of Classes. Laboratory exercises relative to the basic study of the blood forming organs and the components of blood. (F)
314. Immunohematology Laboratory. Cr. 2

Prereq: junior in medical technology program. Material fee as indicated in Schedule of Classes. Practice of procedures employed in the clinical blood bank.
315. Hematology II: Laborat ory. Cr. 2

Prereq: M T 312. Material fee as indicated in Schedule of Classes. Laboratory exercises relative to in-depth study of blood and blood forming organs; normal and pathological blood forms.
318. Clinical Instrumentation Laboratory. Cr. 1

Prereq: M T 308. Material fee as indicated in Schedule of Classes. Introduction to the function and use of clinical laboratory instruments.
(S)
328. Introdaction to Clinical Chemistry. Cr. 3

Prereq: M T 318. Material fee as indicated in Schedule of Classes. Methodologies and interpretations of results of clinical chemistry diagnostic tests.

## 400. Clinical Hematology. Cr. 6

Prereq: senior standing in medical technology program. Theory and principles for evaluation of the quantity, morphology and function of cellular components of blood together with assessment of coagulation factors.
(S)
401. Clinical Chemistry. Cr. 9

Prereq: senior standing in medical technology program. Biochemical analysis of blood and other body fluids to determine levels of various chemical substances. Automation, special chemistry and nuclear medicine.
402. Clinical Blood Bank. Cr. 1-4

Prereq: senior standing in medical technology program. Theory and principles involving antigen-antibody reactions of blood. Obtaining, storage and preparation of whole blood or blood components for infusion.
403. Clinical Microbiology. Cr. 7

Prereq: senior standing in medical technology program. Obtaining, culturing, identification and quantitation of microorganisms causing infection or infestation. Determination of most effective antibiotic.

## 404. Laboratory Administration and Instruction. Cr. 2

Prereq: junior standing in medical technology program. Educational aspect includes discussion of basic instructional techniques and methodologies; preparation of educational objectives and test questions. Administration portion includes discussions of interaction with patients, fellow workers, employers, other allied health professions.
(W,S)

## 406. Clinical Serology. Cr. 2

Prereq: senior standing in medical technology program. Theory and procedures for identification of antibodies produced as a result of infection by microorganisms, collagen diseases and auto-immune disorders.

## 450. Cytotechnology Technique I. Cr. 4-17

Prereq: senior standing in medical technology program, cytotechnology concentration. The study of cells. Analysis of cells that are spontaneously exfoliated, mechanically dislodged by irritation, brushing or scraping, or forcibly removed by needle aspiration. Cytologic methods as applied to the detection and diagnosis of cancer.
451. Cytotechnology Technique II. Cr. 16

Prereq: M T 450. Continuation of M T 450.
490. Professional Directed Study. Cr. 1-8

Prereq: enrollment in medical technology program. Offered for S and U grades only. Independent study under faculty supervision.

## 507. Clinical Pathology Correlation. Cr. 1-2

Prereq: senior standing in medical technology program or consent of instructor. Correlation of laboratory data and clinical history through the analysis of case studies.
(W,S)

# MORTUARY SCIENCE 

Chairman: Gordon W. Rose
Professor
Gordon W. Rose
Assistant Professor
Mary Louise M. Williams

## Lecturer

Gerald P. Cavellier

## Adjunct Associate Professor

Edward J. Kerfoot

## Certificate and Degree Programs <br> Three-Year Certificate in Mortuary Science <br> Bachelor of Science in Mortuary Science

Wayne State University offers a professional program in funeral service education. A student may earn a three-year certificate in Mortuary Science; or may qualify for the Bachelor of Science in Mortuary Science by completing an additional thirty credits in course work during the fourth year. Both the three-year certification and the four-year degree programs meet or exceed the educational requirements for licensure in Michigan most other states.

The services and facilities characteristic of a major university are available to students in this program. In addition to its own full-time faculty, the instructional staff is selected from the various departments of the University as well as from the core of experienced practitioners in the community. The professional program offers the enrollee extensive opportunity to participate in clinical/practicum training in the mortuary arts. Prospective students should direct inquiries to: Department of Mortuary Science, 627 W. Alexandrine, Detroit, Michigan 48201; telephone: 577-2050.

Accreditation: The three-year certificate and the four year degree program in mortuary science are accredited by:
(1) The North Central Association of Colleges and Schools;
(2) The American Board of Funeral Service Education; and
(3) The Michigan State Board of Examiners in Mortuary Science.

## THREE-YEAR CERTIFICATE PROGRAM

The fundamental objectives of the program are:
a. To teach and encourage the highest standards of ethical and professional conduct and practices through the coordination of in-depth course content and curriculum planning.
b. To provide the theoretic and practical capabjilities to an individual, who, as a health practitioner, will assure the public of professional service in the preparation and disposition of human remains.
c. To offer professional and functional courses in the biologic and physical sciences, behavioral sciences, mortuary arts, and management/administration that will provide the community with a person who is effectively responsive to the needs of the bereaved.

The educational program in mortuary science covers three academic years of college work. Two of these years are devoted to pre-professional studies which must be taken in the College of Liberal Arts of Wayne State University or at any regionally accredited college or university. For the third or professional year, the student registers in the Department of Mortuary Science. The program of professional study is offered during the University's regular academic year, which extends from late August to early May. On satisfactory completion of the full three-year program the student is awarded a Certificate of Graduation in Mortuary Science.

## Admission

Preprofessional Program: Students entering as freshmen and intending to pursue either an undergraduate certificate or degree in mortuary science must complete the preprofessional program (see below) offered by the College of Liberal Arts. The admission requirements for that college are those for regular undergraduate admission to the University; see page 13.

## PRE-PROFESSIONAL PROGRAM

To be considered for admission to the professional year, applicants must have completed (as part of the required fifty-two credits) the courses listed below (or their equivalents, for transfer students). These courses are included in the certification requirement of the Michigan State Board of Examiners in Mortuary Science as of July 13, 1962. All transferred courses must have been passed with an overall grade average of ' C ' or better if completed at an accredited college or university.

## First Semester



## Second Semester

B10 102-Basic Biology II.............................................................................................
PSY 101 or PSY 102
-(LS) Introductory Psychology ........................................................... 4
-(LS) Elements of Psychology ........................................................... 3
ENG 301 or ENG 303
-(IC) Intermediate Writing ............................................................... 3

- (C) Writing the Research Paper ...................................................... 3

ECO 102-(SS) Principles of Microeconomics ................................................... 4

Total: 15-16

## Third Semester

$$
\text { CHM } 102 \text { - (PS) General Chemistry I ............................................................................ } 4
$$

SPB 101-(OC) Oral Communication: Basic Speech ............................................ 2
CSC 101 or CSC 102
-(CL) Introduction to Computing....................................................... 3
-Computer Science I ...................................................................... 4
ACC 301-Elementary Financial Accounting Theory.................................................. 4

Total: 13-16

## Fourth Semester



```
CHM 103 - General Chemistry II
. .4
PHI 105 or PHI 232
    -(CD Critical Thinking........................................................................... 3
    - (PL) Introduction to Ethics............................................................. 4
P S 101-(AI) American Government................................................................ 4
                                    Total: 16-17
```

Professional Program Admission: To be considered for admission to the third (or professional) year of the program, applicants must have completed the preprofessional program (see above) under one of the following conditions:

1. Completion of at least fifty-two semester (seventy-eight quarter) credits at an accredited collegiate institution with an overall grade average of ' $C$ ' or better.
2. Completion of at least fifty-two semester (seventy-eight quarter) credits at a recognized but unaccredited collegiate institution with a cumulative average of ' $B$ ' or better, or
3. Completion of at least fifty-two semester (seventy-eight quarter) credits and demonstration of competencies through a testing program as prescribed by the Office of Admissions of Wayne State University.

While only fifty-two credits in pre-professional college work are required for admission to the Professional Program, sixty credits in preprofessional college work are required for graduation. Students who do not have the full sixty credits will not be granted the Certificate in Mortuary Science until after this deficiency is removed. The granting of preprofessional course credit in mortuary science by examination only (e.g., CLEP) is not acceptable in lieu of formal course registration and satisfactory completion of course requirements (e.g., lecture and laboratory).

Conditional/Probationary Admission: Applicants to the professional program in mortuary science with an honor point average of less than 2.0 may, at the discretion of the Departmental admissions committee, be admitted on a part-time, conditional basis for the semester of initial registration and enrollment.

Part-time, conditional registration for the initial or any subsequent semester will be limited to ten credits in course work. The conditional registrant must earn a minimum honor point average of 2.0 to qualify for registration(s) in subsequent semesters of professional program course offerings.

Physical Examination: All applicants, including transfer students from Colleges within Wayne State University, are required to submit a completed physical examination form to the Department of Mortuary Science. A health evaluation report, issued by the University physician or designee, must be presented prior to admission to departmental classes.

## Certificate Requirements

To receive a Certificate in Mortuary Science, a student must have presented evidence of satisfactory completion of sixty credits in pre-professional college work including the preprofessional courses required for admission (above), and must have satisfactorily completed thirty-eight credits in professional mortuary science courses as described below.

Time Limitation: Full-time and/or part-time registration in the professional program is limited to a maximum of four semesters. The registrant/enrolee is expected to complete the requirements for certification within two academic years, or four semesters. Any exception to this policy must have prior written approval of the departmental director or his designee.
PROFESSIONAL PROGRAM
Third Year
Fifth Semester Credits
M S 310-Chemistry .....  4
M S 350-Embalming ..... 3
M S 360-Restorative Art and Modeling I .....  2
M S 375-Mortuary Accounting .....  3
M S 380-Mortuary Management 1 ..... 3
M S 405-Human Anatomy and Physiology ..... 4
Total: 19
Sixth Semester
M S 340-Mortuary Law .....  3
M S 351-Embalming I .....  3
M S 361-Restorative Att and Modeling II .....  2
M S 381-Mortuary Management II .....
M S 390-Psychology of funeral Service .....  2
M S 425-Microbiology. .....  .4
MS 430-Medical Science ..... 2
Total: 19
Bachelor of Science ..... in Mortuary Science

Admission: The Bachelor of Science degree in mortuary science is based on the same two years of preprofessional course work and third year of professional course work which constitutes the Three-Year Certificate Program. For preprofessional admission and professional admission applicable to the degree program, see above, page 386.

DEGREE REQUIREMENTS: The candidate for the degree of Bachelor of Science in Mortuary Science must satisfactorily complete the following 128 credits with an honor point average of at least 2.00:
a. Two-Year Preprofessional Program (see above) ..... 60 credits
b. Third-Year Professional Program (see above) ..... 38 credits
c. Senior year (see below) ..... 30 credits
Completion of this program satisfies all Departmental subject areagroup requirements as well as the University General EducationRequirements.
Bachelor of Science Senior Year
Seventh Semester Credits
ANT 211-(SS) Introduction to Physical Anthropology ..... 4
PHI 111-Ethical Issues in Health Care .....  3
HUM 101 - (VP) Introduction to Art \& Music in Western Civilization. ..... 4
One Course in Foreign Culture (FC). .....  3

## Eighth Semester

ANT 514 - Biology and Culture .....  3
SOC 330 - (SS) Social Institutions and Social Structure ..... 3
HUM 101-(VP) Introduction to Art and Music in Western Civilization. ..... 4
M S 596-Mortuary Science Senior Seminar ..... 2
Electives. ..... 13
Total: 21
ACADEMIC PROCEDURES
For complete information regarding academic rules and regulations ofthe University and of the Faculty of Allied Health Professions,students should consult the sections in this bulletin beginning on pages5 and 378, respectively. The following additions and amendmentspertain to the Department of Mortuary Science.

## Attendance/Exclusion

Students are expected to adhere to departmental attendance requirements. Anticipated absence from lecture or laboratory classes should be reported to the appropriate faculty member. A student may be excluded from the program for irresponsible attendance and/or irresponsible performance in practicum assignments.

## Appellate Procedure for Course Grade Review

Following the departmental submission of grades in a professional course area and in the event of a student's objection to the submitted grade, the student may appeal the objection to the Departmental Faculty Committee during a regularly scheduled meeting. The appellate procedure should be initiated by directing a letter of request for such a review to the Chairperson, Department of Mortuary Science.

## Fees-Professional Program

Mortuary Science fees are the same as Graduate School fees and are subject to change at any time by action of the Board of Governors.
Resident
$\$ 40.00$ plus $\$ 95.50$ per credit.
Non-Resident $\$ 40.00$ plus $\$ 207.50$ per credit.

## Financial Aids

Students in the Department of Mortuary Science are eligible for scholarships and loans available to all University students. Inquiries should be directed to the University Office of Scholarships and Financial Aids, 222 Administrative Services Building.

In addition, students enrolled in the third or professional year of the mortuary science program are eligible to apply for loans made available by the Michigan Mortuary Science Foundation. Inquiries should be directed to the Executive Director, Michigan Funeral Directors' Association.

## Vocational Guidance and Placement

Men and women contemplating careers in mortuary science may take advantage of the Department's and University's counseling services. Every effort is made by the Department staff to acquaint the applicant with the vocational aspects of the profession. Students are assisted in securing part-time employment in funeral homes upon request.

## Michigan State Licensure

To become a licensed mortician in the State of Michigan one must:

1. Complete two academic years ( 60 semester credits) of instruction at any regionally accredited or recognized collegiate institution, with grades of C or better, and include required courses as determined by the State Board;
2. Graduate from a regionally approved program of mortuary science. Applicants for a Michigan license must register with the State Board of Mortuary Science before entering a mortuary science college;
3. Complete one year of resident training under the personal supervision of a licensed mortician. The Board may waive the requirement of one year of resident training if the applicant has an additional year of instruction in a program duly accredited beyond the three years prescribed. Special application must be made to the Board for waiver of resident training;
4. Pass examinations as determined by the State Board;
5. Be at least eighteen years of age, a resident of Michigan, a citizen of the United States, and of good moral character. For further information, address: State Board of Mortuary Science, P.O. Box 30018, Lansing, Michigan 48909.

## COURSES OF INSTRUCTION¹ (M S)

## 310. Chemistry. Cr. 4

Material fee as indicated in Schedule of Classes. Review of general inorganic chemistry; survey of organic and biochemistry; applications to postmortem changes, biologic preservation, and embalming chemistry.

## 340. Mortuary Law. Cr. 3

Legal methods of disposition of human remains; legal responsibilities of the funeral service practitioner; common and statutory laws, state laws regulating funeral service practices and establishments; interment and disinterment; probate law; cemetery regulations; transporting of human remains.

## 350. Embalming I. Cr. 3

Material fee as indicated in Schedule of Classes. Theories, practices, and techniques of biologic preservation and disinfection of human remains; case analyses; methods of application of embalming chemicals; use of special instruments and equipment; special case embalming. Laboratory teaching of all practical aspects of embalming.

## 351. Embalming II. Cr. 3

Prereq: M S 350. Material fee as indicated in Schedule of Classes. Continuation of M S 350.

## 360. Restorative Art and Modeling I. Cr. 2

Material fee as indicated in Schedule of Classes. Theories, methods, and techniques used in the restoration of superficial tissues and features; color theory, cosmetology, facial proportions, skin tones correlated with reconstruction; clay and wax modeling; actual restorations performed on human remains.
361. Restorative Art and Modeling II. Cr. 2

Prereq: M S 360. Material fee as indicated in Schedule of Classes. Continuation of M S 360 .

See page 433 for interpretation of numbering system, signs and
abbreviations
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## 375. Mortuary Accounting. Cr. 3

Basic accounting principles and practices; development of systematic accounting records for funeral service practices; preparation and interpretation of financial statements.
380. Mortuary Management I. Cr. 3

Funeral service practices, terminology, ethics; procedures pertinent to planning, building, and establishing a funeral home; personnel management; religious, ethnic, fraternal, and military practices; merchandising; vital statistics records and forms, public relations. (F)
381. Mortuary Management II. Cr. 3

Prereq: M S 380. Continuation of M S 380.
390. Psychology of Funeral Service. Cr. 2

Psychology of grief and bereavement; role of the funeral director in counseling the bereaved; sociology of change as related to death, dying and disposition; psychology of funeral service practices.
405. Human Anatomy and Physiology. Cr. 4

Material fee as indicated in Schedule of Classes. Lecture-demonstration; laboratory dissection; regional and systemic study of anatomy and physiology; emphasis on vascular anatomy and adjacent structural relationships; anatomic guides; topographic anatomy and terminology.

## 425. Microbiology. Cr. 4

Material fee as indicated in Schedule of Classes. A study of pathogenic microbial agents; host-parasite relationships; disinfection-decontamination; immunology; epidemiology of infectious disease. Microscopy, staining technology; differentiation and identification of bacteria; evaluation of chemical disinfectants. Lecture and laboratory.

## 430. Medical Science. Cr. 2

Study of infectious and chronic diseases; body defense mechanisms; etiology of disease as related to handling and preparation of human remains; autopsy procedures.
596. Mortuary Science Senior Seminar. Cr. 2

Prereq: mortuary science degree applicant.

# OCCUPATIONAL THERAPY 

Office: 311 Shapero Hall<br>Chairperson: Miriam C. Freeling

## Professor

H. Barbara Jewett (Emerita)

## Associate Professor

Suesetta McCree

## Assistant Professors

Karmen Brown, Miriam Freeling, Nancy J. Powell

## Lecturer

Georgiana Herzberg

## Cooperating Faculty

Fred Attebury, Merlin Ekstrom, Eberhard Mammen, Robert Pohl, Martha Rodin, Susan Schantz, Thomas Sullivan

## Field Work Supervisors

Mary Adams, Mary Audia, Marian Baker, Mary Barclay, Royanne Baril, Angie Baycie, Johanna Brady, Gary Bykowsky, Pearl Ciaramitara, Gerry Conti, Valerie Cuschieri, Pat Davion, Mary Delamora, Margo Dexter, Marguerite Dosetelle, Joanne Douglas, Rosalie Drake, Kathy Dufault, Donna Dykstra, Carrie Edwards-Welch, Paula Ellias, Kathy Fedon, Karen Flora, Ruth Fried, Kathy Gabe, Kathie Gonyeau, Joyce Gordon-Raiford, Donna Gravley, Patricia Griswald, Deborah Groth, Gloria Grubin, Ruth Grummon, Colleen Harding, Caroll Hass, Geraldine Howard, Beverld Jacober, Sherrie Jaarsma, Joan Johnson, Jan Kitzmore, Kathy Kaufman, Rosalie King, Linda Knudson-Lind, Toni Kowamato, Susan Koziatek, Jane Lingo, Patricia Lowenstein, Donna Lucke, Sue Maddux, Patty Mahoney, Melanie Melaas, Margo Mansfield, Dawn McDuffy, Katherine McGuire, Terry Meller, Kathy Miller, Laura Miller, Judy Mortenson, Cheryl Constance Rance, Cynthia Ricco, Susan Robson, Gretchen Rose, Lelly Sargant, Elizabeth Scheld, Nancy Schildgen, Mary Slingerland, Donna Sokoly, Judy Stern, Rebecca Taylor, Toni Thompkins, Kim Vasko-Hafer, Mary Waldschmidt, Patricia Warnecke, Judith Wayne, Kay Wizenski, Kim Wolfe, Marilyn Zasuwa

## Degree Programs

## Bachelor of Science in Occupational Therapy

Post-Bachelor Certificate in Occupational Therapy

## - Master of Science in Occupational Therapy

Occupational therapy is the art and science of directing man's participation in selected tasks of self-care, work and play in order to restore, reinforce and enhance performance, to diminish or correct pathology, and to promote and maintain health. Such therapy provides service to those individuals whose abilities to cope with tasks of living are threatened or impaired by developmental deficits, physical injury or illness, psychological and social problems, the aging process, and the effects of economic and cultural barriers.

[^82]Programs: This department offers occupational therapy education leading to either a baccalaureate degree or a post-bachelor certificate. The bachelor's degree program, consisting of two years of preprofessional course work and two and one-half years of professional study, is designed for the incoming freshman to the University. The post-bachelor certificate program is for the student who holds a baccalaureate degree acceptable to Wayne State University, who has satisfactorily completed all professional requirements and who does not wish to qualify for the degree, Bachelor of Science in Occupational Therapy. However, a student who holds a baccalaureate degree may wish to satisfy all preprofessional and professional requirements and receive a Bachelor of Science in Occupational Therapy as a second baccalaureate degree.

The professional program, taken in the College of Pharmacy and Allied Health Professions, is designed for full-time or part-time enrollment. Both degree and certificate students must be formally accepted by the College of Pharmacy and Allied Health Professions before admission to the professional courses.

Accreditation: Wayne State University offers courses of study which are accredited by the Committee on Allied Health Education and Accreditation of the American Medical Association in collaboration with the American Occupational Therapy Association, and which prepare the student to take the national certification examination.

## Bachelor of Science

in Occupational Therapy

## Admission

Preprofessional: Incoming freshmen, intending to pursue the Bachelor of Science in Occupational Therapy degree, must first complete two years of preprofessional study in the College of Liberal Arts. The admission requirements for that College are satisfied by regular undergraduate admission to the University; see page 13.

The following curriculum is required of all degree candidates for subsequent admission to professional study in the Department of Occupational Therapy.
PREPROFESSIONAL PROGRAM Credits
AED 526 - Methods and Materials: Wood, Metal, and Plastic .....  2
B10 101 - (LS) Basic Biology I .....  .4
B10 287 - Anatomy and Physiology .....  5
CHM 102 - (PS) General Chemistry 1 .....  .4
CSC 100 - (CL) Introduction to Computer Science .....  3
ECO 101 - (SS) Principles of Macroeconomics .....  .4
ENG 102 -(BC) Introductory College Writing .....  4
ENG 301 - (IC) Intermediate Writing .....  3
MAT 180 - Elementary Functions .....  4
0 T 205 - Therapeutic Activities ..... $\ldots$
0 T 320 - Life Tasks .....  2
PS 101-(Al) American Government. .....
PHI 105 - (CT) Critical Thinking ..... 3
PHY 213 - (PS) General Physics .....  .4
PSY 102 - (LS) Elements of Psychology .....  3
PSY 331 - Abnormal Psychology .....  .4
SOC 200 - (SS) Understanding Human Society .....  3
SPB 101 - (OC) Oral Communication: Basic Speech .....
SPC 520 - Group Communication and Human Interaction. .....  3
UGE 100 - (GE) The University and its Libraries .....  1

General Education Requirements: Candidates for the bachelor's degree must complete twelve credits in the following areas, to satisfy the remaining University Requirements in General Education (see page
20). While requirements in English, mathematics, and American government are fulfilled by courses cited in the preprofessional program above, the following areas are also required:


Visual and Performing Arts (VP).................................................................... 3
Philosophy and Letters (PL)......................................................................... 3
It is expected that students will complete these requirements before entry into the professional program.

Professional Program Admission: An application for admission to the professional program may be submitted to the Department of Occupational Therapy any time up to February 15 of the year the student wishes to be considered for enrollment. In addition to the application, the student must:

1. hold a minimum cumulative honor point average of $2.5(\mathrm{~A}=4.0)$ for the sixty-five preprofessional credits listed above.
2. hold a minimum combined honor point average of 2.5 for the following science courses: Biology 101, 287, Chemistry 102, and Physics 213.
3. hold a combined honor point average of 2.5 for the following behavioral courses: Psychology 102, 331, and Speech (SPC) 520.
4. participate in and receive a passing score in a group interview conducted by Wayne State University occupational therapy faculty. (Special arrangements can be made for applicants who live a great distance from the Detroit area and cannot attend the interview session.)

## Degree Requirements

The Bachelor of Science degree requires 149 credits in course work including sixty-five credits in preprofessional study (see above), seventy-two credits in professional courses (see below), and twelve credits satisfying additional University General Education Requirements (see above). The professional program consists of six semesters of full-time academic work followed by six months of full-time field work experience. During the professional program the student must complete the following courses in basic and medical science, and occupational therapy theory and practice, as well as related health science courses. Upon satisfactory completion of the degree, the graduate is eligible for examination and certification procedures of the American Occupational Therapy Certification Board.

## PROFESSIONAL PROGRAM <br> Credits

ANA 303 - Anatomy ................................................................................................ 3
ANA 304 - Human Neuroanatomy and Neurophysiology......................................... 2
IHS 310 - Basic Mechanisms of Human Disease I .............................................. 5
IHS 320 - Basic Mechanisms of Human Disease II ......................................................

0 T 310 - Clinical Psychiatry ........................................................................ 4

0 T 330 - Concepts in Kinesiology for Occupational Therapy ................................ 4
0 T 340 - Clinical Medicine ...........................................................................................
0 T 407 - Roles and Functions I.................................................................. 2
0 T 408 - Roles and Functions II.................................................................. 2
0 T 420 - Theory and Practice I .................................................................. 4
0 T 421 - Theory and Practice II................................................................. 4
0 T 422 - Theory and Practice III................................................................ 3
0 T 423 - Theory and Practice IV .................................................................... 5
0 T 426 - Level I Field Work Experience ........................................................ 1
OT 430 - Client Issues in Occupational Therapy .....  .1
$0 T 435$ - Occupational Therapy Seminar. .....  3
0 T 450 - Social and Organizational Aspects of Health Care. .....  .2
OT 460 - Group Process as an Occupational Therapy Modality .....  1
0 T 498 - Field Work I (see below) .....  .5
0 T 499 - Field Work II (see below). .....  .5
PSY 241 - Human Development and Health .....  3
Courses required if not completed as preprofessional program electives:
0 T 205 - Therapeutic Activities .....  2
OT 320 - Life Tasks .....  .2
AED 526 - Methods and Material: Woods, Metal, and Plastic .....  .2Total: 77

Field Work: During the final portion of the curriculum, the student must participate in two full-time three-month field experiences ( O T 498, 499) which serve to integrate the theoretical aspects of occupational therapy with practical application under the supervision of qualified therapists. These field experiences may take place within and outside the Detroit metropolitan area. All placements are carefully selected to provide experiences essential to enhance the application of the student's knowledge of the profession.

## Post Bachelor's Certificate Program

Admission: Applicants to the certificate program must comply with the professional program admission requirements 2 through 4 (see above), as well as complete the following preprofessional courses or their equivalents:
credits
AED 526 - Methods and Materials: Wood, Metal, Plastic .....  2
B10 101 - (LS) Basic Biology I .....  4
BIO 287 - Anatomy and Physiology .....  5
CHM 102 - (PS) General Chemistry I .....
0 T 205 - Therapeutic Activities .....  2
0 T 320 - Life Tasks ..... 2
PHY 213 - (PS) General Physics .....  .4
PSY 102 - (LS) Elements of Psychology .....  3
PSY 331 - Abnormal Psychology .....  4
SPC 520 - Group Communication and Human Interaction .....  3

CERTIFICATE REQUIREMENTS: Candidates for the certificate must complete seventy-seven credits of course work as outlined in the professional program for the Bachelor's degree; see above. Upon completion of the program, including six months field work, the student will be granted a Post-Bachelor's Certificate in Occupational Therapy from Wayne State University. The graduate is then eligible for the examination and certification procedures of the American Occupational Therapy Certification Board.

## Student Aid

The University offers opportunities to students in need of financial assistance to meet the expenses of their education. Information about scholarships and loans is available from the University Office of Scholarships and Financial Aids, 222 Administrative Services Building, Detroit, Michigan 48202.

In addition, a limited amount of financial assistance is available to qualified students in the professional level occupational therapy program. Information may be obtained from the Chairperson of the Department.

## Scholarships, Honors and Awards

The Sister Elizabeth Kenny Honor Award is presented to a senior student who, throughout his/her professional program, demonstrated outstanding scholarship, leadership and professional interest.

The Honor Graduate of the Year A ward recognizes the senior student who, upon completion of his/her academic program, has attained the highest scholarship of the senior class.

The Occupational Therapy Chairman's Award is presented to the senior student who has made outstanding contributions to the department while demonstrating initiative, cooperation and responsibility.

The Barbara Jewett Scholarship Award is presented by the Wayne State University Occupational Therapy Alumnae Association, to deserving professional students to assist them in their educational pursuits.

## Student Professional Activities

All professional level students are encouraged to become members of the American Occupational Therapy Association, as well as the Michigan Occupational Therapy Association, and any of the local professional organizations: the Detroit District, the North Metro, and the Huron Valley Occupational Therapy Associations.

The Occupational Therapy Club at Wayne State University is open to all preprofessional and professional level occupational therapy students and faculty. Meetings provide opportunities to develop professional understanding, to participate in service projects and to enjoy contact with other occupational therapy students and faculty.

The Minority Occupational Therapy Student Organization's primary efforts are to introduce minority students to the field of occupational therapy, to recruit prospective high school minority students into the occupational therapy program, and, most specifically, to take necessary measures to retain minority students within the program. This organization contributes service and support to community health care organizations.

Pi Theta Epsilon, Eta Chapter, is the occupational therapy honor fraternity. To be eligible, a student must 1) be in the top twenty-five percent of the class, 2 ) have achieved a $3.3(4.0=$ A) cumulative grade point average, and 3) have successfully completed all prerequisite classes for the curriculum. High academic standing is recognized and opportunities are provided for members to participate in service projects and professional activities in the community and the college.

## COURSES OF INSTRUCTION¹ (O D)

201. Survey of Occupational Therapy. Cr. 2

Overview of the services provided through occupational therapy in the health care delivery system. Field observations in organized occupational therapy departments.
(F,W)

## 205. Therapeutic Activities. Cr. 2

Leadership techniques employed in the use of recreational activities as therapy.
(F,W)
300. Introduction to Occupational Therapy. Cr. 3

Prereq: admission to the occupational therapy professional program. Material fee as indicated in Schedule of Classes. Introduction to the processes and procedures utilized by the occupational therapist: observation, interview, communication and skills gained through interaction with normal individuals from infancy through senescence.
310. Clinical Psychiatry. Cr. 4

Prereq: PSY 331 and consent of adviser. Study of the major categories of psychiatric conditions and their clinical treatment including psychiatric interview and crisis intervention techniques. Lecture, demonstration, participation and field experience.
320. Life Tasks. Cr. 2

Material fee as indicated in Schedule of Classes. Performance, adaptation and utilization of processes involved in selected creative and manual tasks and activities which have therapeutic value. Principles and methods of teaching appropriate to the therapist. ( $F, S$ )
325. Therapeutic Use of Occupation. Cr. 1

Prereq: consent of adviser. Theories of the use of purposeful occupation; meaning and dynamics of occupation. Analysis, adaptation and application of occupation as therapeutic intervention.
(W)
330. Concepts in Kinesiology for Occupational Therapy. Cr. 3

Prereq: PHY 213, ANA 303. Material fee as indicated in Schedule of Classes. Lecture and laboratory on human movement concepts prerequisite to the understanding of occupational therapy procedures applicable to patients with physical or sensory-integrative dysfunction.
340. Clinical Medicine. (P T 340). Cr, 4

Prereq: consent of adviser. Material fee as indicated in Schedule of Classes. A series of interdisciplinary presentations on the clinical manifestations and management of selected problems due to disease states or injury; includes etiology, assessment, course and medical specialty management of the problems.
407. Roles and Functions I. Cr. 2

Prereq: consent of adviser. Basic introduction to research and statistical methods in occupational therapy. Elementary computer use in occupational therapy research.

## 408. Roles and Functions II. Cr. 2

Prereq: consent of adviser. Organizational and administrative structure and functions of occupational therapy service programs; emphasis on communication techniques, personnel management and supervision, program and space planning, budgeting and legal implications of a service unit. Development of occupational therapy services and programs.

[^83]420. Theory and Practice I. Cr. 4

Prereq: O T 310 and consent of adviser. Material fee as indicated in Schedule of Classes. Occupational therapy in mental health practice; evaluation, treatment planning, reporting and an overview of mental health theories. Lecture, class participation and field experience.
( $\mathrm{F}, \mathrm{W}$ )

## 421. Theory and Practice II. Cr. 4

Prereq. or coreq: O T 340; prereq: 330, consent of adviser. Material fee as indicated in Schedule of Classes. Instruction, laboratory and field experience in occupational therapy theory and procedures. Includes activities of daily living, leisure time activities, therapeutic exercise, splinting and prevocational evaluation.

## 422. Theory and Practice III. Cr. 3

Prereq: O T 421. Material fee as indicated in Schedule of Classes. Continuation of OT 421.
423. Theory and Practice IV. Cr. 5

Prereq: ANA 304, O T 340, consent of adviser. Material fee as indicated in Schedule of Classes. Study of the neurophysiologically-based treatment approaches in occupational therapy for patients with central nervous system dysfunction; includes occupational therapy in school systems.
(F,W)
426. Level I Field Work Experience. Cr. 1

Prereq: consent of occupational therapy adviser. Offered for $S$ and $U$ grades only. Experience in affiliated agencies under supervision of on-site occupational therapist.
430. Client Issues in Occupational Therapy. Cr. 1

Prereq: senior standing in occupational therapy. Workshop presentation of role of the occupational therapist in the psychological and sexual adjustment of the physically disabled.
435. Occupational Therapy Seminar. Cr. 3

Prereq: consent of adviser. Correlation of social, cuitural, physical, economic and psychological aspects of illnesses with occupational therapy theory and practice. Discussion and field experience. (W,S)
450. Social and Organizational Aspects of Health Care. Cr. 2

Prereq: introductory sociology courses. Health care systems, organization and financing of health care services and resources available.
(W)
460. Group Process as an Occupational Therapy Modality. Cr. 1 Prereq: consent of adviser. Experiential approach to learning group dynamics and effective group skills. Development of self-awareness and social skills necessary in building practical group skills. (F,W)
490. Directed Study. Cr. 1-2(Max. 5)

Prereq: consent of adviser.
498. Field Work I. Cr. 5

Prereq: consent of adviser. Three months of supervised field work experience in affiliated health care agencies.
499. Field Work II. Cr. 5

Prereq: consent of adviser. Three months of supervised field work experience in affiliated health care agencies.

## PHYSICAL THERAPY

## Office: 439 Shapero Hall

Chairperson: Mable B. Sharp

## Assistant Professors

Roberta F. Cottman, Mable B. Sharp, Susan A. Talley

## Part-Time Instructor

Barbara G. Rubenstein

## Adjunct Assistant Professors

Heather Hamilton, Peter Kovacek, James Pipp, Kathleen Vielhaber

## Adjunct Instructors

Ronald Clinton, Michele Denes, Donna LaFata, Judith Marchwinski, Suzanne Portner

## Cooperating Faculty

Maurice Castle, Jerome Cuillo, Merlin Ekstrom, Voigt Hodgson, Felix Hong, Leslie Isler, Melissa Kaplan, Robert Louis-Ferdinand, Joseph Posch, Martha Rodin, John Wirth

## Course Participants

Betty Jane Blossfeld, Patricia Debear, Paula Denison, Loren DeVinney, Angelo DiMaggio, Nancy Felcyn, Karen Johnstone, Kathleen Kovacek, Sharon Roy, Kenneth Woodward

## Center Coordinators of Clinical Education

Susan Allaben, Michelle Allen, Gita Amini, Rose-Mary Atkinson, Rita Ball, Sandy Baker, Michael Beauvais, Tim Bennett, Debbie Beresford, Michele Blair, Ruth Boersma, Susan Bourque, Ron Brickey, Jan Brock, Marj Bryen, Kathy Burke, Jennifer Cantrell, Leslie Carpenter, Paulette Cebulski, Allan Colestock, Theresa Commet, Renee Cottrell, Harry Covington, Marianne Damon, Mary DeAngelo, Eileen Dickenson, Toni Dickieson, Cheryl Dix, Mary Dove, Marylynne Drumheller, A.J. Duffy, Maria Durakovic, Bryan Durham, John Eggart, Sandy Ellery, Sandra Flack, Debra Fox, Dale Freels, Diane Galang, Lee Ganger, Elizabeth Garrad, Kristine Gasper, Jan Graham, Sue Greco, Jessie Gross, Janet Gruber, Debbie Guba, Nancy Guttendorf, Karen Haney, Judith Harris, Kris Hendrickson, Barbara Henry, Carol Hinson, Walter Hylton, Sharyn Hyman, Sue Ievoli, Diann Inch, Jackie Johnson, Sue Johnson, Diane Kapelanski, Laura Kasson, Yvonne Katharopoulos, Frank Kava, Barbara Kaye, Paul Kerasiotis, Casey Kern, Bruce Kramer, Dorinda Kroymann, Faye Kwapis, Sharon Last, Laura Lazar, Nancy Lomax, Kathleen Lorenz, Christine Lorimer, Debbie Maas, James MacDonald, Sue Ann Mason, Donna McMasters, Laurie Mercer, Linda Meyers, Terry Mikolic, Cathy Miner-Lehr, Angela Moylan, Merodie Mullis, Jeanne Newell, Georgianne Palmer, Nancy Pennington, Julie Perkins, Pamela Perkins, Janet Perticove, Karen Porter, Susan Quagliotto, Mary Lou Qualtrogh, Sandra Radtka, Shelly Ratkov, Allison Reed, Carol Rehder, George Rowley, Chris Sepper, Virginia Shaw, Linda Simonsen, Dolly Smith, Johnny Smith, Donna Soave, Ken Soave, Janice Stamp, Stephen Stewart, Craig Strong, Doreen Sukenic, Penny Suwinsky, Ralph Sweitheim, Milt Thackaberry, Sylvia Thompson, Allan Trumbull, Edmond Turton, Janice VanDusen, John Vargo, Vicky Weatherell, Maria Wilt, Jan Wohlgemuth, Doug Zastro, Rose Ziaja

## Degree Program

## Bachelor of Science in Physical Therapy

Physical Therapy is a dynamic health profession which develops and utilizes selected knowledge, skills and techniques in planning, organizing, and directing programs for the care of individuals whose ability to function is impaired or threatened by disease or injury. This discipline focuses primarily on those individuals whose potential or actual impairment is related to neuro-musculoskeletal, pulmonary and cardiovascular systems. Physical therapy utilizes methods of evaluating the function of these systems and selects appropriate therapeutic procedures to prevent dysfunction, to maintain, and to improve or restore the function of these systems. Physical therapy incorporates a broad spectrum of activities such as direct patient care, consultation, administration, supervision, teaching and community service.

The physical therapy practitioner may choose employment in a wide variety of settings such as departments of physical therapy in general or specialized hospitals, schools and agencies for handicapped children, centers for rehabilitation and research, the offices of private physical therapists, sports clinics and home care. The practitioner may choose to teach in a college or university where a physical therapy education program exists.

## Bachelor of Science in Physical Therapy

The program leading to the Bachelor of Science in Physical Therapy is offered by the College of Pharmacy and Allied Health Professions of Wayne State University in cooperation with the College of Liberal Arts and the School of Medicine. Students who already hold an undergraduate degree are eligible to receive a second bachelor's degree. The program of study in physical therapy is accredited by the American Physical Therapy Association. Graduates of the Program are eligible to take physical therapy licensure examinations and for active membership in the American Physical Therapy Association.

## Admission

Preprofessional Program: The first two years (pre-professional program) are taken in the College of Liberal Arts, the admission requirements of which are satisfied by admission to the University; see page 13. It is recommended that students interested in the professional program in physical therapy have the following high school courses: biology, chemistry, foreign language, physics, geometry and intermediate algebra. Freshmen and transfer students may obtain application forms for admission to the College of Liberal Arts from the University Office of Admissions.

## PREPROFESSIONAL PROGRAM

## First and Second Years

## credits

B10 101 - (LS) Basic Biology I.................................................................... 4
B10 102 - Basic Biology II......................................................................... 4
Advanced Biology (BIO 271, or B10 340 \& 341, recommended) .............................. 5-6
CHM 107 or CHM 105

$$
\text { -(PS) Principles of Chemistry I .......................................................... } 4
$$

- (PS) Introductory Principtes of Chemistry.....................................................

BCH 101 or CHM 103

- Introductory Biochemistry (strongly recommended).............................. 2

ENG 102 - (BC) Introductory College Writing ..... 4
ENG 301 or ENG 303
- (IC) Intermediate Writing .....  3
-(IC) Writing the Research Paper ..... 3
Humanities elective. .....  3
MAT 180 - Elementary Functions. ..... 4
Introductory statistics (PSY 410 or EER 763 or PSL 767 suggested). .....  .4
PHY 213 - (PS) General Physics. ..... 4
PHY 214 - General Physics ..... 4
PSY 101 - (LS) Introductory Psychology. ..... 4
Psychology elective. .....  .4
Human development (PSY 240 or PSY 549) ..... 3-4
Political Science (P S 101 or PS 103 or HIS 103, or HIS 204 and HIS 205, or HIS 516 and HIS 517). ..... 48
Electives. .....  3

Total: 63-73

Professional Program Admission: Students interested in entering the professional program in physical therapy must contact the Department of Physical Therapy for information and application materials. Students applying to the professional program must have completed the preprofessional program as listed above, or their equivalent, by May of the year of which admission is sought; have a minimum honor point average of 2.8 in all course work and in prerequisite sciences; be in good health; and possess the personal qualifications necessary for the professional responsibilities of a physical therapist. Admission is competitive. Applications for the professional program must be received in the Department of Physical Therapy by January 15. The professional program begins in the summer semester of each year. Thirty-six students are accepted. The professional program is two and one-half years in length.

All applicants to the professional program are required to take the Allied Health Professions Admission Test (AHPAT). University English and Mathematics Proficiency requirements must also be successfully completed.

A personal interview may be scheduled for qualified applicants. The interview will assist the Department in determining whether applicants have the personal qualifications necessary for the profession by assessing maturity, motivation and communication skills. Students will also be expected to be able to articulate their knowledge of self, physical therapy, and health care in general.

Professional courses and/or professional program admission requirements are subject to change without notification. The curriculum may change because of professional entry into practice requirements which may be separate from academic requirements. It is the student's responsibility to obtain up-to-date information regarding the program from the Department of Physical Therapy, Wayne State University.

## Degree Requirements

Candidates for the Bachelor of Science in Physical Therapy must complete 150 credits distributed between the preprofessional program (see above) and the following professional program. The professional program comprises seven and one-half semesters (ninety-two credits) of intense study in the field of physical therapy.

## PROFESSIONAL PROGRAM

## Third Year

credits
ANA 303 - Anatomy .....  3
ANA 304 - Human Neuroanatomy and Neurophysiology .....
IHS 310 - Basic Mechanisms of Human Disease I ..... 5
IHS 320 - Basic Mechanisms of Human Disease II ..... 5
IHS 321 - Basic Mechanisms of Human Disease: Laboratory .....  1
IHS 330 - Pharmacology for Allied Health Professions. .....  1
PSY 242 - Applied Human Development: Laboratory ..... 2
P T 310 - Communications in Health Care. .....  1
P T 312 - Human Growth and Development ..... 3
P T 320 - Basic Evaluation Procedures. ..... 3
P T 322 - Basic Therapeutic Procedures .....  3
P T 340 - Clinical Medicine .....
P T 341 - Special Topics in Clinical Medicine ..... 1
P T 342 - Kinesiology .....  4
P T 344 - Fundamentals of Patient Care .....  2
PT 346 - Integrated Physiology .....
P T 360 -Orthotics .....  2
P T 370 - Principles of Investigation ..... 2
P T 380 - Clinical Education I .....  1

## Fourth Year

P T 410 - Psycho-Social Aspects of Health Care. .....  2
P T 411 - Organization and Management of Health Care Systems .....  3
PT 420 - Physical Agents ..... 4
P T 426 - Management of Patients with Orthopedic Conditions .....
P T 427 - Management of Patients with Orthopedic Conditions II ..... 2
P T 451 - Assessment of Patients with Neurological Disorders ..... 2
P T 452 - Therapeutic Procedures for Patients with Neurological Disorders .....  .4
PT 460 - Rehabilitation Procedures I .....
P T 461 - Rehabilitation Procedures II. .....
P T 464 - Management of Patients with Cardiopulmonary Disorders .....  2
P T 470 - Research Practicum .....  2
PT 480 - Clinical Education II. .....  2
P T 482 - Clinical Decision Making in Physical Therapy .....  1
PT 484 - Seminar in Physical Therapy. .....  2
P T 486 - Clinical Education III .....  9
Elective ..... 2-4
Total: 45-47
Electives
Credits
P T 414 - Introduction to Pediatric Physical Therapy PT 428 - Special Topics in Orthopedic Physical Therapy .....  3 .....  3
2-4PT 472 - Independent Research
-8
P T 490 - Directed Study ..... 14
P T 500 - Perspectives in Geriatrics .....  3 -4
P T 505 - Introduction to Developmental Disabilities ..... 3-4

Liability Insurance: Clinical Education is provided throughout the professional program along with didactic courses. The final eighteen weeks of the program is comprised of three six-week clinical assignments in selected clinical facilities throughout the metropolitan Detroit area, Michigan and other parts of the country. The student is responsible for the cost of the clinical education portion of the program, including liability insurance which must be purchased prior to the start of P T 380, Clinical Education I.

Scholarship: The Department of Physical Therapy has strict regulations regarding probation and dismissal from the professional program. The student whose honor point average falls below 2.8 or who receives a ' $D$ ' in a course is placed on probation for the following semester. Probationary status must be removed by the end of that semester. Students are dismissed from the program upon receiving two 'Ds' or an ' $E$ ' during the professional program.

University General Education Requirements: In addition to the professional course requirements, students must also complete the University General Education Requirements in order to receive the Bachelor of Science in Physical Therapy degree. Those requirements which are not part of the current professional program are listed below with Departmental course recommendations.

| Recommended Courses and Topic Areas | Credits |
| :---: | :---: |
| SPB 101............ Oral Communication. |  |
| UGE 100............ The University and its Libraries.... | ........ 1 |
| Elective .............Historical Studies .... |  |
| CSC 101............Computer Literacy. |  |
| PHI 105 .............Critical Thinking. |  |
| Elective.............Foreign Culture.. |  |
| Elective............Visual and Performing Arts. |  |

## Financial Aid

The University offers opportunities to students in need of financial assistance to meet the expenses of their education. Information about scholarships and loans is available from the University Office of Scholarships and Financial Aids, 2 East, HNJ Student Services Center, Detroit, Michigan 48202. In addition, the Physical Therapy Emergency Student Loan fund has been established to assist students in good standing in this discipline. Information regarding this and other financial aids for physical therapy students may be obtained from the Department Office.

## COURSES OF INSTRUCTION ${ }^{1}$ <br> Anatomy (ANA)

## 303. Anatomy. Cr. 3

Open only to students in Allied Health Programs. Material fee as indicated in Schedule of Classes. Dissection and prosection; emphasis on neuromuscular system and functional correlation.
304. Human Neuroanatomy and Neurophysiology. Cr. 2

Prereq: IHS 310, IHS 320. Study of human central nervous system; emphasis on sensory systems and structures which contribute to normal movement; lecture and laboratory.

## Physical Therapy (P T)

## 310. Communications in Health Care. Cr. 1

Prereq: consent of adviser. Basic communication skills utilized in health care with application to the practice of physical therapy. Verbal and non-verbal behavior, physical therapy notes, observation skills and teaching techniques for the physical therapist.

## 312. Human Growth and Development. Cr. 3

Coreq: PSY 242 and consent of adviser. Material fee as indicated in Schedule of Classes. Theories and basic principles in prenatal, physical, sensorimotor, perceptual, cognitive, social, emotional and language growth and development. Implications for physical therapy evaluation and treatment of children with developmental disabilities, adults with disabilities, and the aging population.

## 320. Basic Evaluation Procedures. Cr. 3

Prereq: P T 342 or consent of adviser. Basic principles and techniques of manual muscle testing, goniometry, and anthropometric measurements. Posture and gait evaluation. Laboratory.
322. Basic Therapeutic Procedures. Cr. 3

Prereq: P T 342 or consent of adviser. Material fee as indicated in Schedule of Classes. Principles and techniques of basic therapeutic
${ }^{1}$ See page 433 for interpretation of numbering system, signs and abbreviations
procedures, including massage, superficial heat and cold, basic and postural exercises, transfers and gait patterns. Laboratory.

## 340. (O T 340) Clinical Medicine. Cr. 4

Prereq: consent of adviser. Material fee as indicated in Schedule of Classes. A series of interdisciplinary presentations on the clinical manifestations and management of selected problems due to disease states or injury; includes etiology, assessment, course and medical specialty management of the problems.
341. Special Topics in Clinical Medicine. Cr. 1

Prereq: consent of adviser; coreq: P T 340. Correlation of course content presented in clinical medicine with analysis, treatment and rationale of medical and surgical conditions pertaining to physical therapy. Demonstration and discussion.

## 342. Kinesiology. Cr. 4

Prereq: ANA 303 or consent of adviser. Students must register for both sections. Material fee as indicated in Schedule of Classes. Biomechanical and kinesiological principles of human as related to anatomical and neuroanatomical structure. Fundamentals of pathokinesiology. Study of external and internal forces as they affect stability, tissue damage, body movement movement abnormalities and gait. Laboratory.
344. Fundamentals of Patient Care. Cr. 2

Prereq: consent of adviser. Material fee as indicated in Schedule of Classes. Theory and practice of basic health care managment procedures used by the physical therapist; includes basic patient care procedures and care of medical emergencies which arise in physical therapy practice. Lecture and laboratory.
346. Integrated Physiology. Cr. 2

Prereq: IHS 320 and consent of adviser. Physiological effects of exercise, general and local heat and cold, pain and trauma in individuals in good health and with neurological, musculoskeletal, pulmonary or cardiovascular dysfunction. Laboratory.
360. Orthotics. Cr. 2

Prereq: P T 342 or consent of adviser. Principles and techniques of orthotic function, component selection and application; includes upper and lower extremity and spinal devices, wheelchairs and ambulatory aids, assistive devices and environmental control systems.

## 370. Principles of Investigation. Cr. 2

Prereq: consent of adviser. Student computer account required. Introduction to basic research principles including design, methodology, ethics, biostatistics and implications for physical therapy. Critical reading of research reports relevant to physical therapy.

## 380. Clinlcal Education I. Cr. 1

Prereq: consent of adviser. Offered for $S$ and $U$ grades only. Orientation to clinical education and practice, observational skills; correlation of basic principles and skills of patient care and treatment. Part-time, supervised experience in clinical environment. Activity reports required.

## 410. Psycho-Social Aspects of Health Care. Cr. 2

Prereq: consent of adviser. The supportive role of the physical therapist as a helping professional. The psychological and emotional reactions; social, moral and ethical implications; coping mechanisms and support systems of individuals experiencing stress, illness, disability or death. Self-analysis of personal attitudes and perceptions.

## 411. Organization and Management of Health Care Systems.

 Cr. 3Prereq: consent of adviser. Overview of health care systems, their organization and financing; various alternatives of health care. Physical therapy, services within systems: planning, organization,
administration and evaluation; ethical and professional conduct, interand intra-professional relationships.
414. Introduction to Pediatric Physical Therapy. Cr. 3

Prereq: P T 312, 451, 452, or consent of adviser. Material fee as indicated in Schedule of Classes. Basic theories, principles and techniques of evaluation and treatment of common pediatric problems as related to physical therapy.

## 420. Physical Agents. Cr. 4

Prereq: P T 322, 346, ANA 304, or consent of adviser. Material fee as indicated in Schedule of Classes. Principles and practice of low-voltage current in therapeutic evaluation and treatment. Measurements of nerve conduction velocity and principles of electromyographic evaluation-biofeedback and transcutaneous nerve stimulation. Theory and application of superficial and deep heat, cold, infrared and ultraviolet radiation, and hydrotherapy. Laboratory and clinical experience.
(F)
426. Management of Patients with Orthopedic Conditions I. Cr. 3 Prereq: P T 322 or consent of adviser. Material fee as indicated in Schedule of Classes. Theoretical aspects, principles and techniques of the management of patients with orthopedic problems and their application to the practice of physical therapy. Special exercise regimes, musculoskeletal evaluation techniques, orthopedic treatment and evaluation of peripheral joints, principles of athletic training and joint replacements. Laboratory.

## 427. Management of Patients with Orthopedic Conditions II. Cr. 2

Prereq: P T 426 and consent of adviser. Theoretical aspects, principles and techniques of management of patients with orthopedic problems related to the spine; their applications to practice of physical therapy. Orthopedic evaluation and treatment of the spine; concepts of muscle energy techniques. Soft tissue mobilization and McKenzie techniques. Laboratory and clinical experience.
428. Special Topics in Orthopedic Physical Therapy. Cr. 2-4 Prereq: P T 427, consent of instructor. Special subject matter in orthopedic physical therapy. Topics to be announced in Schedule of Classes .
(S)
451. Assessment of Patients with Neurological Disorders. Cr. 2 Prereq: consent of adviser. Material fee as indicated in Schedule of Classes. Basic principles and techniques of assessing problems associated with neurological disorders including postural tone, sensation, superficial and developmental reflexes, quality of movement, perceptual-motor skills and functional mobility. Laboratory and clinical experience.
452. Therapeutic Procedures for Patients with Neurological Disorders. Cr. 4
Prereq: P T 451 or consent of adviser. Theory, principles and application of the neurophysiologic approach to evaluation and treatment. Includes proprioceptive neuromuscular facilitation, neurodevelopmental treatment, sensory integration, sensory-motor approaches. Laboratory and clinical experiences.

## 460. Rehabilitation Procedures I. Cr. 2

Prereq: P T 360, 340, 341, or consent of adviser; coreq: 452. Material fee as indicated in Schedule of Classes. Principles and techniques of prosthetic function, component selection and use training. Field trips.

## 461. Rehabilitation Procedures II. Cr. 3

Prereq: P T 460 or consent of adviser. Continuation of P T 460. Program planning; management of patients with spinal cord injuries and other selected chronic disabilities; team approach to patient care.
464. Management of Patients with Cardiopulmonary Disorders. Cr. 2
Prereq: P T 346 or consent of adviser. Material fee as indicated in Schedule of Classes. Theory, principles and techniques utilized by the physical therapist in the management of medically- and surgically-related cardiopulmonary disorders; includes cardiac rehabilitation. Laboratory.

## 470. Research Practicum. Cr. 2

Prereq: P T 370 or consent of adviser. Student computer account required. Application of basic principles of investigation to design and implement a research project. Oral and written presentation required.

## 472. Independent Research. Cr. 3-8

Prereq: consent of adviser. Design and implementation of original investigative study related to health care or physicel therapy profession.
480. Clinical Education II. Cr. 2

Prereq: P T 380, consent of adviser. Offered for S and U grades only. Continuation of P T 380. Part-time, supervised experience in clinical environments. Case study and activity reports required.
482. Clinical Decision Making in Physical Therapy. Cr. 1

Prereq: consent of adviser. Offered for $S$ and $U$ grades only. Teaching/learning experiences to correlate didactic and clinical evaluation and management techniques in physical therapy. Focus on development of individual student competencies utilizing the problem-solving approach.
484. Seminar in Physical Therapy. Cr, 2

Prereq: consent of adviser. Offered for S and U grades only. Exploration of contemporary issues in physical therapy and health care. Student application of principles of teaching and group dynamics.
486. Clinical Edacation III. Cr. 3 (Max. 9)

Prereq: P T 480, consent of adviser. Offered for $S$ and $U$ grades only. Students must register for three sections. Continuation of P T 480. Supervised experiences in clinical environments. Three full-time, six-week experiences. Activity reports required.
490. Directed Study. Cr. 1-4

Prereq: consent of adviser; first year professional courses. Independent study: critical analysis or review of concerns in health care; or physical therapy role, approach, methodology, technique or scientific rationale for clinical procedures. Oral and written presentation required.
500. Perspectives in Geriatrics. Cr. 3-4

Prereq: P T 312, 380, 480; or consent of adviser. Problem-oriented approach to physiological and pathophysiological changes, with emphasis on functional ability; identification of health problems; prevention strategies; evaluation and management; psychosocial factors and research needs related to physical and mental health of the elderly.
(S)
505. (NUR 525) Introduction to Developmental Disabilities. (S W 555) (SED 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)

## RADIATION TECHNOLOGY

## Office: 121 Shapero Annex

Chairperson: Diane K. Chadwell

## Assistant Professor

Diane K. Chadwell

## Lecturer

Adam F. Kempa

## Medical Adviser

Carla A. Cook

## Adjunct Assistant Professors

Carla A. Cook, Carmen F. Mesina, Barbara G. Orton, James T. Spicka

## Adjunct Instructors

Julie M. Fayad, Sheryl A. Janiec, Geralyn A. Quick, John C. Merrill, Catherine O. Warmelink

## Cooperating Faculty

Janice M. Campbell, Merlin E. Ekstrom, Gary A. Ezzell, Colin G. Orton

## Clinical Education Coordinator

Bridget R. Brambs

## Clinical Education Supervisors

Terry G. Berlin, Michael L. DeSantis, Victoria J. Placido, Gerard A. Szyndlar

## Degree Program

## Bachelor of Science in Radiation Therapy Technology

Radiation therapy technology is a health care discipline which utilizes ionizing radiation for the treatment of malignant diseases. This field requires a basic understanding of and interest in science, especially mathematics and physics, as well as emotional maturity and a desire to assist in the management of patient care. A radiation therapy technologist has the unique opportunity to blend knowledge and skills of mathematics, medical science and psychology in his or her everyday work. The technologist comes to know patients over a period of several months and becomes important to their health care; this continued contact with the patient is the source of much satisfaction and professional pride.

The Bachelor of Science Degree program in radiation therapy technology at Wayne State University is designed to prepare students for the technical, theoretical and psychological aspects of this career.

Radiation therapy technologists are typically employed in hospitals, clinics, and educational institutions as staff technologists, clinical supervisors, administrators, and educators. A radiation therapy technologist may:

- Operate sophisticated radiation equipment to outline the extent of tumors and deliver treatment according to physician's orders;
- Assist in designing the patient treatment plan through the use of hand- or computer-produced computations;
- Recognize when a patient is having additional medical problems which require the physician's attention;
- Provide psychological support for patients who are dealing with the stress of their illness.


## Bachelor of Science <br> in Radiation Therapy Technology

The Bachelor of Science in radiation therapy technology is a four-year degree program consisting of two years of preprofessional courses and two years of professional courses. The program is accredited by the Committee on Allied Health Education and Accreditation of the American Medical Association in cooperation with the Joint Review Committee on Education in Radiologic Technology; it complies with the curriculum recommendations of the American Society of Radiologic Technologists. Upon completion of the program, the student receives a Bachelor of Science Degree in Radiation Therapy Technology and is eligible to take the national certification examination administered by the American Registry of Radiologic Technologists.

## Admission

The first two years (preprofessional program) are taken in the College of Liberal Arts, the admission requirements of which are satisfied by admission to the University; see page 13. Application forms are available from the Office of Admissions, 3 East, Helen Newberry Joy Student Services Center. Students should consult with the University Advising Center, 3 West, Helen Newberry Joy Student Services Center, regarding course selection. Students are urged to seek additional career advisement from the Department of Radiation Technology early in their preprofessional program.

Recommended High School Preparation: Students interested in a career in radiation therapy technology should take as many of the following high school courses as possible: biology, chemistry, mathematics, physics, computer science, typing, speech and composition.

For additional procedures, refer to the Undergraduate Admissions section for the Faculty of Allied Health Professions, page 378.

## PREPROFESSIONAL PROGRAM

Each of the following required preprofessional courses (or its equivalent) must be completed with a minimum grade of ' $C$.'

## First and Second Years

|  | credits |
| :---: | :---: |
| B10 101 - (LS) Basic Biology I. | .... 4 |
| BIO 102 - Basic Biology II, | 4 |
| B10 271 - Comparative Vertebrate Zoology |  |
| CHM 102 - General Chemistry |  |
| CHM 103-(PS) General Chemistry II |  |
| CSC 100 or CSC 101 |  |
| - (CL) Introduction to Computer Science. | 3 |
| - (CL) Introduction to Computing |  |
| ENG 102 - (BC) introductory College Writing. |  |
| ENG 301 - (IC) Intermediate Writing |  |
| MAT 180 - Elementary Functions |  |
| PHI 105- (CD) Critical Thinking. |  |
| PHY 213 -(PS) General Physics.. |  |
| PHY 214 - General Physics.. | 4 |
| P S $101{ }^{\circ}$ - (AI) American Government. |  |
| PSY 101 - (LS) Introductory Psychology |  |

PSY 230 - Psychology of Adjustment .....  .4
SPB 101 - (0C) Oral Communication: Basic Speech .....  3
UGE 100 - (GE) The University and its Libraries .....  .1

* Foreign Culture Elective. .....  3
* Historical Studies Elective. .....  3
* Humanities Electives .....  6
Total: 74

Professional Program Admission: The student wishing to apply to the professional program must comply with the following admission requirements:

1. Completion of all preprofessional courses (or their equivalents) by the fall term in which admittance is desired. See Preprofessional Program, above.
2. Hold a combined cumulative honor point average of 2.50 or above ( $A=4.00$ ) for $a l l$ college-level work at $a l l$ institutions attended.
3. Completion of a professional program application form for the College of Pharmacy and Allied Health Professions, with a copy of the student's Wayne State transcript attached. Mail completed form and Wayne State transcript to: Office of the Registrar, College of Pharmacy and Allied Health Professions, Wayne State University, Detroit, Michigan 48202.
4. Submission of official transcripts from all college institutions attended (other than Wayne State). Mail transcripts to: Chairperson, Department of Radiation Technology, College of Pharmacy and Allied Health Professions, Wayne State University, Detroit, Michigan 48202.
5. Meeting with a department faculty member to discuss the career of radiation therapy technology. This visit should be completed as early in the preprofessional program as possible. Appointments are made by calling 577-1137.
6. Completion of a clinical visit to one of the affiliate institutions for the program. Appointments are made by calling 577-1137.
7. Completion of a confidential Career Planning Interview at University Counseling Services, 334 Mackenzie Hall, telephone: 577-3398. (Appointment is to be made no later than April 1.)
8. Completion of the Allied Health Professions Admissions Test (AHPAT). Application forms for this examination may be obtained from the University Advising Center, 3 West, Helen Newberry Joy Student Services Center, or from Testing and Evaluation Services, 343 Mackenzie Hall. This test should be taken no later than March of the year in which admission is sought.
9. Submission of two reference forms (available from the Department): one from an employer/supervisor and one from a college professor/adviser.
10. Satisfaction of the University Requirements in English and Mathematics Proficiency (documentation is required).

The information requested in requirement 4 , and in requirements 8 through 10, above, should be submitted to the Chairperson, Department of Radiation Technology, College of Pharmacy and Allied Health Professions, Wayne State University, Detroit, Michigan 48202.

Application packets, including an application form, reference forms, and current procedural guidelines, are available from University Advising or the Department of Radiation Technology.

[^84]Application Deadline: The deadline for applications is April 15. Applications which are incomplete by April 15 or are submitted after that date will be considered only with the approval of the Chairperson. Prospective students are urged to submit applications as early as possible after the fall term. Specific directions for submitting the various application materials are indicated on the respective forms.

Application Review: The Department of Radiation Technology will review all applications for completeness. The Admission Committee will interview all qualified applicants with completed applications submitted by the deadline date. A number of criteria will be evaluated, including academic achievement and personal qualities. Admission interviews are typically conducted in May of each year. The Department of Radiation Technology typically notifies each applicant of the final admission decision in June.

## Degree Requirements

Candidates for the degree Bachelor of Science in Radiation Technology Therapy must complete a minimum of 133 credits, plus sufficient credits to fulfill the University General Education Requirements not satisfied by either required courses or the student's choice of electives. The total course work will be distributed between two years of preprofessional course work (see above) and the two-year professional program as outlined below. Courses in the professional program are taken in the College of Pharmacy and Allied Health Professions. Enrollment requires full-time student status for six consecutive terms (twenty-four months). Students take didactic and clinical courses, with approximately twenty hours per week of clinical education. The clinical education program includes experience at approximately four affiliate institutions in the greater metropolitan Detroit area. Such institutions include urban and suburban hospitals, as well as private clinics.

A required elective in the senior year encourages a student to take a course in the areas of management, education, humanities or social studies. The course selected may be used to fulfill the social science requirement of the University General Education Requirements.

While almost all the required courses are scheduled during usual daytime hours, students are required to attend occasional laboratory or lecture sessions in early evening or Saturday hours.

Professional courses and/or professional program admission requirements are subject to change without notification. The curriculum may change because of professional practice requirements which may be separate from academic requirements. It is the student's responsibility to obtain updated information regarding the program from the Department of Radiation Technology, Wayne State University; telephone: 577-1137.

## PROFESSIONAL PROGRAM

Third YearIHS 310 - Basic Mechanisms of Human Disease I
credits
5IHS 320 - Basic Mechanisms of Human Disease II5
IHS 321 - Basic Mechanisms of Human Disease: Laboratory ..... 1
RT 300 - Clinical Care Procedures. ..... 2
R T 301 - Introductory Radiation Physics. ..... 3
RT 302 - Clinical Radiation Physics ..... 4
R T 311 - Clinical Aspects of Radiation Therapy. ..... 3
RT 314 - Topographical Anatomy and Medical Imaging ..... 2
R T 318 - Design \& Construction of Treatment Accessories. ..... 1
RT 331 - Clinical Practicum I ..... 3
RT 332 - Clinical Practicum II ..... 4
RT 333 - Clinical Practicum III. ..... 4

## Fourth Year

credits
RT411 - Clinical Radiation Oncology ..... 4
R T 412 - Basic Clinical Dosimetry ..... 3
RT 414 - Radiation Pathology ..... 2
R T 415 - Radiobiology for the Technologist ..... 2
RT 422 - Radionuclide Physics ..... 3
R T 424 - Radiation Therapy Technology Seminar. ..... 4
R T 430 - Quality Assurance ..... 1
RT 435 - Clinical Practicum IV ..... 4
RT 436 - Clinical Practicum V. ..... 4
R T 437 ~ Clinical Practicum VI ..... 4
Elective ..... 3
Total: 34

Scholarship: Students in the professional program are subject to high academic and professional standards. A grade of ' C ' or above is required in each professional copurse, and the student must maintain a term honor point average of 2.50 throughout the program. A grade of ' $D$ ' must be repeated; an ' $E$ ' grade or a second ' $D$ ' grade will result in review by the Academic Committee for possible dismissal. Current academic standards and program probation policies are published annually and are available upon request from the Department of Radiation Technology.

Liability Insurance: Each student is required to have professional liability insurance during the entire length of the professional program. Neither the clinical affiliates, nor Wayne State University, assume liability for student actions during their clinical education.

University General Education Requirements: In addition to the current course and academic requirements outlined by the Department, the student must complete the University General Education Requirements in order to receive a Bachelor of Science degree in Radiation Therapy Technology. Electives in the preprofessional or professional program may be used to complete these additional course requirements. A list of recommended courses may be obtained from the Department of Radiation Technology.

## COURSES OF INSTRUCTION ${ }^{1}$ (R T)

## 300. Clinical Care Procedures. Cr. 2

Procedures and ethics related to the care and examination of the radiation oncology patient.

## 301. Introductory Radiation Physics. Cr. 3

Basic introduction of radiation physics including the x-ray machine, physical principles and circuitry; principles of mathematics.
302. Clinical Radiation Physics. Cr. 4

Prereq: R T 301. Principles of radiation exposure; radiation producing and measuring devices; clinical application of radiation physics.

## 311. Clinical Aspects of Radiation Therapy. Cr. 3

Basic concepts in oncology and radiation therapy technology. Topics include: cancer statistics, neoplasia, and principles of treatment and dosage.

## 314. Topographic Anatomy and Medical Imaging. Cr. 2

Material fee as indicated in Schedule of Classes. Procedures for imaging human structure and their relevance to radiation therapy; topographic anatomy, identification of anatomic structures as demonstrated through various imaging modalities; fundamentals of

[^85]radiographic exposure techniques and film processing.
318. Design and Construction of Treatment Accessories. Cr. 1 Material fee as indicated in Schedule of Classes. Theory and practical experience with design and construction of radiation shielding devices and various treatment accessories; related geometry, magnification devices, use of hot-wire cutter, casting techniques, bolus construction and immobilization devices.

## 331. Clinical Practicum I. Cr. 3

Introduction to clinical radiation therapy. Closely supervised patient-related activities. Emphasis on development of interpersonal communication skills in the clinical setting; medical terminology.

## 332. Clinical Practicum II. Cr. 4

Prereq: R T 331 . Closely supervised practice in the delivery of prescribed doses of radiation utilizing common types of radiation producing equipment. Observation and performance of clinical care procedures pertinent to radiation oncology patients. Development of communication skills in patient/technologist relationships. Correlation of knowledge of medical imaging techniques to diagnostic workup and treatment planning.
333. Clinical Practicum III. Cr. 4

Prereq: R T 332. Expanded supervised practice in the delivery of radiation therapy treatments. Literature review of a selected oncology topic.
411. Clinical Radiation Oncology. Cr. 4

General presentation of malignant conditions, their etiology and methods of treatment; specific radiation treatment methodology including technical parameters of field size and direction, dosage, blocking, and patient positioning.

## 412. Basic Clinical Bosimetry. Cr. 3

Prereq: R T 411. Material fee as indicated in Schedule of Classes. Basic concepts of clinical dosimetry and treatment planning; various external beam techniques, depth dose data, and summation of isodose curves.
414. Radiation Pathology. Cr. 2

Material fee as indicated in Schedule of Classes. Basic principles of neoplasia, including types of growth, causative factors, biological behavior, and significance of staging procedures. Pathology of radiation injury.

## 415. Radiobiology for the Technologist. Cr. 2

Biological effects of iotizing radiation on living tissue. Cell and tissue radiosensitivity; radiation syndromes and related effects. Basic principles of clinical radiation biology.

## 422. Radionuclide Physics. Cr. 3

Prereq: R T 302. Natural radioactivity; isotopes and nuclear structure; techniques of radiation measurement. The clinical use of radionuclides. Radiation safety.
424. Radiation Therapy Technology Seminar. Cr. 4

Open only to radiation therapy technology students. Material fee as indicated in Schedule of Classes. Group discussion of professional topics as related to radiation therapy technology, including thanatology, patient communication and assessment, patient education, departmental administration, educational administration, and health care services.
(W)
430. Quality Assurance. Cr. 1

Open only to radiation technology students. Principles and application of a comprehensive quality assurance program, addressing general clinical and physics factors. Contents include: tasks to be performed, with their frequency and acceptable limits; model implementation program; and legal implications. Lecture and laboratory settings.
435. Clinical Practicum IV. Cr. 4

Prereq: R T 333. Continued supervised practice in a wide spectrum of clinical activities. Submission of a critical bibliography from current literature of radiation therapy, cancer management and related areas.
(F)
436. Clinical Practicum V. Cr. 4

Prereq: R T 435. Continued clinical practice under limited supervision. Submission of essay on radiation oncology topic. (W)

## 437. Clinical Practicum VI. Cr. 4

Prereq: R T 436. Material fee as indicated in Schedule of Classes. Continued clinical practice under minimal supervision. Practice of procedures related to the development of various treatment plans and methods of treatment planning. Review of preventive maintenance and equipment safety.


## School of Social Work

DEAN: LEON W. CHESTANG

## Foreword

## The Social Work Profession

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 a post 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; and 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 family, 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, racism, sexism, and ageism have long been impediments to human empowerment and maximum human development, both individually and collectively. Social workers must not only be keenly aware of these negative prejudices, but must also be equipped with the requisite knowledge, values and skills necessary to reduce their negative impact as well as freeing the human spirit to transcend their prescribed limits. The social work profession is actively engaged in helping to create and maintain public social policies that will assure appropriate distribution of services, and will change social institutions in accordance with changing social conditions.

Social work has 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 practice 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 level, to prepare students for practice in the profession of social work. Its principal programs lead to the Bachelor of Social Work degree and the Master of Social Work degree. 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).

## Degree Programs

## Bachelor of Social Work

* Master of Social Work

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# Faculty and Administration 

## BACHELOR OF SOCIAL WORK

Dean: Leon W. Chestang
Associate Dean: Joseph P. Hourihan
Academic Services Officer: Vickie L. Radoye
Administrative Officer: Edrene R. Teahan
Director, Outreach Services: Cecille Y. Dumbrique

## Professors

Creigs C. Beverly, 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 (Emerita), Kurt Spitzer, Betty Walsh (Emerita), David Wineman (Emeritus)

## Associate Professors

Arthur E. Antisdel, Lester B. Brown, Eddie Davis, Alexander E. Efthim (Emeritus), Helen Francis (Emerita), Susan W. Downs, Theodore Goldberg, Edna S. Harrison (Emerita), Carl Hartman, G. Evangeline Sheibley Hyett (Emerita), Ronald L. Jirovec, Aaron Krasner (Emeritus), Alice E. Lamont, Thomas P. Melican, Edna P. Miller (Emerita), 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, Phyllis I. Vroom

## Adjunct Associate Professor

Paul A. Koonter

## Assistant Professors

Anita M. Gander, William H. Iverson, Jr., Maureen O. Marcenko, David P. Moxley, Hartford Smith, Jr.

## Lecturer

Sharen K. Garner
School of Social Work DirectoryDean114 Cohn; telephone: 577-4400
Associate Dean ..... 108 Cohn; telephone: 577-4404
General Information ..... 10 Cohn; telephone: $577-4409$
Admissions andStudent Services
$\qquad$
Coordinator of FieldEducation.200A Cohn; telephone: 577-4479
Recruitment of MinorityGroup Students.. 10 Cohn; telephone: 577-4409
Student Organizations
311 Cohn; telephone: 577-4435
Trabajadores de la Raza

Estudiantil (T.R.E.)

$$
311 \text { Cohn; telephone: 577-4435 }
$$

Mailing address for all offices: School of Social Work, Wayne State University, Detroit, Michigan 48202.

The program of study which leads to the Bachelor of Social Work degree and which prepares for entry level practice in social work consists of four semesters of study in the junior and senior years. During each year about one-half of the curriculum is in professional courses in social work and about one-half is in corequisite courses and electives. One part of the professional component of the program is field work which is concurrent with class work except in the first semester of the junior year. It is required that the student enroll in the entire professional component during any one semester.

Usually the four semester program of class and field work is a program of full-time study extending over two successive academic years, beginning in the fall semester. A limited number of students may be admitted in January to the full-time program leading to the degree of Bachelor of Social Work, beginning in the winter semester and continuing, without interruption, for four consecutive semesters, including the spring-summer semester. This is an elapsed time of sixteen months as compared to twenty months for the regular program of two academic years. January admission leads to graduation in May of the following year. The admission of a class in January is determined on a year-to-year basis.

## Admission

Each application for admission to the program leading to the Bachelor of Social Work degree is given careful review in order to select those students best able to fulfill the requirements for professional education in social work. The responsibility for deciding whether a student shall or shall not be admitted rests with the School. Applications may be submitted after the student has completed forty credits in course work or its equivalent at the freshman and sophomore levels.

Each applicant must: (1) complete and forward to the Office of Admissions, Wayne State University, the form Application for Undergraduate Admission; (2) arrange to have submitted to the Office of Admissions, Wayne State University, directly from colleges and universities of recognized standing, official transcripts of all credits previously earned, whether in one or several educational institutions, and any other evidence that the student will, at the time of his/her admission to the program, have successfully completed a minimum of sixty semester credits of work or its equivalent distributed as outlined below; (3) complete and forward to the School of Social Work, Office of Admissions, the form Application for Admission, Bachelor of Social Work Degree Program ; (4) have earned a minimum overall honor point average of 2.6 ; (5) show evidence to the Director of Admissions of the School of Social Work of suitability and fitness for the profession of social work and the ability to pursue successfully undergraduate professional education in social work.

NOTE: Students who have already attended Wayne State University should omit steps one and two above.

Applications are reviewed only when all supporting materials have been received. Priority deadlines for submission of initial and all supporting materials for September and January admission are March 31 and August 31, respectively. Applications received after the closing date cannot be guaranteed processing. If students have not completed sixty credits at the freshman and sophomore levels at the time of application, they must submit a statement listing the courses they are in the process of completing to comply with the sixty-credit requirement, and a new transcript on completion of the work. The applicant may be required to attend an individual or group interview as part of the application process.

Transfer of Undergraduate Credit: No more than sixty-four semestet credits from two-year colleges may be used toward the B.S.W. degree. A maximum of twelve Technical, Vocational, or Applied Practice credits (designated 'TVA') in the human service areas (for example, mental health, child care, gerontology, empathy training, human services and substance abuse) will count toward the degree. Any such transfer credits will be counted as general elective credit. Social work courses from programs not accredited by the Council on Social Work Education (CSWE) also will be transferred as 'TVA' general elective credit. See page 14 of this Bulletin for the University transfer policy.

Readmission: Former students who had been enrolled in a planned program leading to the Bachelor of Social Work degree, who wish to be considered for readmission to complete degree requirements, must follow regular procedures for admission to the School.

## Pre-Social Work Preparation

To qualify for admission to the Bachelor of Social Work program in the School of Social Work sixty semester credits (or its equivalent) at the freshman and sophomore levels must be completed. Such course work must be distributed according to one of the curricular patterns cited below. The 'General Education Requirements' of the University must be met at the same time.

The two patterns outlined below are available through the College of Liberal Arts and the Weekend College Program of the College of Lifelong Learning, designated Pattern ' $A$ ' and Pattern ' $B$ ' respectively. Students may also select elective credits at the freshman and sophomore levels from such professional schools as the School of Business Adminsitration, the College of Education, the College of Nursing, and the School of Social Work.

## Pattern A (College of Liberal Arts)

Some of the following subject areas are prefixed with two-letter parenthetical codes. These codes indicate General Education categories which may be satisfied (entirely or in part) by the corresponding requirement in the pre-social work curriculum. For a definition of the General Education Requirements and a list of courses which satisfy each of them, see page 20.
A. Social Sciences: The following distribution of courses is required.

1. (SS) Anthropology- $3-4$ credits*
2. (SS) Economics-3 credits (Principles of Macroeconomics, ECO 101, recommended)
3. History-3 credits (Not HIS 130)
4. (Al) Political Science- $3-4$ credits
5. (SS) Sociology-two courses
B. Natural Sciences: The following distribution of courses is required, including a laboratory course in one of the subject areas designated below.
6. (LS) Biology-3-4 credits
7. Psychology-three courses. Field practicum courses do not meet this requirement. 3. (PS) One course ( $3-4$ credits) to be selected from the following: Physical Science, Chemistry, Geology, Astronomy.
C. Humanities: The following distribution of courses is required.
8. (PL) Philosophy-3 credits (excluding logic)
9. (VP) Humanities (3 credits).
D. English: The following distribution of courses is required.
10. (BC) Freshman Composition-4 credits
11. (IC) English Elective ( 200 level or above)- 3 credits
E. (OC) Basic Speech-2-3 credits

## F. Electives

## Pattern B (College of Lifelong Learning)

Some of the following courses and subject areas are prefixed with two-letter parenthetical codes. These codes indicate General Education categories which may be satisfied (entirely or in part) by the corresponding requirement in the pre-social work curriculum. For a definition of the General Education Requirements and a list of courses which satisfy each of them, see page 20 .
A. Social Sciences: The following distribution of courses is required.


## Degree Requirements

The Bachelor of Social Work degree requires satisfactory completion of a minimum of one hundred twenty credits. These consist of sixty credits in the freshman and sophomore years, including prerequisite courses (see Pre-Social Work Preparation, above) for admission to the professional component of the program and sixty credits in the junior and senior years, including thirty-five credits in field work and related courses and a minimum of twenty-five credits in corequisite and elective courses (see below).

Honor Point Average: To be awarded a Bachelor of Social Work degree, the student must achieve a cumulative honor point average of 2.0 , and an honor point average of 2.0 during the junior and senior year. A minimum of thirty credits must be earned in residence in the School of Social Work, and the student must be in residence during the final semester prior to graduation.

* See page 23 of this Bulletin for a list of approved courses which
will fulfill University General Education Requirements.

University Proficiency Requirements in English and Mathematics: All undergraduate students who register for the first time at Wayne State University in Fall Semester 1983 or thereafter will be required to demonstrate proficiency in English and mathematics by the time they have earned sixty semester credits toward a bachelor's degree. For full particulars of these requirements, as well as the requirements applicable to registrants at the University prior to Fall 1983, see pages 20-24. Although the English and mathematics proficiency examinations are not required for admission to the program leading to the Bachelor of Social Work degree, they are requirements for the degree. It is recommended, therefore, that students take the English and mathematics examinations prior to making application for the B.S.W. degree program.

Each student must satisfy these proficiency requirements by the end of the junior year as a requirement for going into the senior year, and, subsequently, for graduation.

University General Education Requirements: All undergraduate students who register for the first time at Wayne State University in Fall Semester 1987 or thereafter are required to meet the University General Education Requirements; see pages 20-24.

University Requirement in American Government: All undergraduate students enrolled prior to fall term 1987, as a prerequisite to graduation from Wayne State University, are required to complete successfully a course in the principles of American government. The courses and course sequences which are applicable to this requirement are listed on pages 23-24.

## Curricula

There are two major elements in the curriculum leading to the Bachelor of Social Work degree: (1) professional subjects in social work and (2) general education in related academic and professional disciplines. The professional component of the curriculum is organized to convey the interrelationship of social work knowledge, skills and values. It is designed to educate students in knowledge of human behavior and the social environment, and concepts in research and social welfare organization and policy. In addition, social work practice methods include conceptual, theoretical and methodological content relative to the helping and change factors in the problem-solving process.

Students in field education are placed in a wide variety of agencies that provide services in social work fields of practice. In the field education course students may be required to interact with individuals, families, groups, organizations and communities from different ethnic, cultural or racial backgrounds who are experiencing stress. In the other professional courses the student learns about the nature of human development and behavior in a variety of environments, and the effects of stress on the persons in those environments. Various approaches to the reduction of stress and ways to help people enhance their skills in problem-solving are taught. Some of the courses focus on social welfare policies and programs designed to prevent breakdown and dysfunctioning of clients. In research courses the student is required to take a critical view of research methodology, the outcome of research efforts, and their application to practice.

Concurrent with the professional component, students enroll in corequisite courses and electives to enhance their general education and knowledge of related professional disciplines.

## REQUIRED PROFESSIONAL CONTENT

## Junior Year

First Semester credits
SW 301 - Social Work Practice Method I. ..... 2
SW 351 - Human Development and Dysfunction ..... 3
Second Semester
SW 302 - Social Work Practice Method II ..... 2
SW 371 - Social Welfare and the Social Work Protession: History, Trends and Basic Concepts. ..... 2
SW 498 - Field Practice in Social Work ..... 5
Senior Year
First Semester
SW 401 - Social Work Practice Method III, ..... 2
SW 471 - Social Welfare in the United States: Current Programs ..... 2
SW 481 - Research Methods for Social Workers. ..... 3
SW 498 - Field Practice in Social Work ..... 5
Second Semester
SW 402 - Social Work Practice Method IV ..... 2
SW 452 - Social Functioning and the Effect of Stress. ..... 2
SW 498 - Field Practice in Social Work ..... 5

## GENERAL EDUCATION COREQUISITES AND ELECTIVES

Corequisites: The corequisites for the program during the junior and senior years must be distributed as follows:

Anthropology 311-3 credits.
History 287-3 credits, to be taken no later than the second semester, junior year.
Statistics 102-3 credits, to be taken no later than the second semester, junior year.

Electives: Electives must be at the 300 level or above, or by consent of the academic adviser.


## COURSES OF <br> INSTRUCTION ${ }^{1}$ (S W)

## 101. Introduction to Social Work and Social Welfare. Cr. 2-3

Survey of selected social welfare programs in the United States; history and development; focus on issues related to poverty and dependence.

## 301. Social Work Practice Method I. Cr. 2

Prereq: junior standing; admission to the B.S.W. program. First of four courses providing knowledge, skills and framework for entry level generalist practice: social work purposes, functions, focus, values; problem-solving process; principles of observation, interpersonal relationships and communication; emphasis on worker-client interactions during the beginning phases of service.
(S)
302. Social Work Practice Method II. Cr. 2

Prereq: S W 301; coreq: 498. Continuation of four-course sequence. Introduction to a problem-solving guide for effecting situational change; emphases on assessment in the problem-solving process and on worker-client interactions during the middle and ending phases of service. Comparing and contrasting knowledge, skills and dynamics in work with individuals and groups.
351. Human Development and Dysfunction. Cr .3

Prereq: admission to the B.S.W. program. Assessment of the phenomenon of social functioning with reference to the human life cycle and human diversity in the context of families, groups, neighborhoods, communities, organizations and society.
371. Social Welfare and the Social Work Profession: History, Trends and Basic Concepts. Cr. 2
Prereq: admission to the B.S.W. program. History of social welfare in the United States. Basic concepts of social welfare. The profession of social work in historical perspective. Current trends and issues in social welfare and in the profession of social work.
401. Social Work Practice Method III. Cr. 2

Prereq: S W 302; coreq: 498. Continuation of four-course sequence. Utilization of systems and problem-solving approaches to plan for and apply appropriate social work interventions with emphasis on individuals, families and small groups.
402. Social Work Practice Method IV. Cr. 2

Prereq: S W 401; coreq: 498. Continuation of four-course sequence. Utilization of systems and problem-solving approaches to plan for and apply appropriate social work interventions with emphasis on service delivery and change within complex organizations such as agencies, neighborhoods, and communities. Focus on the integration of a generalist model of practice.
452. Social Functioning and the Effect of Stress. Cr. 2

Prereq: S W 351; coreq: 498. Examination of stress as an outcome of maladaptive exchanges between persons and their environments, with emphasis on three interrelated areas: life transitions, unresponsive environments, communication and relationship problems.
471. Social Welfare in the United States: Current Programs. Cr. 2 Prereq: S W 371; coreq: 498. Description and analysis of major social welfare programs in the United States.
481. Research Methods for Social Workers. Cr. 2-3

Prereq: one course in elementary statistics; coreq: S W 498. Basic concepts of research and its utilization: problem formulation, research design, description and analysis of research studies.
490. Directed Study. Cr. 1-4(Max. 4)

Prereq: consent of adviser and authorization of the Dean. Individual direction in reading and research on selected topics.
498. Field Practice in Social Work. Cr. 1-11

Coreq: one course in social work method. Minimum of 15 credits must be taken over not less than 4 semesters; open only to junior and senior B.S.W : students. Offered for $S, M$, and $U$ grades only. The ratio of clock hours to credits is 46 to 1. Practicum of B.S.W. professional component interrelated with courses in social work method, human behavior and the social environment, social welfare organization and policy, and research. Field placements assigned by the Coordinator of Field Education.

## 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.
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.
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.
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.
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.
673. Seminar in School Social Work. Cr. 2
691. Special Topics in Social Work. Cr. 2-4

Topics of current interest to be announced in Schedule of Classes .

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# ACADEMIC PROCEDURES and FINANCIAL AIDS 

For complete information regarding academic rules and regulations of the University, students should consult the section of this bulletin beginning on page 5. The following additions and amendments pertain to the School of Social Work.

Students in the School of Social Work are responsible for informing themselves of all rules, regulations and requirements, complying with all official procedures, and fulfilling all course and degree requirements in proper sequence with satisfactory scholarship. In case of doubt regarding any matter the student should consult the Academic Services Officer. The primary responsibility rests with the student.

The faculty of the School of Social Work has the responsibility to require a student to withdraw at any time prior to receipt of the degree when, in its judgment, the student fails to do satisfactory work. Such decisions may be based on deficiencies in performance in class or field or in personal fitness for the profession. The faculty has adopted a set of criteria and procedures for academic termination.

Every effort is made to assist students whose work suffers as a result of conditions beyond their control such as personal illness, serious illness in the immediate family or similar emergencies.

## Residency

A student must complete thirty semester credits in the School of Social Work and must be in residence during the final semester prior to graduation.

## 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 working should limit registration in proportion to the amount of outside work after consultation with the 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 498, Field Practice in Social Work, are required to carry professional liability insurance as a condition of field placement.

## Degree Application

Application for the degree must be filed no later than the first day of classes for the semester in which the student expects to complete the requirements for the degree. The applicant must be recommended for the degree by the faculty. The applicant is requested and expected to attend the commencement at which the Bachelor of Social Work degree is conferred.

## Field Education Manual

The Field Education Manual is distributed to each student enrolled in $S$ W 498, Field Practice in Social Work. 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, all of which are detailed in the manual. The Field Education Manual is distributed to each student enrolled in Social Work 489, Field Practice in Social Work.

## FINANCIAL AIDS

Scholarships, fellowships and other forms of financial aid are available on a limited basis for those students who cannot undertake study without some financial assistance. The School expects students to utilize their own resources as much as possible to cover the costs of professional education. 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 the Office of Scholarships and Financial Aids.

When financial aid is necessary, the School of Social Work will cooperate with the University Office of Scholarships and Financial Aids (see page 19) 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 Office of Admissions and Student Services, School of Social Work. Information and appropriate application forms may be obtained by contacting the Office of Admissions and Student Services, School of Social Work.

## Scholarships and Awards

Fred and Freda Gentsch Scholarship. Awarded on the basis of merit and financial need.

Harold and Carolyn Robinson Scholarships. Awarded on the basis of academic achievement and financial need.

Mary Turner Scholarship. Awarded to women students on the basis of academic achievement and financial need.

# 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 issues within the School as well as broader educational and social issues. All students currently enrolled in undergraduate or graduate programs within 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 serve better 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 Association of Student Social Workers are some of the ways the Organization puts students in touch with each other and with 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 (ABSW) 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 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 actitivies, sponsors forums, institutes and workshops which encourage professional development, conducts special activities
in support of the work of the School, and promotes fellowship among alumni, faculty and students through its social programs. It also provides scholarships and financial support to the School through fund raising efforts. Through the Association's newsletter, graduates are informed about one another and the School of Social Work.


## Field Education

The following agencies and persons have worked with members of the Faculty in field instruction during the academic year 1987-1988:

A Friend's House Adult Day Care Center: Robin Cronin Adult Well Being Services: Lonnie Johnson, John Kosik

Aurora Hospital: Sharon Blum
Avondale Schools: Carol Proto
Barat Human Services: Lillie Brown
Beacon Day Treatment: Ann Mixer
Beaumont Hospital-Royal Oak: Lori Glick
Beaumont Hospital-Troy: Anne Carey, Bob Dale, Judy Lowen
Bi-County Outpatient Counseling Center: Wes Shea
Bio-Medical Application of Detroit: Barbara Hall
Black Family Development: Diane McMillan
Bon Secours Nursing Center: Carol Combs
Boysville of Michigan: Ed Overstreet
Brightmoor Community Center: Anne Harris, John Miller, Dennis Muzzi

Camp Oakland: Cassandra Bowers
Caregivers: Ladora Barnett
Catholic Social Services of Macomb County: Robin Cronin Catholic Social Services of Oakland County: Carol West Catholic Social Services of Toledo: Ronald Boudouris

Catholic Social Services of Wayne County: Tracy Cox, Jeanine Ellis, Sondra Forest, Delores Gaydos, Charlie Geiger, Joanne Jocque, Mary Niims, Sylvia Ruen, Nancy Stein
Child Abuse and Neglect Council, County of Oakland: Meg Mitzel
Children's Aid Society: Cheryl Bedrosian, Elizabeth Johnson, Rosalyn Shields, Phyllis Simpson, Pat White

Children's Center of Wayne County: Dr. Paula Jorne, Ted Lewis, Joyce Skirments, Bonnie Walker

Children's Hospital of Michigan: Ethel Burgess
Christian Family Services of Lapeer County: Barbara Vanlandeghem
Clarkston Schools: Jim Butzine
Clinton Valley Center: Lavada Gray, Kelly Rich
Common Ground: Maryann Weingarden
Community Care Services: Sally Booth-Schwadron
Community Human Services: Stephanie Korts
Community Services of Oakland: Sue Wotring
Crossroads Social Services: Jane Marten
Dares: Martha Barenbrugge
Detroit Councilmember Maryann Mahaffey's Office: Geraldine Ellington, Sara Gleicher
Detroit Health Department: Leona Glover, Arletha Kerns, Shirley McIntyre, Durrenda Ojanuga, Patricia Soderberg

Detroit Osteopathic Hospital: Renee Maxwell

## Detroit Psychiatric Institute: Elliot Rosen

## Detroit Public Schools: Dorothy Jenkins

Detroit Receiving Hospital: Barbara Chapman-Troy, Eleanor Cummings, Carl Currie, Cherrie Dye, Barbara Gaffney, Carol Katroscik, Ken Kish, Paul Koonter, Ellen Risken, Alice Stevenson

Detroit Riverview Hospital: Brian Gallagher
Detroit Senior Citizens Department: Barbara Fisher-Mays
Detroit Urban League: Jo Anne Woodward
Development Centers: Sandra Jaffa
Downriver Guidance Clinic: Mary Adams, Marci Scalera, Linda Waltenberger

Eastwood Community Clinics: Anna Gagern, Dennis Graham, Don Healy, Delores Massey, Terri Szchta
Epilepsy Center of Michigan: Barabara Rader
Fairlawn-Meadowview: Sherri Goussi
Family Counseling and Meditation: Mary Gibson, Ed Nowakowski
Family and Neighborhood Services of Wayne County: Mary Lee Pearson, Linda Smith-Wheelock

Family Services of Detroit and Wayne County: Dorothy Decker, Joann Donahue, Arthur Epstein, Jodi Lampton, Johnnie McCray, Mary Jane Michaels
Federation of Girls Home: Geri Reutenik
Franklin Wright Settlements: Derrick Brown, Karen Sumpter
Glen Eden Hospital: Joan Coleman, Annikki Kurvi, Dave Mikkola, Jane Neuner

Goodwill Industries of Greater Detroit, SOLEC: Patricia McCandliss

Haven: Ile Shonberg
Harper Hospital: Leorna Brown, Maryjane Gazda, Gregory Irey, Linda Kartes, Debra McNamara

Harper-Grace Hospital: Donna Basala, David Hough
Harper Woods Schools: Elizabeth Parravano
Havenwyck Hospital: Ray Levin
Hawthorn Center: Ann Schwandt, Linda Vanderhaagen
Hazel Park Schools: Lyn Sigurdson
Hegira Programs: Pauline Rahn
Henry Ford Hospital: Margaret Dimond, Larry Schilhaneck
Heritage Hospital: Jerry Barkoff, Venita Griffin, Bridget Gruber, Ramon Gulati, Joe Schepis
Highland Park Schools: Robert Williams
Holy Trinity Social Services: Sister Annette Zipple
Hospice of Southeastern Michigan: Sarajane Schaefer
Information Center, The: Angelina Muscat
International Institute: Helen Charney
Jewish Family Service: Phyllis Schwartz, Marilyn Wineman
Judson Center: Dorothy Chodynecki, Frederick Rini, Bobette Schdrandt

LaCasa Family Services: Arcardio Gonzalez-Brown
Lafayette Clinic: David Castine, Arveta Grady-Fletcher, Robert Wills

Lakewood Clinic: Geraldine Schreier
Livonia Counseling Center: Betty Younger
Lula Belle Stewart Centers: Irma Hill, Orlene Jordan
Lutheran Adoption Services: Linda Yellin
Lutheran Child and Family Service of Michigan: Jean Crzech, Sue Henderson

Lutheran Social Services: Dorothy Vanhuyse
Macomb County Community Mental Health Services, Southwest Mental Health Center: Janet Galysz
Macomb County Council on Aging: Kathy Dodge
Macomb County Prosecutor's Office, Victim Witness Unit: Jane Steeh

Macomb Family Service: Kathy Munson, Paul Tulikangas, Paul Zimmer
Maccomb Hospital Center: Georgia Beltz, Geraldine Mucci
Macomb-Oakland Regional Center: Doug Wise
Metro Youth Program, Inc.: Mary Jiordano, Alice Thompson
Michigan Coalition Against Domestic Violence: Hedi Nuriel
Monte Vista Shelter: Vincent Little
Mount Carmel Mercy Hospital: Rozanne Barzone, Mary Beth Bialick, Nancy Elkins
Mount Carmel Mercy Child Psychiatry: Emma Clarke
Neighborhood Service Organization (NSO), Concord: Gary Dymek
NSO - Geriatiric Screening and Outpatient Services: Louise Beutell, Mary Clark, Vanessa Jordan
NSO - Greater Life Consultation Center: Debra LaComb, Kathy Scott
New Center Community Mental Health Program: Clyde Freeman, Demereal Owens

New Detroit, Inc.: Paul Hubbard
Northeast Guidance Center: Terri Camtois, Jamie Fulton, Pat Sims
Oak Park Children's Day Treatment Center: Nancy Urban
Oak Park Schools: Diane Sheikh
Oakland County Children's Village: Paul Dube
Oakland Family Services: Toby Arons, Debra Frisch, Fred Giltrow, Donna Lackie, Sally Schottenfels

Orchards Children's Services, The: Bruce Binstok
Pontiac Fiftieth District Court, Probation Department: Paul Wieckowski
Pontiac General Hospital Commmunity Mental Health: Audley Bailey, Ramona Boyce, June Clapham
Pontiac General Hospital Inpatient Psychiatry: Ed West
Pontiac Schools: Regina Kuper
Port Huron Hospital Medical Social Work: Joan Pope
Rape Counseling Center: Althea Grant
Rehabilitation Institute: Kathy McAdams
Romulus Help Center: Anne Connor

- Roseville Schools: Marilyn Dixon

Salvation Army Harbor Light Center: Michael Wolf-Branigan
Sinai Hospital - Department of Psychiatry: Art Luz, Jean Rukstele,

Ramons Rukstele
Sinai Hospital - Urban Resources: Rose Hirsch
Sleepy Hollow Educational Centers: Dr. Tony Randolph
Southfield Lathrup Counseling Services: V. Gail Simpson
Southfield Schools: Karen Weiner
Southwest Detroit Community Mental Health Services: Ashe Nikolich, Jean Teschner, Graciela Villalobos
Southwest Oakland Community Mental Health Clinic: Lynnda Ebright, Nancy Gaydos
Square Lake Counseling Center: Robert Bailey
St. Clair County Community Mental Health - Negaunee Center: Marinus Thoen

St. Clair County Department of Social Services: Ivan Benedict
St. Clair Home Care: Marion McCarthy
St. Francis Home for Boys: Jonas Hill
St. John Hospital: Virginia Butala, Gary LaHood, Frank Poma
St. Joseph Mercy Hospital - Pontiac: Donna Deedler, Denise Phillips, Sally Marts
Teen Parent Program: Kathleen Edgar, Loren Hoffman
Van Dyke Community Schools: Linda Olsen
Veterans Administration Medical Center - Allen Park: Mavis Hayes, Frances McGivern, Aaron Rubin
Veterans Administration Medical Center - Ann Arbor: Tom Ross
Wayne Community Living Services: Jan Arps
Wayne County Department of Social Services Children and Youth Services: Annette Piper
Wayne County Department of Social Services Northwest Medical District: Dr. Sabry Attia
Wayne County Department of Social Services - Westland: Elaine Thomas
Wayne County Youth Assistance, Wayne County Juvenile Court: Jacqueline Steingold
Wedgewood Acres Christian Youth Homes: Art Opperwall
Western YMCA: Beth Singer
Westwood School District: Karen Olesko
Willow Creek Centers, P.C.: Dr. James Anthony
Windsor Group Therapy: Dale Swaisgood
Whole Life Program: Lyn Senia
WSU School of Medicine: Richard Sinacola
WSU Psychology Clinic: Shirley Berman
Wolverine Human Services: Greg Drodowski
Wyandotte General Hospital: Wendy Lyon

## College of Urban, Labor and Metropolitan Affairs

DEAN: SUE M. SMOCK

## Foreword

A new College of Urban, Labor, and Metropolitan Affairs was approved by the Board of Governors, effective Fall Term 1987. The primary mission of the new college is to promote, stimulate and engage in pure and applied 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 Chicano-Boricua Studies; the Labor Studies Center; 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, and Chicano-Boricua 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, 470 Mackenzie Hall; 577-5071.

## 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, newpapers and other written records, as well as films, tapes and photographs, are available for research.

## Degree Program

## Bachelor of Arts - with a major in labor studies

## Co-Major Programs

Degrees with co-majors in the following areas are granted in the College of Liberal Arts and the College of Fine and Performing Arts in conjunction with the College of Urban, Labor, and Metropolitan Affairs:

## Chicano-Boricua Studies Urban Studies

## BACHELOR'S DEGREE REQUIREMENTS

## Credits

Candidates for the Bachelor of Arts degree must complete at least 120 credits. Certain curricula may require additional credits above this minimum. (See 'Restrictions on Credit', below.)

## Group Requirements

University-wide general education requirements and College-wide group requirements are designed to enhance students' basic skills and the diversity of their intellectual background. These requirements assure minimal competence in those skills needed to succeed in college and professional life and provide a selective introduction to the increasingly broad range of academic disciplines represented at the University. They serve to emphasize the fundamental means and essential knowledge requited for continuing self-education and intellectual growth.

Beginning with the Fall semester of 1987, all first-semester freshmen entering the College of Urban, Labor, and Metropolitan Affairs and all Urban, Labor, and Metropolitan Affairs students who transfer twelve or fewer credits into the College are required to satisfy both the University General Education Requirements (see page 20) and the College of Liberal Arts Group Requirements (see page 199). While these two sets of requirements substantially overlap and complement each other, the College Group Requirements, in several respects, supplement and modify the University program by requiring additional course work or restricting the use of certain courses to satisfy these requirements.

## UNIVERSITY REQUIREMENT IN AMERICAN GOVERNMENT

for students enrolled prior to Fall Term 1987: See General University Information, pages 23-24.

## Proficiency in English and Mathematics

All undergraduate students who register for the first time at Wayne State University in Fall Semester 1983 or thereafter will be required to demonstrate proficiency in English and mathematics by the time they have earned sixty semester credits towards a bachelor's degree. For full particulars, as well as the requirements applicable to registrants at the University prior to Fall 1983, see the General Information section of this Bulletin, pages 21-22, 24.

## Major and Co-Major Requirements

A major or co-major is a program of concentrated study in a department or area within the College. Specific course requirements for majors are listed in this bulletin under each of the departments or areas of the College. Students are expected to select areas of concentration during their sophomore year and to declare majors in the subject or field of choice by the beginning of their junior year. Students must complete all courses in their majors with an overall average of $C(2.0)$.

Declaration of Major: To declare a major, the student should consult a departmental adviser well in advance of a formal declaration, since the acceptance of the declaration of major is subject to the advice of the department concerned. An up-to-date cumulative record of the student's work should be obtained by the student from the Records

Office and delivered to the department for its files. At the time of formal declaration, the student must obtain the signature of the department chairperson or the designated representative on the major declaration form and file the form in the Office of the Dean, College of Urban, Labor, and Metropolitan Affairs. All courses elected or changed by the student after the declaration of a major should be approved by the department adviser.

The major must include at least twenty credits in one subject, exclusive of the introductory courses and inclusive of some advanced work. No more than forty-six credits in the major subject (including introductory courses) may be counted toward a degree.

Within the above limits, each major program has specific requirements, which may be modified from time to time; therefore, it is the student's responsibility to obtain the current requirements from the major department.

For interdepartmental or field majors, the rule regarding minimum credits required in one subject is waived.

For majors which require intensive study in a particular subject, more than forty-six credits are allowed.

The major completed is part of the degree designation on the diploma.

## Restrictions on Credit

## The College imposes the following restrictions on credit:

Maximum Credits in One Subject: Students may not count toward a degree more than forty-six credits in any one subject except for special curricula which specified additional courses in the curriculum outline.

Over-age Credits: Students attempting to complete majors after a protracted interruptions in education, or those attending the University on a part-time basis over an extended period of time, may find that some early course work is out of date. In such cases, a department may require refresher work or a demonstration that the student is prepared for advanced courses in the department.

Restrictions on Transfer Credit - Two-Year Colleges: No more than sixty-four semester credits may be transferred from two-year colleges.
—Weekend College (College of Lifelong Learning): No more than sixteen credits, which may include six credits of Independent Study, may be transferred from Weekend College. Courses transferred will not count towards fulfilling group or major requirements.
-Labor School: A maximum of ten hours of elective credit may be granted students who have been certified as having completed the Labor School curriculum, have a letter of recommendation from the Director, and have earned sixty credits with an honor point average of at least 2.0.

Restricted Courses: Degree credit is not given for elections in restricted courses which exceed the approved limit specified below.

## Professional Courses

Students may elect a maximum of sixteen credits as cognate work from elected courses offered for degree credit by the several professional schools and colleges within the University. Eight of these credits may be elected with the approval of an academic adviser prior to the declaration of a major, and eight additional credits may be chosen with the approval of the major department. Where academic advisers have approved fewer than eight credits, the major department may approve credit up to the sixteen maximum credits allowed. In curricula which specifically require professional courses in excess of the maximum, additional credits may be elected.

## Specialized Courses

Unless a curriculum specifies otherwise, the maximum amount of degree credit which may be earned in certain specialized areas is limited as follows:


A total of not more than four credits from the following list of courses may be counted toward a degree unless a curriculum specifically requires more extensive elections:


## Repeated Subjects

It is understood that degree credit will not be granted for course work in which credit has already been granted. Since similar courses may have different names at different times and at different colleges, students are advised to make sure they do not offer repeated work as credit towards a degree.

## Extra Credits

Extra credits are credits taken in excess of the normal load of eighteen credits. Students with 3.0 (or above) honor point averages may take more than eighteen credits when their proposed programs carry the written approval of the adviser and the Dean.

## Advanced Courses

At least fifteen credits in courses numbered 300 or above must be earned.

Combined Degrees: Courses taken in the first year of professional school may be applied toward the required fifteen credits in advanced courses.

## Honor Point Average

All students are required to maintain an over-all honor point average of C (2.0) for all degree work elected. See 'Honor Point Average' in the General University Information section of this Bulletin, page 34.

## Residence

To qualify for a baccalaureate degree in the College of Urban, Labor, and Metropolitan Affairs, a minimum of thirty credits must be earned in the College. The last thirty credits applicable to the degree, not including credit by special examination, must be completed in an undergraduate college or school of Wayne State University. Credit by special examination may not be counted as residence credit, but such credit, if earned during a semester in which the student is registered, will not be considered an interruption of residence.

In special circumstances, senior residence may be interrupted with the approval of the student's major department and the approval of the Dean; however, when the candidate has fewer than the minimum thirty credits of residence in the College of Urban, Labor, and Metropolitan Affairs or in the College of Liberal Arts, no such exceptions are permitted.


## 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 5. The following additions and amendments apply to the College of Urban, Labor, and Metropolitan Affairs.

## Recommended High School Preparation

The College of Urban, Labor, and Metropolitan Affairs strongly supports the University's recommendations concerning academic preparation. See page 13.

## Attendance

Regularity in attendance and performance is necessary for success in college work. Attendance requirements will be announced by instructors at the beginning of each course.

## Normal Program Load

The requirements for graduation are based upon an average program of fifteen credits per semester for eight semesters. A normal load should not exceed eighteen credits.

Because two hours of outside preparation are normally expected for each class hour, a fifteen credit program calls for approximately forty-five hours of class attendance and study per week. Students who undertake such a program should expect to give it their full time and energy. A few hours of employment a week may be safely added to this program by a capable student.

## Retention of Records

Term papers and examinations shall either be returned to the student or retained by the instructor for a minimum of six months. 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.

## Study Abroad

For more than a quarter of a century, the University has provided its students with the opportunity to study abroad for a year in order to experience the cultural, academic, and social life of a foreign country.

The College of Urban, Labor, and Metropolitan Affairs has recently initiated an Undergraduate Student Exchange in Urban Affairs with the University of Salford, England. Students in good academic standing in any college or program in the University, with the approval of the major department, may apply for one or two semesters of study in Salford. Prerequisites include: a minimum 3.0 h.p.a. or departmental nomination for the program; at least twelve credits earned towards a major; and satisfactory completion of at least fifty-four credits prior to departure. Participants will register as full-time students and pay tuition at Wayne State University and will receive University credit for Salford study. Interested students should contact the Office of the Dean, College of Urban, Labor, and Metropolitan Affairs; telephone: 577-5071.

College of Urban, Labor, and Metropolitar Affairs students are also eligible for other opportunities to study abroad that the University provides, including the Junior Year in Munich or Freiburg Program, the Wayne at Gordes Program, and the exchange program with the Jagiellonian University in Krakow, Poland. For these and other opportunities for foreign study, see 'Study Abroad,' page 209; and contact the University Advising Center, 577-2680.

## Phi Beta Kappa

Phi Beta Kappa, the nation's oldest honor society, was founded at the College of William and Mary in Virginia on December 5, 1776. The one hundred and fifty-sixth chapter of the society, Gamma of Michigan, was installed at Wayne State University on January 16, 1953 under a charter granted to the College of Liberal Arts by the United Chapters. Membership in the chapter is restricted to its charter members and to those members of the junior and senior classes of the College of Liberal Arts who have been elected to membership by the chapter and who have formally accepted election and participated in initiation ceremonies of this or some other cooperating chapter. In addition, all members of the University staff who have been elected to membership by other chapters of Phi Beta Kappa automatically become affiliated members of the local chapter for the duration of their stay at the University.

Students in the College of Urban, Labor, and Metropolitan Affairs are also eligible for election if they meet the chapter's requirements and are enrolled in a degree program transferred from the College of Liberal Arts at the time the College of Urban, Labor, and Metropolitan Affairs was formed.

Election to membership is restricted to students with at least two academic years of residence in the College of Liberal Arts, and is based not only on high scholarship and integrity, but also on breadth and depth of program. Students who wish further information are urged to consult with the secretary of the chapter concerning the requirements.

## Graduation With Academic Distinction

Candidates eligible for the bachelor's degree may receive a special citation placed on their diplomas under the following circumstances: The designations of 'summa cum laude,' 'magna cum laude,' and 'cum laude' will be conferred upon graduating students whose cumulative honor point averages at Wayne State University fall within approximately the upper $5 \%$, the next $5 \%$ and the next $10 \%$ or the senior class, respectively. The honor points used to identify the lower limits for each designation will be based upon the honor points attained by seniors in the College of Liberal Arts at these percentile Ievels during the preceding academic year. Only students who have earned sixty or more credits at Wayne State University are eligible to graduate with one of the above distinction citations.

## Academic Probation

Low Honor Point Average: Student's whose honor point average falls below 2.0 will be placed on academic probation. If serious honor point deficiencies are incurred, the students may be required to obtain permission from the Office of the Dean before registering. Such permission will be granted only after an interview during which some assurance is given that previous causes of failure have been ameliorated.

Lack of Progress: Students whose records reveal an excessive number of 'Withdrawal,' 'Incomplete' and ' X ' marks and who, as a result, make little or no progress towards earning a degree, will be placed on academic probation. Such students may be required to confer with an
academic adviser in the Undergraduate Office in order to register. Students on academic probation are encouraged to use support services of the University.

Restriction: While on academic probation, a student may not represent the College in student activities.

Removal of Academic probation: Probation will be removed at the end of any term in which an over-all average of ' C ' or better for all degree work taken in the College or earned as cognate credit is achieved.

## Exclusion

Low Honor Point: Students on academic probation who incur serious deficiencies or fail to raise their honor point averages within a reasonable length of time, may be excluded from the College. Such an exclusion will be reviewed by the Probation Committee and the Dean upon the request of the student.

Lack of Progress: After having conferred with an academic adviser, students who make little or no progress towards a degree may be excluded from the College.

Readmission: After one year of exclusion, students may apply for readmission to the College. The decision to readmit will be based upon evidence which indicates that circumstances have changed during the year and that the probability of success has increased.

Cheating and Plagiarism: The principle of honesty is recognized as fundamental to a scholarly community. Students are expected to honor this principle and instructors are expected to take appropriate action when instances of academic dishonesty are discovered. An instructor, on discovering such an instance, may give a failing grade on the assignment or for the course. Serious acts of dishonesty may lead to suspension or exclusion.

The instructor has the responsibility of notifying the student of the alleged violation and the action being taken. Both the student and the instructor are entitled to academic due process in all such cases. Information on procedures is available in the Office of the Dean.

## Academic Advising

Freshmen and sophomores are encouraged to consult advisers each time they register. A staff of academic advisers is available in the University Advising Center. Students should confer with advisers on all questions concerning degree requirements, academic regulations, course elections, and programs of study. It is of primary importance that students talk with an adviser when they are having difficulties in their acadernic work. Students may choose either to see a specific adviser or any available adviser. Freshman and sophomore students in some of the special curricula are required to consult departmental advisers or advisers in other colleges.

Juniors and seniors are assigned to advisers in their major departments, and their course elections in the last two years are arranged in consultation with these departmental advisers.

## Office of the Dean

Dean: Sue Marx Smock
470 Mackenzie Hall 577-5071

## Archives of Labor and Urban Affairs

Director: Philip P. Mason
231 Reuther Library
577-4003

## Center for Chicano-Boricua Studies

Interim Director: Jorge Tapia-Videla
311 Justice Building.
577-4378

## Center for Urban Studies

Interim Director: Harold Wolman
242 Mackenzie Hall
577-2156

## Labor Studies Center

Director: Hal Stack
300 Justice Building
577-2191

## University Professors of Labor Studies

University Professor: Irving Bluestone
University Professor: Douglas Fraser


# CHICANO-BORICUA STUDIES 

Office: 311 Justice Building
Interim Director: Jorge Tapia-Videla

## Lecturers

Enid Valle
The Center for Chicano-Boricua Studies (CBS) is a multi-service unit which plays an important role in the University's urban mission. The Center engages in teaching, research, student support and community services. It offers courses, as well as a co-major program, which are designed to serve the educational interests of students who wish to increase their knowledge of Mexican-American, Puerto Rican, and Cuban populations both in the United States and in other countries; of those who plan to enter a bilingual education program; and of those who wish to complement their field of study with a co-major in Chicano-Boricua Studies.

## Co-Major Program

The Chicano-Boricua Studies Co-Major Program is an undergraduate, multidisciplinary course of study designed to strengthen the career preparation of students who plan to work in a multi-ethnic urban setting. This program leads to a bachelor's degree with co-major designation. All students who have fulfilled the course requirements of the co-major program will receive this notation on their transcript.

Admission: Students may apply for acceptance to the Chicano-Boricua Studies Co-Major Program by submitting a Declaration of Major Form for approval at the beginning of their junior year. See page 42 for instructions on declating a major.

Freshman Year Special Access: The Center has a special access program for students who fall below University admissions requirements. Students receive support services such as academic, personal, and career counseling, and study skills training. Requirements for admission to the program include submission of an official Application for Undergraduate Admission and a high school transcript, and an interview with the Department's selection committee.

MAJOR REQUIREMENTS: The co-major program requires completion of the following core courses and a minimum of eighteen credits in elective courses.

## Required Core Courses (18 credits)

## credits

CBS 201 - Introduction to Chicano-Boricua Studies........................................... 3
CBS 210 - Chicano Literature and Culture................................................................ 3
CBS 2 I1 - Puerto Rican Literature and Culture................................................ 3

CBS 242 - (FC) History of Puerto Rico and Cuba ......................................................
CBS 243 - History of Latinos in the United States.............................................. 3
Elective Courses (18 credits)
ANT 651 - Latin American Prehistory ........................................................... 3
CBS 311 - Urbanization and the Latino .......................................................... 3
CBS 312 - Politics in the Latino Community ................................................... 3
CBS 351 - Precolumbian Mesoamerican Cultures ............................................ 3

CBS 362 - Seminar in Latino Urban Problems II ..........................................................

## tino En Marcha Grant

udents who demonstrate financial need and are enrolled in two core 3 courses are eligible to receive the Latino En Marcha Grant (up to 30 per semester). Applicants should contact the Department for ther information.

## COURSES OF INSTRUCTION¹ (CBS)

141. Chicano-Boricua Practicum. Cr: 1(Max. 2)

Prereq: consent of instructor. Open only to students in Chicano-Boricua program. Developing academic skills.
(F,W)
201. Introduction to Chicano-Boricua Studies. Cr. 3

Survey of social, economic and political problems and experiences of the Chicano and Puerto Rican communities in the United States.
210. Chicano Literature and Culture. (SPA 240). Cr. 3

Examination of Chicano literature. Themes and figures in a social and historical context.
211. Puerto Rican Literature and Culture. (SPA 250). Cr. 3 Examination of Puerto Rican literature. Themes and figures in a social and historical context.
241. (FC) History of Mexico. Cr. 3

Historical development of Mexico and the Mexican people from the Spanish conquest to the present. Interaction of political, social, economic and cultural influences.
242. (FC) History of Puerto Rico and Cuba. (HIS 242), Cr. 3 Historical development of Puerto Rico and Cuba from the pre-Columbian period to the present. Interaction of political, social, economic and cultural influences.
243. History of Latinos in the United States. Cr. 3

Historical development of people of Hispanic descent in the United States from the early nineteenth century to the present. Cultural conflict, interaction of political, social, and economic forces.
291. (SPA 291) Spanish American Literature and Culture. Cr. 3(Max. 9)
Genres, writers, themes, trends. Topics to be announced in Schedule of Classes .
311. Urbanization and the Latino. Cr. 3

Migration, employment and urbanization of different Latino groups in the United States.
312. Politics and the Latino Community. Cr. 3

Political participation of the Spanish-speaking people from 1848 to the present; critical evaluation of political ideologies and issues.
351. (ANT 551) Precolombian Mesoamerican Cultures. Cr. 3

Prereq: ANT 210 or consent of instructor, or CBS 201. Survey of the history and characteristics of culture in Mesoamerica prior to colonization, from the Maya and Olmec to the Aztec.
361. Seminar in Latino Urban Problems I. Cr. 2-6

Prereq: consent of instructor. Contemporary urban problems of the Spanish-speaking people in the United States. Emphasis on research and field activities.
362. Seminar in Latino Urban Problems II. Cr. 2-6

Prereq: consent of instructor. Continuation of research projects and

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## LABOR STUDIES

Office: 300 Justice Building
Director: Hal Stack

Administrative Committee<br>Edward Cushman, Political Science; Philip P. Mason, History; Cary M. Lichtman, Psychology

Degree Program

## Bachelor of Arts-with a major in Labor Studies

Labor Studies is an interdepartmental program offering an opportunity to study the organized labor movement, using the concepts and approaches of various academic disciplines. Students completing the program will receive a Bachelor of Arts degree in the College of Urban, Labor, and Metropolitan Affairs with a major in Labor Studies.

## Bachelor of Arts <br> with a Major in Labor Studies

The Labor Studies Program is administered by an interdepartmental committee. The prospective student should consult one of the members of this committee with regard to goals and requirements of the program before enrolling. Normally, the election of this major should occur at the end of the sophomore year, but interested students are urged to obtain advice with respect to required courses and breadth of experience as early as possible. The curriculum may be considered as preparatory to a career in the labor movement or as training for those already active in a union. It will also provide a suitable background for graduate study in this area; however, the committee recommends that students planning graduate study consult a committee member regarding graduate school requirements and consider a dual major including both labor studies and a related discipline such as economics, history, political science or sociology.

Admission Requirements for this program are satisfied by the general requirements for undergraduate admission to the University; see page 13.

DEGREE REQUIREMENTS: Candidates for the bachelor's degree must complete 120 credits in course work including satisfaction of the College of Liberal Arts Group Requirements (see page 199) and the University General Education Requirements (see page 20), as well as the core courses and specialized and applied curricula listed below. All course work must be completed in accordance with the academic procedures of the University and the College of Urban, Labor, and Metropolitan Affairs governing undergraduate scholarship and degrees; see pages 5-35 and 414-415, respectively.

## REQUIRED CORE COURSES (Twenty-one Credits)



## SPECIALIZED CURRICULUM

crea
HIS 563 - Socialism and the European Labor Movement ..... 3 *
P S 504 - American Political Reform Movements. .....  .4
P S 634 - Employee Relations in the Public Sector ..... 3
PSY 656 - Psychology of Union-Management Relations .....  3
PSY 554 - Motivation in the World of Work .....  3
APPLIED CURRICULUM
A maximum of twelve credits in the following special topics may beearned under the general title 'Applied Labor Studies' as LBS 450:
credits
Collective Bargaining .....  3
Labor Education ..... 3
Labor Law. .....
Labor Problems. .....  3
Industrial Health and Safety. .....  3
Quality of Work Life .....  3
Technological Development and Labor Relations. ..... 3
Union Organization and Administration .....  .3

Students are referred to the program coordinator for information concerning courses in the applied curriculum which are under development and may be arranged through other colleges. To the extent that one or more of the topics may be unavailable, equivalent courses may be approved by the Administrative Committee.

## SUGGESTED ELECTIVES

The following courses are suggested electives in the Labor Studies program; however, this list is not restrictive. In consultation with the adviser, a student may elect others.


## Non-Credit Offerings

In addition to the undergraduate degree program described above, the Labor Studies Center also offers a variety of non-credit courses, conferences and specially designed programs for unions and their members throughout southeast Michigan.

Non-Credit Courses: The Labor Studies Center offers a full range of short, non-credit courses on skills and issues important to unions and their members. These include courses on labor law, collective bargaining, parliamentary procedure, steward training, grievance analysis, public speaking, new technology, occupational health and safety, and new forms of work organization. These courses typically meet for six two-hour sessions and are held both on campus and at local union halls. The courses are open to all workers regardless of previous educational background. They are not regular credit courses, and should not be confused with University credit courses identified by three-letter subject area codes and numbers.

Labor School Program: In addition to the short non-credit courses, the Labor Studies Center also offers a two-year, non-credit program
designea to strenguen workers' leadership and communication skills and increase their understanding of the complex issues confronting workcrs and their unions in contemporary society. Open to all workers regardless of previous educational background, the Labor School meets once a week for two and one-half hours thirty weeks each year. Students who successfully complete the Labor School program are eligible for undergraduate admission to the University regardless of previous educational background.

## FIRST YEAR

Labor Perspectives - Union history and current issues.
Effective Reading - Reading speed and comprehension
Industrial America - Significant events and people in the U.S.
American Society Today - Power and politics in society and the workplace.
Science and Technology - Ideas/technologies affecting daily life.

## SECOND YEAR

Economics for Workers - Function and benefits of American economy.

Effective Writing - Writing, library skills, and analysis of news reporting and fiction.
Labor Problems Seminar - Each student researches a labor problem of personal interest and makes two oral reports and a brief written report.

## COURSES OF INSTRUCTION ${ }^{1}$ (LBS)

## 250. (HUM 250) Introduction to Labor Studies. Cr. 4

 Examination of the diverse images of labor in the popular arts (films, songs, stories and graphics) and exploration of the contrasting perspectives which shape these images.450. Applied Labor Studies. Cr. 3(Max. 12)

Prereq: consent of instructor. Practical training in various labor relations specialties. Consult coordinator for specific topic.
470. Senior Seminar. Cr. 3 (Max. 6)

Prereq: consent of instructor. Research, reflection, discussion and analysis of labor relations practice.
490. Directed Study. Cr. 3-6(Max. 6)

Prereq: consent of coordinator. Supervised reading and research in labor studies.

## URBAN STUDIES

Offices: 848 Mackenzie Hall and 225 State Hall

Co-Directors: Corinne L. Gilb and Bryan Thompson

## Co-Major Program

The Urban Studies Co-Major Program is an undergraduate interdisciplinary course of study leading to a bachelor's degree with a co-major designation. The co-major format enables students to graduate with two fields of major emphasis. The co-major program is flexible enough to serve a wide variety of student needs and interests. 'Urban' includes 'suburban'; the spatial patternings of national urban networks as well as the inner life of individual cities; and broad historical, international comparative, economic or cultural concerrís as well as specific practical problems.

Admission: A student must have met the entrance requirements of the University (see page 13) to apply for this program. When the Declaration of Major form has been completed at the beginning of the junior year and has been authorized for an approved major, the student may then use the same form to apply for acceptance into the co-major program.

CO-MAJOR REQUIREMENTS: Three core courses (ten credits) and twenty-two credits of urban-related elective courses, of which at least six must be upper division are required. All course work must be completed in accordance with the academic procedures of the University (see pages 5-35) and those of this college (see pages 414-415) and of the college sponsoring the major program taken as a cognate to the urban studies curriculum.

## Core Requirements (10 credits)

| U S 200 - (SS) Introduction to Urban Studies $\qquad$ 4 |  |
| :---: | :---: |
|  |  |
|  | U S 401 - Interdisciplinary Pro-Seminar. |
| One of the following: |  |
| U S 600 - Field Studies................................................................................................. 3 |  |
|  |  |
| U S 601 - Supervised Field Experience................................................... 3 |  |
| US 603 - Field Geography ................................................................ 3.7 |  |
| U S 605 - Independent Field Study....................................................... 2-4 |  |
| Electives |  |
| The University offers a large number of urban-related courses suitable as electives. The following list is not exhaustive; |  |
| AFA 355 - The Consumer and the Market................................................. 3 |  |
| AFA 555 - Trends in Consumer Affairs.................................................... 3 |  |
| ANT 506 - Urban Anthropology............................................................ 3 |  |
| ANT 570 - Applied Anthropology ......................................................... 3 |  |
| B10 105 - (LS) Introduction to Life.......................................................... 4 |  |
| B10 103 - (LS) Human Environmental Biology ............................................ 3 |  |
| B10 120 - Microbes and Human Affairs................................................... 2 |  |
| BIO 240 - Plants and Human Affairs............................................................. 2 |  |
| B10 385 - Human Heredity........................................................................ 3 |  |
| CLA 325 - Urban Study of Ancient Rome................................................... 4 |  |
| ECO 580 - Urban and Regional Economics 1.................................................. 3 |  |
| ENG 239 - (IC) Introduction to Afro-American Literature: Literature \& Writing.......... 3 <br> ENG 542 - American Literature: 1865-1914......................................................... 3 |  |
|  |  |
| ENG 548 - Topics in Afro-American Literature <br> (either Harlem Renaissance or Contemporary Black Writers). $\qquad$ 3 |  |
|  |  |
| ENG 549 - Topics in American Literature................................................. 3 |  |

ENG 567 - Topics in Folklore and Folklife.3
GEG 313 - (SS) Introductory Urban Geography ..... 4
GEG 565 - Regions of Detroit ..... 4
GEG 570 - Urban Canada ..... 4
GEG 613 - Advanced Urban Geography ..... 4
GEG 615 - Internal Structure of the City ..... 4
GEG 624 - Industrial Geography. ..... 4
GEG 628 - Marketing Geography ..... 4
GEG 635 - Geography of Ethnic Groups in the United States ..... 4
GEG 651 - Urban and Regional Systems ..... 4
HIS 579 - Cities and Empires: European, Muslim, Chinese, and Russian ..... 3
N E 303 - Great Cities of the Near East ..... 3
PS 224 - (SS) Introduction to Urban Politics and Policy ..... 4
P S 311 - Politics and Local Justice ..... 4
PS 522 - issues in Urban Public Policy and Management ..... 4
PS 602 - Intergovernmental Relations and American Federalism ..... 3
PSY 260 - Psychoiogy of Social Behavior. ..... 4
PSY 350 - Industrial-Organizational Psychology ..... 3
PSY 467 - Environmental Psychology ..... 3
PSY 563 - - Group Dynamics. ..... 3
PSY 565 - Psychological Aspects of Leadership ..... 3
SOC 202 - (SS) Social Problerms. ..... 3
SOC 351 - The Nature and Impact of Population on Society. ..... 3
SOC 382 - Criminology: Society, Crime and the Criminal ..... 3
SOC 550 - Urban and Metropolitan Living ..... 3
SOC 555 - Collective Behavior: Masses, Mobs and Social Realities ..... 3
SOC 557 - Race Relations in Urban Society ..... 3
SOC 563 - American Labor: Blue Collar, White Collar. ..... 3
SOC 581 - Law in Human Society ..... 3
UP 511 - Urban Planning Process ..... 4
UP 631 - Housing Development ..... 4
U P 652 - Transportation and Planning ..... 4
UP 665 - Land Use Controls ..... 3
Upon the approval of an Urban Studies adviser, the student may also elect courses in philosophy, computer science, statistics, architectural drafting, journalism, or speech pertaining to mass media, or in colleges outside Urban, Labor, and Metropolitan Affairs-depending on the student's overall plan of study. Some urban-related careers require special training in natural sciences and/or advanced mathematics.

## COURSES OF INSTRUCTION ${ }^{1}$ (U S)

## 200. (SS) Introduction to Urban Studies. (SOC 250) (GEG 200) (HIS 200) (P S 200). Cr. 4

Prereq: sophomore standing. Urban phenomena, past and present, quality and nature of urban life, major concerns of urban areas; perspectives and techniques of various urban-related disciplines. (T)
291. (P S 291) Political Science Internship. Cr. 14(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 faculty supervisor. (T)
401. Interdisciplinary Pro-Seminar. Cr. 3

Prereq: U S 200. Undergraduate credit only. Topics to be announced in Schedule of Classes .

## 600. (CRJ 600) Field Studies. Cr. 1-8(Max. 8)

Prereq: U S 401. Undergraduate credit only. Comprehensive internship program involving various criminal justice agencies. Placement may be made in court, corrections, police, juvenile justice, and other agencies at the state, county and local levels; opportunities include agency procedure and policy, patrol, case analysis, report writing and research.

## 601. Supervised Field Experience. Cr. 3

Prereq: U S 401 and written consent of instructor. Undergraduate credit only. Field experience correlating theory with practical work. Meets with FAC 592.

## 603. (GEG 650) Field Geography. Cr. 3-7

Prereq: U S 401 and 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, including urban and rural land use, industrial and commerical locations, urban social change, agriculture, soils and landforms. Normally held in summer.
(Y)
605. (GEG 652) Independent Field Study. Cr. 2-4(Max. 4)

Prereq: 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 unit use and evaluation.
(Y)

[^89]
## Additional Academic Programs

# UNIVERSITY COUNSELING SERVICES 

Office: 334 Mackenzie Hall; 577-3398

Director: John E. Hechlik, Ph.D.
Associate Director, and Assistant Director for Assessment: Thomas Wilhelm, Ed.D.
Assistant Director
for Academic Development: Marie E. Byrnes, Ed.D.
Counselor, Career Development: Wayne H. Chubb, Ph.D.
Assistant Director
for Program Services: Karen F. Davis, Ph.D.
Academic Associate,
Academic Development: Deborah Daiek, M.A.
Coordinator, Minority Programs: Janice Green, M.A.
Counselor, Personal Development: Drevis L. Hager, Ed.D.
Coordinator, Women's Resource Center, and Re-Entry to Education Program: Kay A. Hartley, M.A. Clinical Social Worker, Personal Development: George T. Hunter, M.S.W. Academic Associate,

Career Development: Marie Kaigler-Reese, M.Ed. Assistant Director for

Personal/Career Development: Marisa G. Keeney, Ph.D. Academic Associate,

Special Student Development: Elaine B. McCollum, M.A. Assistant Director for

Special Student Development: Ruth R. Panagos, M.S.Ed. Coordinator, Educational Resources for

Students with Disabilities: Betsy A. Schrauder, Ed.M.
In addition to services described on pages 29 and 41, University Counseling Services offer non-credit courses to help students ensure successful educational outcomes, develop skills for University and career life, and avoid commonly-encountered difficulties.

## COURSES OF INSTRUCTION ${ }^{1}$

## Reading Efficiency (R E)

## 090. Learning Theory and Study Skills. Cr. 0

Offered for $S$ and $U$ grades only. No degree credit. Application of learning and memory theory for developing basic reading skills and effective study habits; memory improvement, time scheduling, note-taking methods, textbook chapter reading and test-taking techniques.

091. Individualized Study Skills Laboratory Cr. 0

Offered for $S$ and $U$ grades only. No degree credit. Individualized course in reading and study skills offered on an arranged basis. Preparation for professional school examinations (e.g., GRE, MCAT); supplementary mathematics and writing skills programs also available.
094. Vocabulary Enrichment. Cr. 0

Offered for $S$ and $U$ grades only. No degree credit. Exploration of a variety of methods for improving and expanding both general and specialized vocabulary according to individual student's needs.

## 095. Analytical Reading for Textbook Stady Cr. 0

Offered for $S$ and $U$ grades only. No degree credit. An analytical, developmental reading method designed to increase speed of reading comprehension; focuses primarily on textbook study-reading.
096. Speed Reading. Cr. 0

Offered for $S$ and $U$ grades only. No degree credit. Strategies practiced to overcome common reading problems that inhibit efficient reading speed. Skills developed to enable students to use flexibility in choosing a reading rate that corresponds to their purpose.
098. Pre-Medical Study Skills. Cr. 0

Prereq: consent of instructor. Offered for $S$ and $U$ grades only. No degree credit. Time management, comprehension skills, scientific terminology, medical note-taking, test-taking skills, analytical reading, critical thinking and problem-solving.

## University Counseling Services (UCS)

## 091. Designing Your Future. Cr. 0

Prereq: coregistration in at least one credit course. Offered for $S$ and $U$ grades only. No degree credit. Concepts of work and career; development of knowledge of world of work and related self-knowledge; exploration of educational and career options; decision-making strategy; establishment of personal career goals and career plan.

## ROTC PROGRAMS

## Military Science

Office: 214 Calihan, University of Detroit; 927-1303

## Objectives

Army ROTC is a preprofessional program leading to an appointment as a second lieutenant in the United States Army, Army Reserve, or Army National Guard. The program teaches fundamental concepts and principles of leadership; develops leaders and managers for the military and civilian communities; creates a strong sense of personal integrity, honor, and individual responsibility; and also gives the student an appreciation of the requirements for national security.

## Programs

The Four-Year Program: This program consists of a Basic Course, the first two years; and an Advanced Course, the last two years. It is open to all students admitted to matriculated status at Wayne State University, as well as those at the University of Detroit, Oakland University, and Lawrence Institute of Technology. Students may join the Basic Course by enrolling in the freshman or sophomore level course. There is no obligation toward military service nor any commitment to continue in Military Science; students have a chance to consider the ROTC program and the possibility of the Army as a career, or as an avocation with the Reserve Components while pursuing a civilian career. A Basic Course class may be dropped or withdrawn from as from any other academic course. Advanced Course students incur a contractual service obligation and receive the benefits accompanying it, including up to $\$ 2750$ for the final two years.

Students entering the program via the Basic Course and progressing through the Advanced Course will attend a six-week paid Advanced Camp, normally during the summer following the junior year. The camp provides practical experience and training in tactical and technical subjects, with specific emphasis on leadership training; this includes problem analysis, decision making, and troop-leading experiences in situations under stress. Completion of this four-year program leads to a commission as a second lieutenant, usually at graduation.

ROTC cadets attend Advanced Camp at Fort Lewis, Washington, for six weeks beginning in early June. They are paid one-half the pay of a second lieutenant, provided travel pay to and from camp, room and board, uniforms and equipment, and medical care while in attendance.

The Two-Year Program: Sophomores, community college transfer students, graduate students, and others who did not enroll in the Basic Course during their freshman or sophomore year may enter the Advanced Course following a six-week paid basic camp at Fort Knox, Kentucky. There they complete the Basic Course requirements in lieu of electing the freshman and sophomore level courses. They then progress as regular Advanced Course students. There is no service obligation incurred in attending basic camp.

Alternative Two-Year Entry Option: The Advanced Program may also be entered at the junior level without first attending basic camp at Fort Knox. The student enrolls and participates in the Advanced Course at the junior level, and attends basic camp during the following summer. Advanced Camp and commissioning occur during the summer following the senior year.

Advanced Piacement: Veterans and members of the Reserve Components may receive credit for Basic Course requirements and enroll directly in the Advanced Course. Credit may also be granted for students who have taken four years of Junior ROTC in high school. This advanced placement and credit applies only to the Military Science Program.

## Academic Curriculum

All Military Science courses incorporate both a lecture and a leadership laboratory phase. Concepts taught in the classroom are put to 'hands-on' practice in the laboratory. Many extracurricular activities are conducted outdoors and include such subjects as snowshoeing, cross-country skiing, rappelling, and constructing rope bridges. These Ranger activities are open to all students.

Leadership laboratory for the Advanced Course students provides core preparation for the officer candidate. In addition to normal laboratory exercises, Advanced Leadership Laboratory requires student participation in two other areas:
(1) Physical Training: Advanced Course students are required to attend physical training (PT) sessions conducted by the department.
(2) Mandatory Training Events: Advanced Course students are required to participate in mandatory training events such as: one field training exercise each semester, one formal military ball, and drill and ceremony, as well as 'hands-on' training during laboratory.

## BASIC COURSE (Open to all students)

MSC 100 - Introduction to the Military Profession ............................................. 1

MSC 102 - Introduction to the Military Profession II........................................... 1
MSC 200 - Fundamentals of Leadership....................................................................
MSC 202 - Military History......................................................................................
MSC 207 - Introduction to Applied Leadership: Basic Camp ................................ 6

## ADVANCED COURSE

(By invitation to qualified students who have completed or received credit for the Basic Course. Cadets are granted a subsistence allowance of $\$ 100$ per month. Successful completion qualifies cadets for commission upon graduation.)

MSC 302 - Advanced Leadership and Military Skills 11 .......................................... 3
MSC 307 - Applied Leadership: Advanced Camp ............................................... 6
MSC 400 - Advanced Leadership and Management I........................................... 3
MSC 402 - Advanced Leadership and Military Skills 11 ............................................. 3

## Scholarships

ROTC scholarships are offered for four, three, and two years. The four-year scholarships are awarded on a nation-wide competitive basis to United States citizens who will be entering college as freshmen. The three- and two-year scholarships are awarded competitively to students who are already enrolled in college. Students who attend the basic camp may also compete for two-year scholarships. Scholarships pay for tuition, textbooks, laboratory fees, and a living allowance of up to $\$ 1000$ each year the scholarship is in effect.

## COURSES OF INSTRUCTION¹ (MSC)

## 100. Introduction to the Military Profession I. Cr. 1

Introduction to the Reserve Officers' Training Corps at the University of Detroit. Topics include: the role of the Army, national defense structure, weapons marksmanship, funadmentals of map reading, basic first aid, customs and courtesies of the Army, development of leadership responsibilities.

## 102. Introduction to the Military Profession II. Cr. 1

This course expands upon the fundamentals of MSC 100. Application of principles of the integrated act of shooting, weapons safety, signt adjustment and correct firing positions. Other topics include: mountaineering, military professionalism and the Army organization, written communications, rope management, drill and ceremony, first aid and physical fitness training.
200. Fundamentals of Leadership. Cr. 2

Introduction to the principles of leadership and management: basic skills, principles of military leadership. Weapons marksmanship; written communications; first aid; cold weather training; advanced rope management; mountaineering; physical fitness training.

## 202. Military History. Cr. 3

Contemporary military situations and operations examined in context of historical precedents. Role of U.S. Army in American society; war-fighting role from American Revolution to Vietnam War Emphasis on historical-mindedness and ability to apply lessons of the past to problems of the present. All ROTC cadets must complete this or a college-level survey course in military history, focusing on the American or European experience.
(F,W)

## 207. Introduction to Applied Leadership: Basic Camp. Cr. 6

 Prereq: consent of department chairperson. Six weeks of full-time training at Fort Knox, Kentucky, in the application of leadership principles and basic skills; equates to entire Basic Course program and can be substituted for those courses. Successful completion qualifies students to enter Advanced Course of Military Science.300. Advanced Leadership and Military Skills I. Cr. 3

Prereq: consent of department chairperson. Development, through conference and practical exercise, of leadership potential by concentrating on traits, principles, behavior and problem solving. Emphasis also on developing military skills in preparation for attendance at Advanced Camp. Field-training exercises, leadership laboratories and physical fitness sessions.

## 302. Advanced Leadership and Military Skills II. Cr. 3

Prereq: consent of department chairperson. Continuation of development of leadership potential and military skills from MSC 300. Field training exercises, leadership laboratories, and physical fitness sessions.
307. Applied Leadership: Advanced Camp. Cr. 6

Prereq: consent of department chairperson: Six weeks of full-time intensive application of leadership principles and military skills. Students evaluated on leadership ability in a variety of stressful situations. Conducted at an Army installation.

## 400. Advanced Leadership and Management I. Cr. 3

Prereq: consent of department chairperson. Development of the professional knowledge required of a military officer through the study of the role of officer/leader in management of training personnel and logistics. Directed readings and discussions on ethical reasoning and

[^90]the defining of personal and professional values. Students required to participate in field-training exercises, leadership laboratories and physical fitness sessions.

## 402. Advanced Leadership and Management II. Cr. 3

Prereq: consent of department chairperson. Continuation of development of professional military knowledge from MSC 400. Emphasis on Uniform Code of Military Justice. Participation in field-training exercises, leadership laboratories and physical fitness sessions.

## Aerospace Studies

The Air Force Officer Education Program at the University of Michigan provides Wayne State University students opportunity to earn a commission as a second lieutenant in the U.S. Air Force through the Air Force Reserve Officer Training Corps (AFROTC). Four-year and two-year programs are offered, and aerospace studies classes are conducted on the University of Michigan campus; registration is managed by the AFROTC. Interested students should contact AFROTC at (313) 764-2403 or visit Room 154 at North Hall on the Ann Arbor campus. Students who enroll as cadets in the Air Force Officer Education Program, successfully complete the program, and receive a university degree are commissioned as second lieutenants in the United States Air Force.

Admission to introductory-level courses in this program is open to anyone, but admission to junior-level standing is open only to students having matriculate status in a four-year degree program at one of the resident sponsoring institutions.

Career Opportunities: Men and women can serve in a wide range of flying duties as aircrew members or in technical fields such as meteorology, research and development, communications and electronics, engineering, transportation, logistics, and intelligence, as well as in numerous managerial and training fields such as administrative services, accounting and finance, personnel, manpower management, education and training, investigation, and information services. Advanced education or technical training for these career areas may be obtained on active duty at Air Force expense.

Four-Year and Two-Year Programs: The four-year program consists of eight terms (sixteen credits) of course work. The first four terms (freshman and sophomore years) comprise the General Military Course (GMC). During the summer following this sequence, each student is required to attend a four-week summer training session. After completing field training, students enroll in the last four terms (junior and senior years) of AFROTC called the Professional Officer Course (POC). The two-year program is for junior-level college students or graduate students who have not participated in the GMC but want to enter the POC. These students must attend a six-week field training session prior to entering the POC. Application for the two-year program must be made prior to February 1st for students entering the POC in the fall term as juniors.

Financial Benefits and Scholarships: All students enrolled in the POC, whether or not on scholarship, receive a monthly stipend of $\$ 100.00$ for each month of the academic school year. Uniforms, AFROTC books, and equipment are furnished free of charge. Pay and a travel allowance are provided to attend field training. AFROTC provides scholarships on a competitive basis for periods of two to three and one-half years. These scholarships provide tuition, laboratory fees, a book allowance, and the monthly $\$ 100.00$ stipend. Room and board are not furnished.

Obligation to the Air Force: After graduation and commissioning, graduates are called to active duty in the Air Force. The period of
service is four years for non-aircrew members, five years for navigators, and eight years for pilots. Obligations for aircrew members begin following graduation from aircrew training. A contractual obligation is incurred for non-scholarship students when they enter the POC. Scholarship students incur an obligation in their sophomore year.

Flight Activities: Mentally and physically qualified cadets who wish to become Air Force pilots receive approximately thirteen hours of dual and solo light aircraft instruction under the supervision of an Air Force instructor pilot. This training usually takes place between the junior and senior years. If cadets hold private pilot licenses of higher qualifications, the screening involved in this training is not necessary.

Course of Study: Students enroll in one course of Aerospace Studies (ASC) during each term of participation in the program. In addition to the lecture, there is a mandatory one hour Leadership Laboratory with each of the eight terms.

## COURSES OF INSTRUCTION ${ }^{1}$ (ASC)

## 101. Air Force Today I. Cr. 1

Prereq: admission to ROTC; consent of instructor. Growth and development of the U.S. Air Force; Presidential, Secretary of Defense, and Joint Chiefs of Staff roles in the defense posture and in national military strategic concepts; Air Force contribution to strategic offensive, defensive, and general purpose forces. U.S. military forces in general purpose role and national security posture.

## 102. Air Force Today M. Cr. 1

Prereq: admission to ROTC; consent of instructor. Continuation of ASC 101.
201. U.S. Aviation History and Air Power Development I. Cr. 1 Prereq: admission to ROTC; consent of instructor. Development of aviation from the eighteenth century to present; effect of technology on growth and development of air power; wartime use and development of air power through Vietnam conflict; employment in relief missions and civic action programs.
(F)
202. U.S. Aviation History and Aír Power Development II. Cr. 1
Prereq: admission to ROTC; consent of instructor. Continuation of ASC 201.
310. Concepts of Leadership. Cr. 3

Prereq: admission to AFROTC and consent of instructor. Concepts, principles and techniques of leadership and human relations presented within a framework of behavioral theories. Leader, group, and situation: their interaction and organizational environment; methodological implications for military and other professions. (F)

## 311. Principles of Management, Cr. 3

Prereq: admission to AFROTC and consent of instructor. Historical overview of management theory development; impact of behavioral sciences on primary management functions. Problem solving and management; political and power relations in organizational setting.

## (W)

## 410. National Security Forces in Contemporary American Society

I. Cr. 3

Prereq: admission to AFROTC and consent of instructor. The armed forces as an integral element of society. American civil-military relations and the environmental context of defense policy. Social attitudes towards the military; role of military leader-manager in
${ }^{3}$ See page 433 for interpretation of numbering system, signs and abbreviations
democratic society; armed services' values and socialization process; national security requisites; political, economic, and social constraints on national defense structure; impact of technological and international developments.
411. National Security Forces in Contemporary American Society II. Cr. 3

Prereq: admission to AFROTC and consent of instructor; ASC 410. Continuation of ASC 410.

## Campus Maps <br> Signs and Abbreviations <br> Index

| 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 |
| 125 | Helen Newberry Joy Student Services Building |
| 196 | Metropolitan Detroit Justice Center |
| 008 | Kresge Library Building |
| 053 | Law School |
| 006 | Life Sciences Building |
| 069 | David Mackenzie Hall |
| 155 | Alex Manoogian 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 | Purdy Library Building |
| G | Rackham Educational Memorial Building |
| 036 | Walter P. Reuther Library of Labor and Urban Affairs |
| 005 | Science Hall |
| 050 | Natural Science Building |
| 141 | Speech and Hearing Center |
| 016 | State Hall |
| 028 | Urban Studies, Center for |
| DETROIT MEDICAL CENTER |  |
| P | Children's Hospital of Michigan |
| 1 | Grace Hospital Division |
| K | Hannan House |
| M | Harper Hospital |
| 614 | University Health Center |
| T1 | Hutzel Hospital |
| 615 | Kresge Eye Institute |
| 611 | Lande 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 |
| S | Detroit Receiving Hospital |
| 612 | Gordon H. Scott Hall of Basic Medical Sciences |
| 608 | Vera Shiffman Medical Library |




| 600 | Clinical Laboratory Building |
| :--- | :--- |
| W | Detroit Memorial Hospital |
| 604 | Shapero Hall Annex |
| 605 | Shapero Hall |
| Z | Lafayette Clinic |
| Y | Wayne County Medical Society |




## NORTHEAST

Wayne state university - CLL - northeast center St. Basil School, 22860 Schroeder at $\mathbf{3 5 9 0} 9$ Mile Rd. East Detroit 48021
Office Hrs. M-Th 8:30-10, F : :30-5, S 9.4 Phone 771-3730



7-83

NORTH


Livonic Center
Bentley Center
15100 Hubbard LIvonla, MI 48454
Phone: 425-6633
Office Hours: M-Th 5:00-10:00 p.m.


## SIGNS AND ABBREVIATIONS

## SUBJECT AREA CODES


#### Abstract

Subject area codes are two- or three-letter prefixes to the numbers used to identify courses offered by the University. The following index identifies the subject content of these codes and indicates the page number on which courses may be found.


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## COURSE NUMBERING SYSTEMS

## For the College of Education

| 000-499 | Undergraduate credit only. |
| :---: | :---: |
| 500-699 | Undergraduate or graduate credit. |
| For the Faculty of Pharmacy |  |
| 000-299 | Preprofessional Courses. |
| 300-399 | First Professional Year Courses. |
| 400-499 | Second Professional Year Courses. |
| 500-599 | Third Professional Year Courses. |
| 600-699 | Undergraduate/Graduate Course |

## For all other Schools and Colleges

000-099 No degree credit; graded $S$ and $U$.
School of Business Administration: Elementary courses auxiliary to the usual academic program.

College of Engineering: Orientation courses.
100-199 Primarily freshman courses; open to all undergraduates.
200-299 Primarily freshman and sophomore courses; open to all undergraduates who have completed course prerequisites.

School of Business Administration: Primarily junior college courses.

College of Engineering: Lower division courses; open to all undergraduates.

300-499 Junior and senior courses; undergraduate credit. (Ordinarily freshmen and sophomores will not be permitted to register for these courses.)

College of Engineering: Upper division courses.
500-699 Junior and senior courses; undergraduate and graduate credit.

## 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. <br> Offered at least once every academic year (Fall or |
| :--- | :--- |
| (Y) | 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 Courses of Instruction 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.
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[^0]:    $\dagger$ 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.
    $\ddagger$ 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 scheduied for classes which normally meet on Thursday or Friday.

[^1]:    *Students may not receive General Education credit for both European and American History, or for both American Government and Comparative Politics.

[^2]:    ${ }^{1}$ Not applicable for graduate credit.

[^3]:    * 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.

[^4]:    *For complete information, consult the Wayne State University Graduate
    School Bulletin.

[^5]:    * Required as a prerequisite for most advanced computer science courses.

[^6]:    ${ }^{1}$ See page 433 for interpretation of numbering system, signs and abbreviations

[^7]:    * Requires written approval of Department Chairperson.
    ${ }^{1}$ See page 433 for interpretation of numbering system, signs and abbreviations

[^8]:    (T)

[^9]:    ${ }^{1}$ See page 433 for interpretation of numbering system, signs and abbreviations

[^10]:    * For specific requirements, consult the Wayne State University Graduate School Bulletin.

[^11]:    ${ }^{1}$ When a student already holds one type of certificate and is working on another, this residence requirement may be lowered.

[^12]:    * Prerequisites are required for this course.

[^13]:    *Major papers in these courses satisfy the University Writing-Intensive requirement.

[^14]:    * For specific requirements, consult the Wayne State University Graduate Bulletin.

[^15]:    * 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.

[^16]:    ${ }^{1}$ See page 433 for interpretation of numbering systern, signs and abbreviations

[^17]:    653. Teaching English as a Second Language/Foreign Language: Methods II. Cr. 2-3
    Methods and techinques; English as an international/intranational
[^18]:    ${ }^{1}$ See page 433 for interpretation of numbering system, signs and
    abbreviations

[^19]:    ${ }^{1}$ See page 433 for interpretation of numbering system, signs and

[^20]:    ${ }^{1}$ See page 433 for interpretation of numbering system, signs and abbreviations

[^21]:    ${ }^{1}$ See page 433 for interpretation of numbering system, signs and

[^22]:    ${ }^{1}$ See page 433 for interpretation of numbering system, signs and abbreviations

[^23]:    *For information consult the Wayne State University Graduate Bulletin.

[^24]:    ${ }^{1}$ See page 433 for interpretation of numbering system, signs and abbreviations

[^25]:    *For information consult the Wayne State University Graduate Bulletin.

[^26]:    * Must be an approved upper level course.

[^27]:    ${ }^{1}$ See page 433 for interpretation of numbering system, signs and abbreviations

[^28]:    *Students who have completed first year core program may start with ACR 355/455, and repeat ACR 555.

[^29]:    See page 433 for interpretation of numbering system, signs abbreviations.

[^30]:    * For specific degree requirements, consult the Wayne State University Graduate School Bulletin.

[^31]:    ${ }^{1}$ See page 433 for interpretation of numbering system, signs and

[^32]:    * For information consult the Wayne State University Graduate Bulletin.

[^33]:    *For information, consult the Wayne State University Graduate Bulletin.

[^34]:    * For information, see the Wayne State University Graduate School Bulletin.

[^35]:    * Required as a prerequisite for most advanced computer science courses.

[^36]:    * Preferred course to satisfy General Education Requirement.

[^37]:    credits
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[^38]:    * A list of recommended electives is available from University Advising
    or the Department of Radiation Technology.
    * See page 23 of this Bulletin for a list of approved courses which
    will fulfill University General. Education Requirements.

[^39]:    * For specific requirements, see the Wayne State University Graduate

    School Bulletin.

[^40]:    ${ }^{1}$ See page 433 for interpretation of numbering system, signs and abbreviations

[^41]:    *For specific requirements consult the Wayne State University Graduate
    School Bulletin.

[^42]:    * For specific requirements consult the Wayne State University Graduate School Bulletin.

[^43]:    ${ }^{1}$ See page 433 for interpretation of numbering system, signs and abbreviations

    220 College of Liberal Arts

[^44]:    See page 433 for interpretation of numbering system, signs and
    abbreviations

[^45]:    *For specific requirements, see the Wayne State University Graduate School Bulletin,

[^46]:    ${ }^{1}$ See page 433 for interpretation of numbering system, signs and abbreviations

[^47]:    * For specific requirements consult the Wayne State University Graduate School Bulletin.

[^48]:    See page 433 for interpretation of numbering system, signs and

[^49]:    ${ }^{1}$ See page 433 for interpretation of numbering system, signs and abbreviations

[^50]:    For specific requirements, see the Wayne State University Graduate School Bulletin.

[^51]:    ${ }^{1}$ See page 433 for interpretation of numbering system, signs and
    abbreviations

[^52]:    * For specific degree requirements see the Wayne State University Graduate School Bulletin.

[^53]:    ${ }^{1}$ See page 433 for interpretation of numbering system, signs and

[^54]:    ${ }^{1}$ See page 433 for interpretation of numbering system, signs and abbreviations

[^55]:    * For specific requirements consult the Wayne State University Graduate School Bulletin.

[^56]:    ${ }^{1}$ See page 433 for interpretation of numbering system, signs and
    abbreviations

[^57]:    * For specific requirements consult the Wayne State University Graduate School Bulletin.

[^58]:    ${ }^{1}$ See page 433 for interpretation of numbering system, signs and
    abbreviations

[^59]:    ${ }^{1}$ See page 433 for interpretation of numbering system, signs and abbreviations

[^60]:    * For specific requirements consult the Wayne State University Graduate School Bulletin.

[^61]:    *For specific requirements consult the Wayne State University Graduate School Bulletin.

[^62]:    ${ }^{1}$ See page 433 for interpretation of numbering system, signs and abbreviations

[^63]:    * For specific requirements, consult the Wayne State University Graduate ${ }^{1}$ See page 433 for interpretation of numbering system, signs and School Bulletin.

[^64]:    See page 433 for interpretation of numbering system, signs and

[^65]:    See page 433 for interpretation of numbering system, signs and

[^66]:    *For specific requirements see the Wayne State University Graduate School Bulletin.

[^67]:    ${ }^{1}$ See page 433 for interpretation of numbering system, signs and abbreviations

[^68]:    * For specific requirements consult the Wayne State University Graduate School Bulletin.

[^69]:    ${ }^{1}$ Students are responsible for satisfying College Group Requirements.

[^70]:    I See page 433 for interpretation of numbering system, signs and abbreviations

[^71]:    * For specific requirements consult the Wayne State University Graduate School Bulletin.

[^72]:    *For specific requirements consult the Wayne State University Graduate School Bulletin.

[^73]:    * Sociology courses used to satisfy these management and organization skills requirements may also be counted toward the major.

[^74]:    See page 433 for interpretation of numbering system, signs and abbreviations

[^75]:    (I)

[^76]:    * For specific requirements, consult the Wayne State University Graduate School Bulletin.

[^77]:    * Can be waived by passing a competency examination; Oral Communication requirement may also be waived by specific high school preparation.

[^78]:    I See page 433 for interpretation of numbering system, signs and
    abbreviations

[^79]:    ${ }^{1}$ Disease Processes and Therapeutics.
    ${ }^{2}$ Graduate credi! under Senior Rule.

[^80]:    * For specific requirements consult the Wayne State University Graduate School Bulletin.

    380 Faculty of Allied Health Professions

[^81]:    * Preferred course to satisfy General Education Requirement.

[^82]:    * For spectic requirements consult the Wayne State University Graduate School Bulletin.

[^83]:    ${ }^{1}$ see page 433 for interpretation of numbering system, signs and abbreviations

[^84]:    * list of recommended electives is available from University Advising
    or the Department of Radiation Technology.

[^85]:    ${ }^{1}$ See page 433 for interpretation of numbering system, signs and
    abbreviations

[^86]:    *For specific requirements, consult the Wayne State University Graduate Bulletin.

[^87]:    ${ }^{1}$ See page 433 for interpretation of numbering system, signs and
    abbretiations

[^88]:    ${ }^{1}$ See page 433 for interpretation of numbering systern, signs and abbreviations

[^89]:    See page 433 for interpretation of numbering system, signs an
    abbreviations

[^90]:    See page 433 for interpretation of numbering system, signs and abbreviations

